
# Low Cost Software for Higher Education

Anthropology
Art
Authoring Tool
Biology
Business
Chemistry
Computer Science
Education
Engineering
Geography
Geology
Health Science
History
Law
Literature
Mathematics
Music
Nutrition
Philosophy
Physics
Psychology
Research
Sociology
Statistics
Writing

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Fall 1988

C A T A L O G

# Kinko's
# Academic Courseware Exchange

## Fall 1988 Catalog



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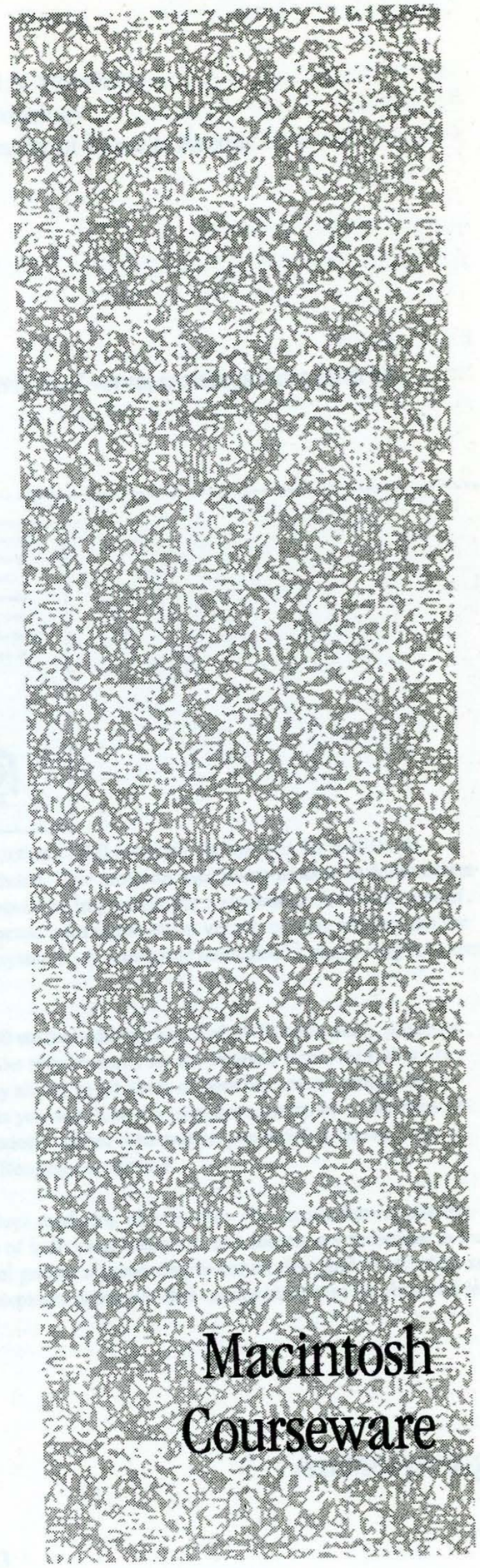


# MacPrimate.Vervet

Application
Version 1.0
Anthropology

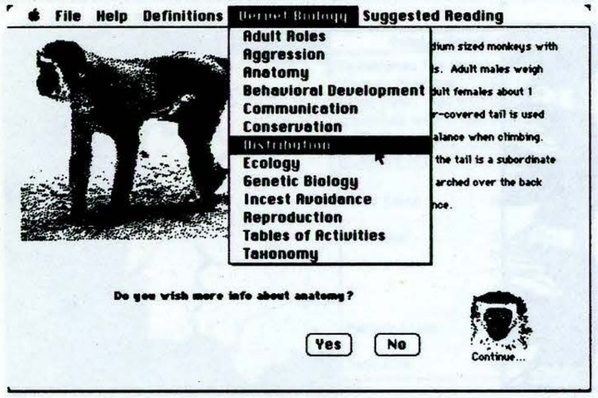
Claud A. Bramblett
Anthropology
University of Texas at Austin

**System Requirements**

Macintosh® computer, minimum 512K.

**Description**

A program that models 18 behavioral activities of vervet monkeys from birth to adulthood.




MacPrimate.Vervet is a computer-assisted instruction (CAI) program that models 18 behavioral activities of vervet monkeys from birth to adulthood. The program uses linear models to demonstrate longitudinal features of primate behavior that would be impossible for a student to observe in a brief study. Definitions, suggested readings, and selected informaton about vervet monkey biology aid the student in understanding the models and social systems. A researcher interested in comparing data sets will also find the 312 graphs of value.

Data for this program was collected by over 900 students during a period of 36 semesters. Students observed a group of vervet monkeys as part of the requirements for the Primate Behavior Laboratory course at the University of Texas, painstakingly sitting in all kinds of weather and recording the different activities of each monkey. The models you watch on the screen are predicted mean rates of activity in acts per hour based on these observations. Other information presented is drawn from published materials listed under the Suggested Readings command.

The most important function of this disk involves modeling of behavior. Questions that require the student to think about long-term consequences of individual behaviors in a society are presented in these exercises to help the student to learn to interpret graphs representing linear models, and to visualize and explore longitudinal processes. The program explores processes that cannot otherwise be observed in a semester class.

**Price**
Single User: $17.50

Anthropology

# Escher-Sketch

Application
Version 1.0
Art and Mathematics

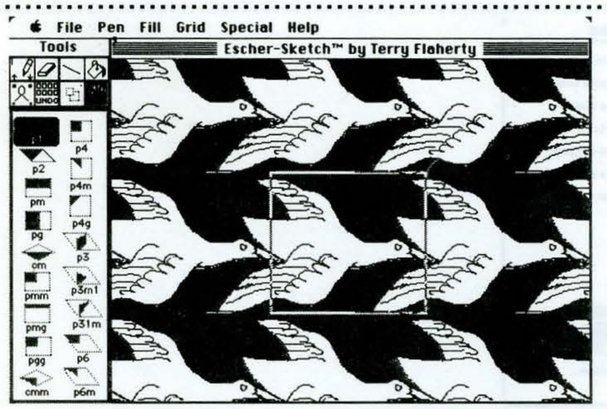
Terry Flaherty
Loyola University

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 5.5.

### Description

An ornamental-design tool that transforms a motif created by the user according to one of 17 different symmetry schemes to produce a wallpaper-type pattern.




Escher-Sketch™ is an ornamental-design tool. It assists the user in creating repetitive, wallpaper-type patterns. This program is of special interest to graphic artists, as well as to students of ornamental design and the mathematics of plane symmetry groups.

Escher-Sketch is interactive. As the user sketches a motif, the program transforms it according to one of 17 different symmetry schemes (based on rotations, reflections and glide-reflections). The basic unit thus formed is then "rubber-stamped" over the screen to form a wallpaper-type pattern. A MacPaint-style tool palette (different pen sizes, straight lines, smooth curves, filling, grids, and so on) makes Escher-Sketch very easy to use.

Escher-Sketch generates the entire pattern as the user manipulates the motif. This feedback enables the artist to hone a new skill—achieving certain global effects that emerge from the computer-aided fusion of the motifs. Various drawing functions may be combined with the symmetry transformations to yield a variety of styles, ranging from the geometrical and computer-like to the more natural and organic-looking.

Application areas include textile design, print making, art history and desktop publishing. Use it to create Escher-like art, consisting of interlocking figures, to produce backgrounds and borders, to assemble a compact (about 2K per pattern) library of traditional patterns, or to develop visual skills in recognizing symmetry types. Patterns can be saved, printed, or combined into slide shows.

**Price**
Single User: $24.50

Art



# Atlas and Overlay

Tool
Version 1.0
General

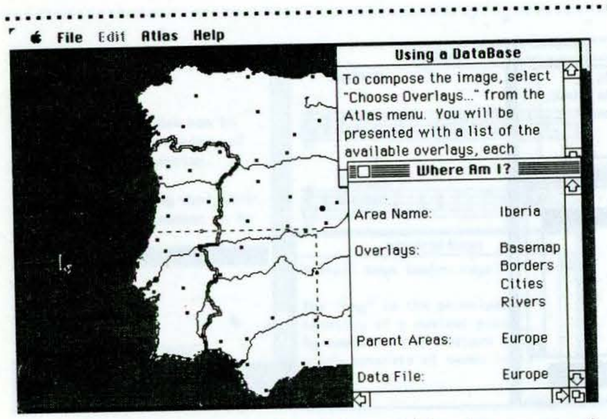
Developers: Carl Spitzer and Anders Pytte
Courseware Development Group
Concept: L. Spitzer and D. Lagomarsino
History
Dartmouth College

### System Requirements

Macintosh computer, minimum 512K. A system disk is also required.

### Description

An authoring tool for creating and manipulating atlases of images on the Macintosh.




Atlas can be used in any field for teaching by means of a pictorial atlas on the Macintosh. The user creates a set of images (with MacPaint®, a video digitizer, or other means) on the desired subject (for instance, European history or frog anatomy). Overlay then allows the user to align the MacPaint pictures on top of each other, in preparation for constructing the data set in Atlas. When Atlas is run with a data set, it allows the student to view the data set of images on the Macintosh, specify a set of overlays to view (such as rivers, towns, mountains, and roads, or nervous system, circulatory system, and skeleton), and zoom in and out to levels of greater or lesser detail, with the overlay set remaining intact.

Overlay is used to align MacPaint pictures on top of each other in preparation for use in Atlas, which can show several images on top of each other. The user aligns the pictures with Overlay before creating the database with Atlas. An example of how Overlay is used is to use MacPaint to put registration marks on a blank overlay and on each of the pictures to be aligned. Then, using Overlay, the blank overlay and the picture to be aligned can be displayed on the screen and the registration marks aligned. The aligned images can be "frozen" in position and saved.

Version 1.0 of Atlas can print images and save them as MacPaint files. It also offers HFS and 128K ROM compatibility, improved "Show Subareas," and selection highlighting, double-clicking to zoom in, reorganized menus, and new help text. Version 1.0 of Overlay includes help text. This distribution disk contains Atlas, a sample atlas of geographic maps (Western Europe), and the Overlay program.

**Price**
Single User: $12.50

Authoring Tool

# CaseMaker and CaseMaker Utilities

Tool
Version 1.0
General Academic Use

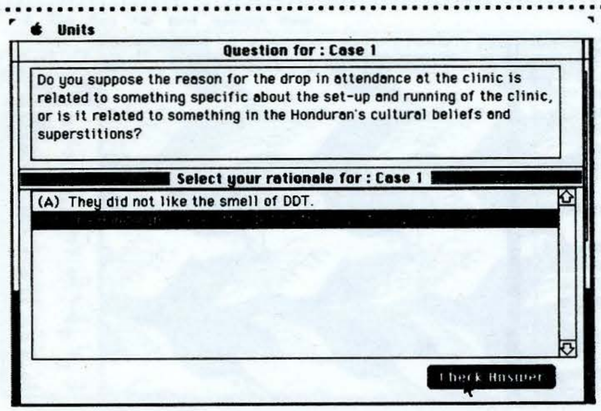
Software Development Group
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3. Requires a word processor that will save documents as "text only."

### Description

CaseMaker is designed for creating and presenting case studies. It poses questions to students after they have read the case, then interactively permits them to choose from a number of responses and statements for their reasoning.




CaseMaker is a software package designed for creating and presenting case studies and accompanying questions. It poses questions to the students after they have read the case, and then permits them to choose from a number of responses and statements for their answers. Various reasoning explanations are presented if an incorrect response is made. If after three tries users have not successfully answered a question, they are given the option of obtaining the correct answer and the rationale for it.

The CaseMaker application is a collection of up to ten CaseMaker documents. Each CaseMaker document can have up to nine cases. CaseMaker documents are created in any word processor using a very simple template. The documents are then loaded into an empty CaseMaker application using the CaseMaker Utility. The user can create an unlimited number of cases with CaseMaker.

**Price**
Single User: $12.00



# Drill

Tool
Version 2.3
General

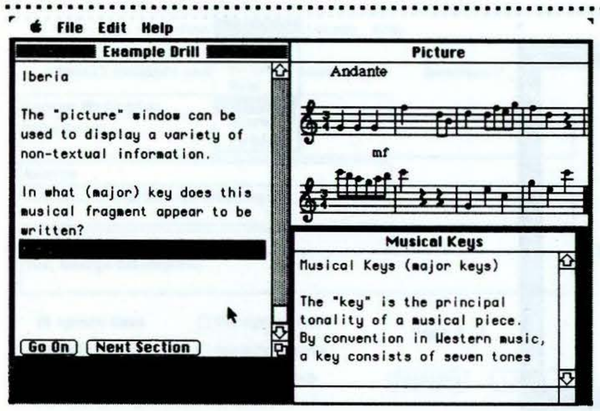
Developers: S. Rogers, C. Spitzer & W. Greenberg
Courseware Development Group
Concept: R. Blake (Spanish Dept.), B. Duncan (German Dept.), and P. Bien (English Dept.)
Dartmouth College

### System Requirements

Macintosh computer, minimum 128K. Macintosh II compatible.

### Description

A general question-and-answer drill program with text and pictures, modeless help, and multiple windows. Drill scripts are created with any word processor.




Drill can be used in almost any course in which text and/or picture-based question-and-answer drills are useful. It handles drills written in any one user-specified font, which can incorporate the alphabets of two languages. Thus, almost any academic discipline can be addressed with a font designed for that subject.

The instructor writes the drill script in MacWrite® and draws the pictures in MacPaint. Additional aid files may be written as desired. When the student selects a drill, he or she is given instructions and questions in a text window; the student's typed answers also appear in the same window. At any time, the student may scroll through any of the aid windows and the drill window to find what is needed. Drills may optionally display portions of MacPaint documents in their own "picture" window.

Version 2.0 has picture handling, flexible answer recognition, improved help, and a clearer Example Drill. Version 2.2 offers font capability, the Hierarchical File System (HFS) and 128K ROM compatibility, simplified menus, clearer feedback for incorrect answers, and improved help text. Version 2.3 works with the Macintosh II and other large-screen Macintoshes. The distribution disk includes:

- Drill, the drill program
- Example Drill, a very short sample drill script
- Two Language Drill, an English-Greek example
- Creating a Drill, a drill script about writing drills
- Ancillary files, for use by the above drills

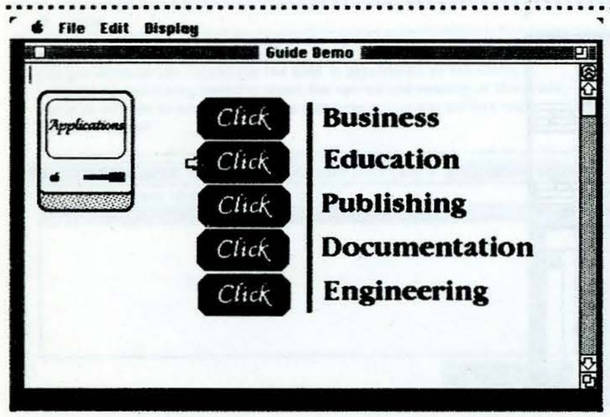
**Price**
Single User: $7.00

# Guide Demonstration

Tool — Owl International, Inc.
Version 1.0
Hypertext

**System Requirements**
Macintosh computer, minimum 512K, and one 800K disk drive.

**Description**
A demonstration of a "hypertext" system for reading and creating dynamic electronic documents. The samples on the disk are not editable and new documents cannot be created.




Guide Demonstration is a demonstration disk of applications that can be created with Owl's Guide. The samples on the disk are not editable and new documents cannot be created. The samples are distributed with the Guide Envelope, which is a "player only" version of the Guide system. The full version is not available through Kinko's Academic Courseware Exchange. Kinko's is distributing the demonstration version in order to promote the development of courseware using unique tools. Information on purchasing the full version of Guide can be received by calling Owl International, Inc. at (206) 747-3203.

Guide is a "hypertext" system allowing the user to write, read, and manage electronic information. Electronic documents are designed to be read directly from the screen without the limitations of paper and page formats. Guide allows you to create user-defined points called "buttons" anywhere within a body of information. When you click the mouse on a "button" on your screen, Guide changes the document for a more comprehensive view of the information. There are three types of buttons in Guide—replacements, notes, and references. The buttons can be used to reveal additional levels of detail, cross-reference multiple documents, or display notes in a "pop-up" window. The user can cross reference, annotate, or animate. Documents can be structured graphically using MacPaint, MacDraw®, or other programs that support the Clipboard. Guide can be used for storing, organizing, tracking, writing, cross referencing, cataloging, communicating, designing, brainstorming, documenting, browsing, arranging, annotating, structuring, experimenting, outlining, presenting, animating, prototyping, and retrieving information.

**Price**
Single User: $11.50

Authoring Tool

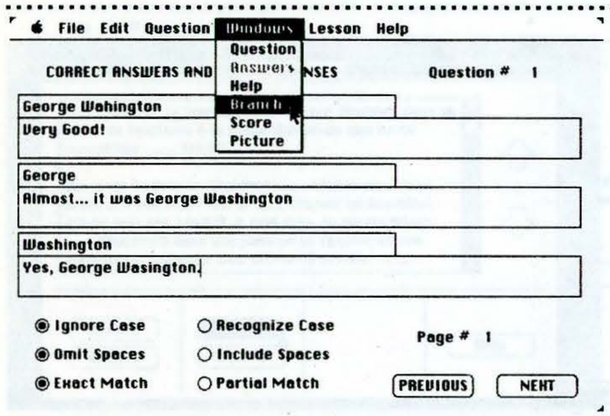


# Lesson Writer

Tool — Sally Soloman
Version 2.2 — Chemistry
General Academic Use — Drexel University

**System Requirements**
Macintosh computer, minimum 128K, with Finder, version 4.1.

**Description**
A tool for creating tutorials, tests, and quizzes containing questions of varying detail and sophistication.




Lesson Writer allows a student or instructor to create interactive tutorial lessons quickly and easily. It is also an authoring tool for instructors to develop lessons, quizzes, and tests, and for students to use as an aid for self-study.

Providing a framework in which questions of varying detail and sophistication can be written, Lesson Writer allows the author to provide the user with hints, pictures, and diagrams. Partial credit may be awarded to designated responses.

Lesson Writer has two main components: Lesson Writer and Lesson Runner. Lesson Writer is the component used to develop and test a new lesson; write questions, responses, and hints; branch to other questions; and score and edit any questions already written. Lesson Runner is used by students to practice the lesson or take the test.

**Price**
Single User: $30.00

Authoring Tool

# Lesson Writer for Chemistry Lessons

Tool
Version 2.2
Chemistry

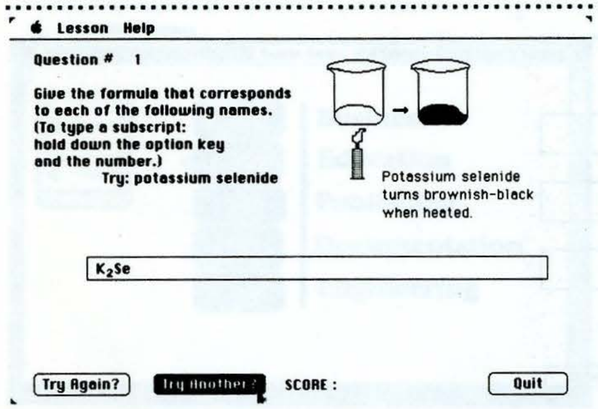
Sally Solomon
Chemistry
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1.

### Description

A tool for creating tutorials, tests, and quizzes for chemistry, containing questions of varying detail and sophistication. This disk includes lessons on inorganic nomenclature.




Lesson Writer allows a student or instructor to create interactive tutorial lessons quickly and easily. It is also an authoring tool for instructors to develop lessons, quizzes, and tests, and for students to use as an aid for self-study.

Providing a framework in which questions of varying detail and sophistication can be written, Lesson Writer allows the author to provide the user with hints, pictures, and diagrams. Partial credit may be awarded to designated responses.

Lesson Writer has two main components: Lesson Writer and Lesson Runner. Lesson Writer is the component used to develop and test a new lesson; write questions, responses, and hints; branch to other questions; and score and edit any questions already written. Lesson Runner is used by students to practice the lesson or take the test.

Two sample lessons on inorganic nomenclature are also included on the disk as well as a MacPaint document of pictures of laboratory equipment that can be used in the creation of new lessons, tests, or lab reports.

**Price**
Single User: $34.00

Authoring Tool



# MacLang

Tool
Version 3.2
Foreign Language and ESL

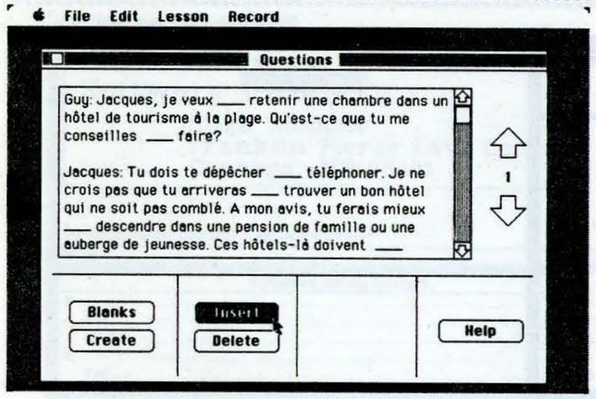
Judith G. Frommer
Romance Languages and Literature
Harvard College

### System Requirements

Macintosh computer, minimum 512K.

### Description

Tool for preparing computer exercises and activities tailored to English-as-a-second-language (ESL) and foreign-language students of French, Spanish, Italian, Portuguese, German, Rumanian, Russian, and Greek.




MacLang is capable of creating exercises in a variety of formats, from basic drills to contextualized activities. The system has the ability to include graphics in the exercises and an audio interface for improving listening comprehension. Options available in the MacLang authoring system ensure that exercises provide students with the immediate feedback, error correction, individual learning experience, and reinforcement that are the main advantages of computer-assisted learning over traditional workbook exercises.

Before each exercise, instructors can write an introduction in which they can include any information they wish: for example, a set of brief instructions or a tutorial reviewing a grammar point or vocabulary topic. MacLang exercises can accept more than one correct answer, and can display appropriate and informative error messages for all incorrect answers the instructor can anticipate. For example, if a student responds using the wrong verb tense, the error message on the screen can explain why that tense is incorrect and can provide the student with a hint for the next try. In addition, since the program stores all incorrect answers made, instructors can continually add to the stock of wrong answers built into the question, eventually creating a completely interactive exercise in which all answers are anticipated. Finally, MacLang either allows the teacher to control the number of tries a student gets to achieve a correct answer, or the teacher can let the student decide when he/she would like to be given the correct answer. This, used in conjunction with the anticipated error feature, allows instructors to create a lesson that leads a student to the correct answer in nearly all cases.

**Price**
Single User: $30.00
Site License: $300.00
Documentation: $5.50
(Doc. for Site License Only)

Authoring Tool

# Matchmaker and Matchmaker Utility

Tool
Version 1.1
General Academic Use

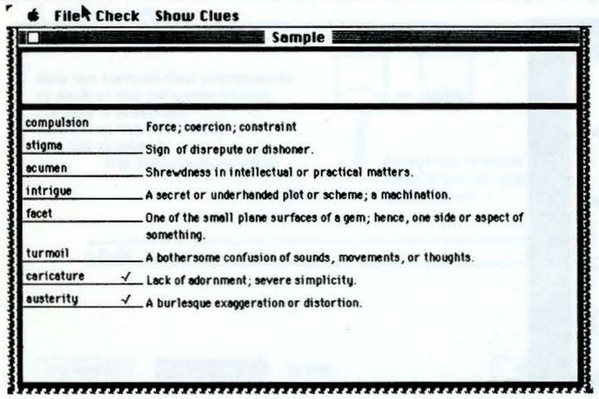
Software Development Group
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3, and one 800K disk drive.

### Description

A program that interactively presents, checks, and scores matching-type quizzes.




Matchmaker is a program that interactively presents, checks, and scores matching-type quizzes. To match words to definitions, the user drags the word to the definition on the screen. The user can then request that the program find and mark any incorrect pairings.

Matchmaker allows the user to develop matching questions on the Macintosh. A Macintosh window has ten answers and ten questions in two different boxes. The user matches the words with the corresponding questions, and the program can check the answers. Also, the user can take advantage of clues by selecting the clue window. This tool is useful for creating quizzes or individualized instructional materials quickly and easily.

Matchmaker Utility, which is also on the disk, is the program used to create the matching quizzes that are run by Matchmaker.

### Price

Single User: $12.00

Authoring Tool



# Oyster

Tool
Version 2.5
Authoring Tool

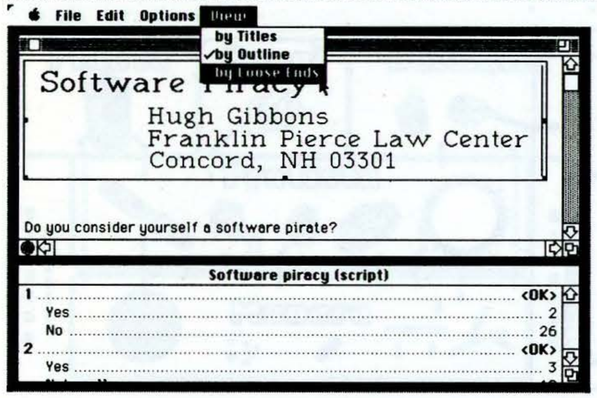
Hugh Gibbons, Bernice McCarthy, and Tom Kent
Poseidon, Inc.

### System Requirements

Macintosh computer, minimum 512K, with System, version 3.2.

### Description

An authoring system that creates stand-alone exercises in all subject areas. The system allows text and graphics, and includes a rich branching structure.




Oyster™ is an authoring system that can be used to create stand-alone exercises in any field or discipline. Unlike drill-and-test systems, it is based on an outline that automatically keeps track of the author's logic in creating the exercise, and so makes possible analytical exercises that teach the thought process. Questions may be presented as text or graphics—for example, the author can present a map and ask the student to click on Des Moines.

Oyster can be used to create exercises that aim at the mastery of information, like the standard drill exercise. But it can also do far more, allowing the author to embody thinking—judgment, esthetics, analysis, contingent reasoning, and so on—in the exercise, presenting the student with questions that have more than one right answer, and allowing the student to choose a line of thought. The outline feature of Oyster tracks the complex branching involved in exercises, keeping track of "loose ends" that the author creates, and allowing the author to move easily through the script via clicking on the outline.

Oyster is fully MultiFinder compatible and runs with Systems 3.2, 4.2, 5.0, and 6.0. Oyster is also multi-user compatible under AppleShare, TOPS, and MacServe.

The package contains three demonstration exercises created using Oyster—"Software Piracy," "Linda and Rufus," and "Algebra 1." Each illustrates a different style of exercise that Oyster can create. All of the sample exercises demonstrate the effect that branching has in creating gripping exercises that capture the thought process.

### Price

Single User: $32.00
Site License: $1,200.00
Documentation: $7.50
(Doc. for Site License Only)

Authoring Tool

# Energetics and Metabolism

## Garden of Biology: Volume 1

Template
Version 1.0
Biology, Biochemistry

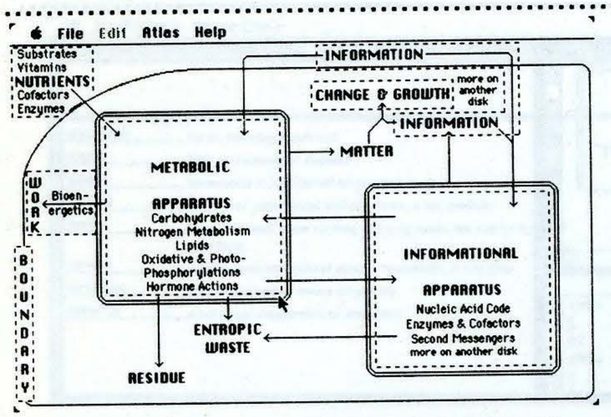
Thomas B. Roos
Biology
Dartmouth College

### System Requirements

Macintosh computer, minimum 512K, and one 800K disk drive. Atlas is also required (see Authoring Tool section).

### Description

The Garden of Energetics and Metabolism illustrates the reactions of metabolism and the interactions among the several metabolic compartments of a cell by using many diagrams of biochemical pathways.




The Garden of Biology series is intended to be an illustration and aid for people who have some knowledge of biology, but who want access to more detail than they can recall easily. Each disk contains far too much material to absorb as an only source of facts; it should be used along with one or more texts or courses. Therefore, the same disk can both extend the amount of information available to a novice and serve as a reference to an expert whose memory is overtaxed by once-learned facts. The first screen image provides the means for accessing the many subareas on each disk. Each garden may contain material from up to six subareas (Cosmos, Earth, Life, Organisms, Diversity, and Species), accessed using the procedures in the Atlas program (see entry under Authoring Tools). On-line aid with the Atlas procedures is available from the Help menu.

The Garden of Energetics and Metabolism has three subareas: Life, Organisms, and Diversity. Life has some information on the origins of life and a summary of the biochemical reactions necessary for life. Diversity contains a simple display of the five kingdoms and of trophic relations among organisms. Much more information on these areas is found in the Garden of Evolution, Volume 2 (see next page).

Organisms includes by far the largest number of depictions on the disk. It has details on ten topics, seven of which also contain accessible subareas. The seven subareas are: Nutrients, Information, Work, Change and Growth, Boundary, Metabolic Apparatus, and Informational Apparatus.

**Price**
Single User: $11.50

Biology



# Evolution

## Garden of Biology: Volume 2

Template
Version 1.03
Biology, Evolution, Genetics

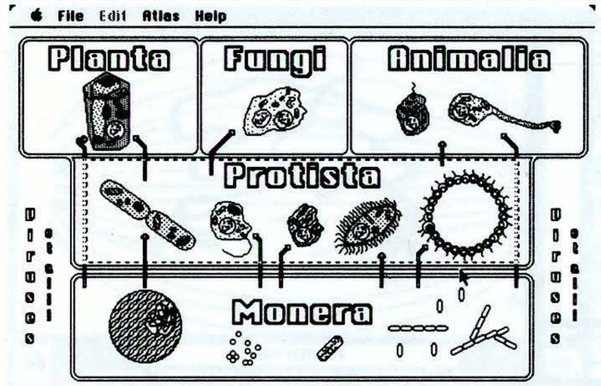
Thomas B. Roos
Biology
Dartmouth College

### System Requirements

Macintosh computer, minimum 512K, and one 800K disk drive. Atlas is also required (see Authoring Tool section).

### Description

The Garden of Evolution illustrates the relations among organisms of many kinds, emphasizing the history and mechanics of their evolutionary change.




The Garden of Biology series is intended to be an illustration and aid for people who have some knowledge of biology, but who want access to more detail than they can recall easily. Each disk contains far too much material to absorb as an only source of facts; it should be used along with one or more texts or courses. Therefore, the same disk can both extend the amount of information available to a novice and serve as a reference to an expert whose memory is overtaxed by once-learned facts. The first screen image provides the means for accessing the many subareas on each disk. Each garden may contain material from up to six subareas (Cosmos, Earth, Life, Organisms, Diversity, and Species), accessed using the procedures in the Atlas program (see entry under Authoring Tools). On-line aid with the Atlas procedures is available from the Help menu.

The Garden of Evolution has six subareas: Cosmos, Earth, Life, Organisms, Diversity, and Species. Cosmos, Earth, and Life have information on the history of the earth, the origins of life, and the history of biology. Organisms includes material on life cycles, trophic interactions, metabolism, and biological information (including the genetic code and its evolution); but is more thoroughly covered in the Garden of Energetics and Metabolism, Volume 1 (see previous page). Diversity contains outlines of taxonomic relationships in the five kingdoms, illustrating their genetic and temporal relations. Species illustrates the differences between blending, particulate, and allelic inheritance, and the conditions (mutation, selection, population size, and migration) that alter genetic stability.

**Price**
Single User: $11.50

Biology

# Model Neuron

Application
Version 1.21
Neurobiology, Physiology, Medicine

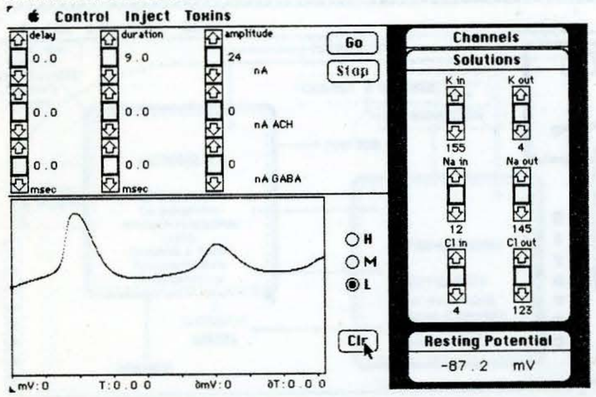
Barry Polley
Cornell University

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 4.1 or later.

**Description**

Interactive study of neuron activity by means of user-designed simulation experiments.




This program simulates the behavior of an isolated excitable cell under user-specified conditions. The user has control of electrical stimuli (current injection or voltage clamp) and chemical stimuli (acetylcholine and/or GABA). The proportions of various membrane channel types; the presence of neurotoxins on the cell; and the concentrations of potassium, sodium, and chloride ions inside and outside the cell can also be adjusted. Output appears as oscilloscope traces that can be copied to the Clipboard for further analysis with other programs.

The program's user interface mimics laboratory stimulus generators and oscilloscopes, but is more flexible and interactive. The program is useful to students and teachers of neurobiology, biopsychology, and medical physiology, in conjunction with lecture or laboratory materials. Students are exposed to the principles of experimental design as well as fundamental phenomena of excitable cells.

**Price**

Single User: $14.00
Site License: $400.00
Documentation: $4.00
(Doc. for Site License Only)

Biology



# Plant Cell Cycle

Template
Version 1.0
Biology

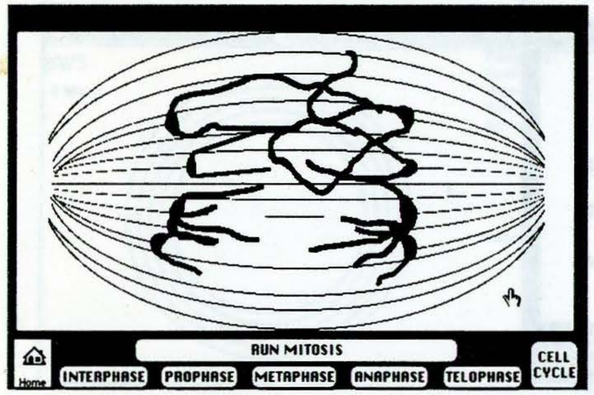
Dr. Lawrence C. Matten
Botany
Southern Illinois University

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

Plant Cell Cycle is a HyperCard stack illustrating plant cell division for use in General Biology and Plant Biology courses.




This program consists of a HyperCard stack for use in General Biology and Plant Biology courses. It is designed to provide the teacher and student with an easily accessible means to view and review the process of mitosis as it occurs in plant cells. The program consists of an illustrated series of descriptions of the process beginning in Interphase (G1, S, G2) and ending in Telophase. The user will find a useful glossary featuring illustrated and animated definitions of important features visible during mitosis including centromere, chromatid, chromosome, spindle fiber, pole and equatorial plane. Animated demonstrations of the entire process of mitosis or any one of its visible stages is also included. The HyperCard animation allows the user to see the process as a continuous sequence of events that have been separated into arbitrary stages based on key visible changes during the process. The courseware has been successfully utilized in General Botany laboratories at Southern Illinois University.

**Price**

Single User: $22.00

Biology

# Plant Paint

Template
Version 1.0
Plant Biology

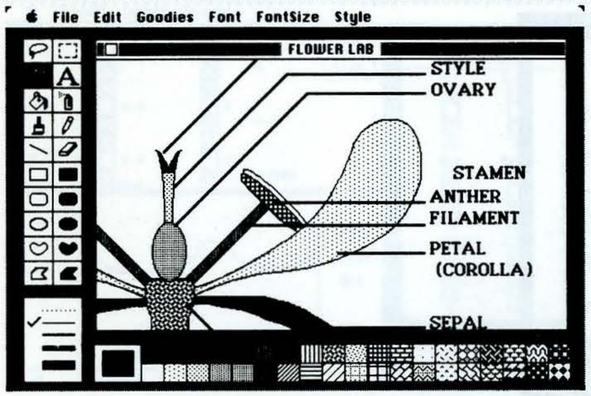
Lawrence C. Matten
Botany
Southern Illinois University at Carbondale

**System Requirements**

Macintosh computer, minimum 128K. A MacPaint-compatible program is also required.

**Description**

A set of 36 graphics images illustrating concepts in plant biology. Images can be used for test and quiz construction, student study and review, and overhead preparation.




This program consists of graphics templates for use in introductory courses in general biology and botany. The graphics are designed to provide both the instructor and the student with a readily accessible source of illustrations to use for study and/or teaching. Many of the graphics are provided in both labelled and unlabelled formats. The labelled formats can be used to make overhead transparencies for use in lectures; the unlabelled illustrations can be imported into tests and quizzes, or they can be used by students in course preparation. Some of the topics included are Cell Cycle, Cell Types, Embryo Development, Floral Structure, Influorescence Types, Leaf Structure, Monosporic Embryo Sac Development, Phloem, Photosynthesis, Placentation Types, Root Structure, Secondary Growth, Stem Structure, Tetrasporic Embryo Sac Development, and Wood. The courseware has been successfully utilized in general biology (for non-majors) and general botany (for majors) courses at Southern Illinois University.

**Price**

Single User: $17.50
Site License: $300.00
Documentation: $3.50
(Doc. for Site License Only)



# PlasmidDraw

Application
Version 3.4
Genetics and Molecular Biology

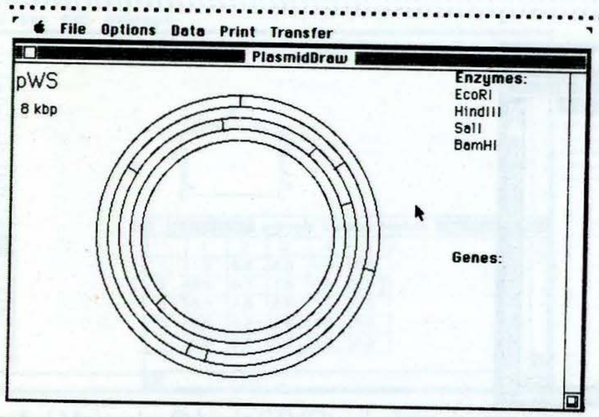
Wolfram Siede, Ph.D
Pathology, School of Medicine
Stanford University

**System Requirements**

Macintosh Computer, minimum 512K, with Finder, version 5.3 or higher. An external disk drive or hard disk drive is recommended.

**Description**

This program facilitates the drawing of circular and linear plasmid maps in molecular biology.




Plasmids are widely used in molecular biology. When the DNA sequence is not known, sites where certain restriction enzymes are able to cut are essential points of reference. Therefore, a researcher involved in gene cloning has a constant need to draw and read restriction maps. These plasmid maps are usually circular, which makes the quantitatively accurate drawing a non-trivial task. In PlasmidDraw, the user can enter original restriction data, and different types of circular and linear maps will be created. Additionally, the fragment pattern in a conventional agarose gel can be shown. Other options include the drawing of linear deletion maps and fragment maps of M13 sequencing. All sets of data can be modified and saved to disk, the program can serve as a database. PlasmidDraw is intended to be used in connection with other graphic programs. The modification and printing capabilities are somewhat limited. Therefore, all drawings can be exported via clipboard to other applications.

Potential users of this program include:

- the novice in gene technology who wants to explore the elements of a plasmid map and who wants to know how a fragment pattern in an agarose gel translates into a restriction map
- the student who needs to draw maps for a thesis, for notes or lab presentations
- the researcher who needs to keep a record of plasmid constructions
- the researcher who has to create presentation graphics for slides, posters, and manuscripts

**Price**

Single User: $19.50

# General Chemistry, Multiplan Templates

Template
Version 1.0
Chemistry

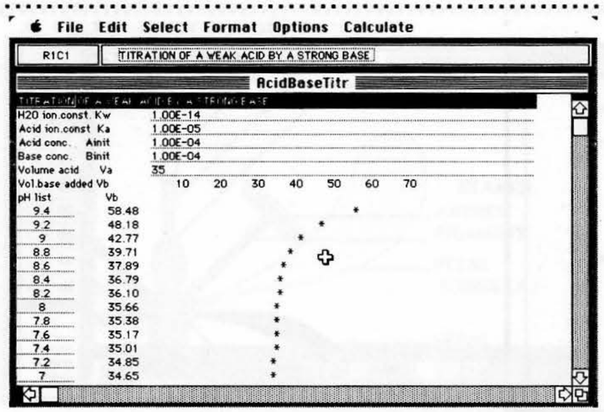
Allan L. Smith
Chemistry
Drexel University

**System Requirements**

Macintosh computer, minimum 128K. Microsoft® Multiplan® is also required.

**Description**

Four Multiplan templates: percentage composition, equilibrium concentrations, acid-base titration curves, and linear regression.




The MolMass template calculates the molecular weight and percentage composition of any compound. At Drexel, students build this template during the first two weeks of general chemistry. It provides an excellent introduction to the capabilities of a spreadsheet for handling tabular data—in this case, the periodic table.

EquilCalc calculates the equilibrium concentrations of the general chemical reaction aA + bB = rR + sS, given the initial concentrations and the equilibrium constant. The concepts of reaction quotient and reaction extent are used.

AcidBaseTitr generates and plots the titration curve of a weak monoprotic acid by a strong base. Equations used are valid for concentrations of acid or base.

LSQ performs least-squares linear regression on a set of data pairs (xi,yi), computing slope, intercept, and correlation coefficient, and displaying residuals in bar-graph form.

**Price**
Single User: $14.50

Chemistry



# Huckel Molecular Orbitals

Application
Version 2.2
Chemistry

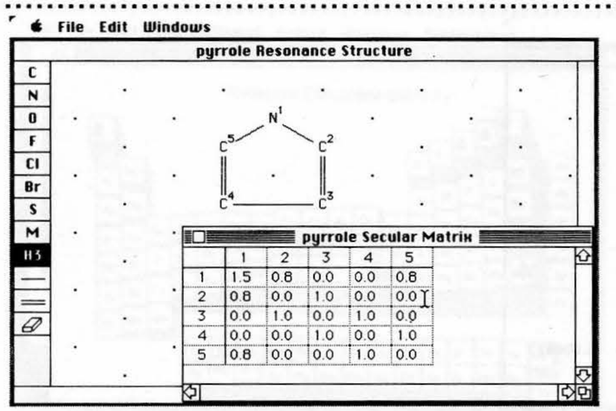
John J. Farrell and Harry H. Haddon
Chemistry
Franklin and Marshall College

**System Requirements**

Macintosh computer, minimum 512K.

**Description**

An application for calculating energy eigenvalues, eigenvectors, pi-electron charge densities, and pi-electron bond orders using Huckel molecular orbital theory.




Huckel Molecular Orbitals (HMO) calculates energy eigenvalues, eigenvectors, pi-electron charge densities, and pi-electron bond orders for conjugated and aromatic molecules using the assumptions of simple HMO theory. Each of these parameters is useful for some chemical purpose: (1) to predict sites of electrophilic and nucleophilic attack, (2) to estimate bond strengths and bond lengths, (3) to predict sites of free radical attack, and (4) to estimate oxidation and reduction potentials.

A resonance structure window is used to enter the resonance structure of the molecule. The window contains a grid of hexagonally-spaced dots marking the location where atoms and bonds can be entered. Along the left side of the window is a MacDraw-style palette to select the type of atom or bond to be entered.

A resonance structure and its secular matrix can be edited and saved. The results (resonance structure, secular matrix, energy eigenvalues, eigenvectors, charge densities, charges, and bond orders) can be viewed in a results window and printed.

This program has been used by students in junior-level and senior-level chemistry courses, and by students and faculty engaged in research projects. This application can be used by anyone who can draw the resonance structure of a molecule.

**Price**
Single User: $20.00

Chemistry

# KSIMS

Application
Version 1.1
Chemistry

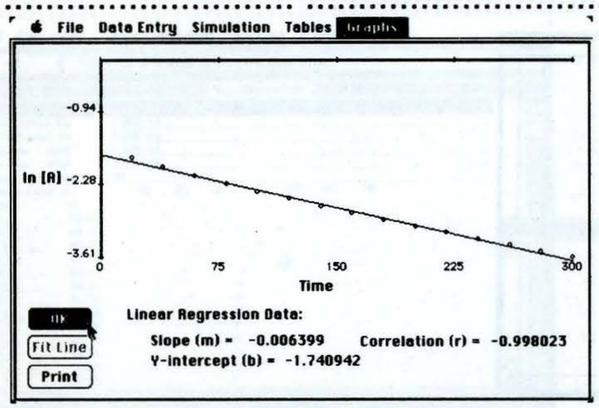
Allan L. Smith
Chemistry
Drexel University

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

**Description**

A simulation for determining the rate law and the reaction rate of a chemical reaction.




KSIMS allows you to perform numerical experiments with simple chemical reactions, such as A + B + C = D + E. You choose one of the 20 stored reactions and set initial conditions, such as temperature and concentration. You then run the reaction and collect data on the concentration of each species at up to 30 time intervals you select. By plotting this data as various functions of concentration and fitting the results to a straight line by a built-in linear regression procedure, you can determine the order of the reaction with respect to each reactant and the overall rate constant for the reaction.

KSIMS has been used in general chemistry courses to introduce the concepts of chemical kinetics and rate laws. It has also been used with undergraduate and graduate students in physical chemistry to present concepts such as pseudo-first-order reactions and flooding.

**Price**
Single User: $21.50

Chemistry



# MacMendeleev

Application
Version 1.0
Chemistry

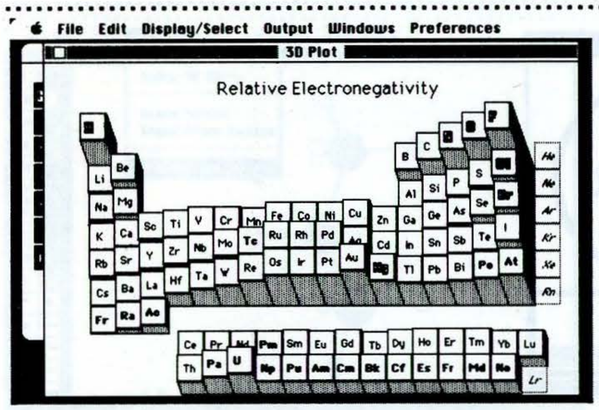
Jon Clardy and Steven Sinofsky
Chemistry
Cornell University

**System Requirements**

Macintosh computer; minimum 512K; also MultiFinder compatible.

**Description**

An exciting and easy-to-use tool for students exploring the properties of the elements and the periodic table. It also provides the practicing chemist with a current and easily modifiable data base of elemental properties that can be useful in a variety of applications.




For a student beginning to learn the fundamentals of chemistry, it is often difficult to grasp the utility of the periodic table with its 100-plus elements and many chemical and physical properties. MacMendeleev puts all of this information at your fingertips, along with the tools necessary to begin to comprehend it. MacMendeleev's data base is prestocked with over 40 of the most common properties. With the accessory TableTool, provided with MacMendeleev, one can add to, delete from, and modify the data base to suit specific needs. MacMendeleev provides a variety of methods of presenting the information in the periodic table:

- A single property can be viewed as a three-dimensional graph of the periodic table, with each element rising above the table in proportion to its value for a given property. This allows an instantaneous qualitative understanding of the property and its variation in the periodic table.
- Any two properties can be viewed on an XY plane, permitting a quantitative understanding of the relationship between properties.
- Any number of properties can be compiled into a tabular listing, a traditional method for making property comparisons. Such a listing can be viewed on the screen or saved to a disk for later use.
- Elements that have a value for a given property falling within a specified range can be quickly selected and viewed.
- For any element, a summary listing all of the data for that element can be displayed, with up to six charts visible at one time for easy comparisons.
- All graphs, plots and tables can be exported to other applications through standard text files and the Clipboard.

Finally, MacMendeleev is easy to use. Students will enjoy exploring the phenomenon of periodicity, and even experienced chemists will find that they still have a thing or two to discover!

**Price**
Single User: $17.00

Chemistry

# MacStereo (R/S)

Application
Version 3.31
Chemistry

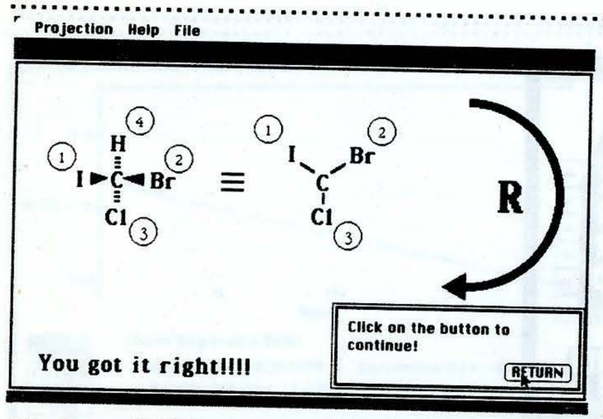
Peter Wade
Chemistry
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

### Description

A program designed to illustrate the Cahn-Ingold-Prelog stereochemical designation system.




MacStereo (R/S) is a program designed to illustrate the Cahn-Ingold-Prelog stereochemical designation system. This program presents the correct designation procedure for molecules with one chiral center using static text and four interactive examples, and presents nine interactive problems of increasing complexity. In the last two problems the chiral center is located on a ring. It also includes a subroutine demonstrating appropriate molecular rotations, the capability of handling molecules with zero and two chiral centers, stereochemical designations for alkenes, and simple stereochemical operations—horizontal and vertical mirror images, and the results of some simple rotations.

**Price**
Single User: $17.00

Chemistry



# Molecular Editor

Application
Version 1.1
Chemistry

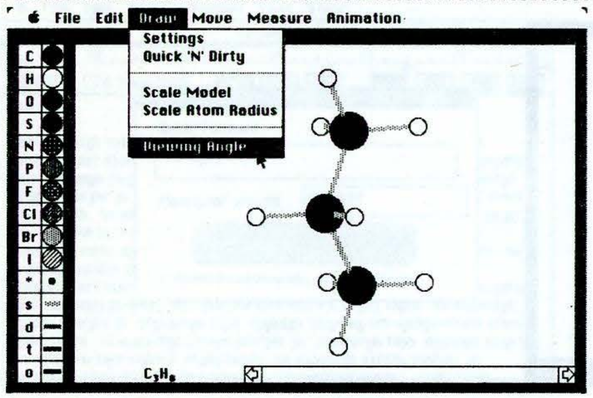
Allan L. Smith
Chemistry
Drexel University

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 4.1, and one 800K disk drive.

### Description

A software-based construction kit for building and displaying molecules, crystals, and other structures that can be represented by interconnected points or spheres in three dimensions.




Molecular Editor allows the user to build and edit structures of more than 100 atoms from any element in the periodic table. Three-dimensional versions of Cut, Copy, and Paste allow the building of molecules from an initial collection of basic structures and functional groups. The program also has the ability to:

- Draw structures with atoms and bonds, bonds only, or atoms only (continuous variation from touching-hard-sphere model to a bonds-only model)
- Rotate a molecule or a portion of a molecule through any angle about any of three orthogonal axes, either by single steps or continuously
- Invert all coordinates through the origin, or reflect coordinates in various planes
- Measure the distance between any two atoms, the angle between any two bonds attached to the same atom, and the torsional angle about a bond
- Store and retrieve images on disk, and print to an Apple ImageWriter® or LaserWriter® printer
- Open as many as 20 files at once and flip between them manually or run through a sequence of opened files automatically to produce three-dimensional animations.

**Price**
Single User: $30.50

Chemistry

# Molecular Editor Demo

Application
Version 1.0
Chemistry

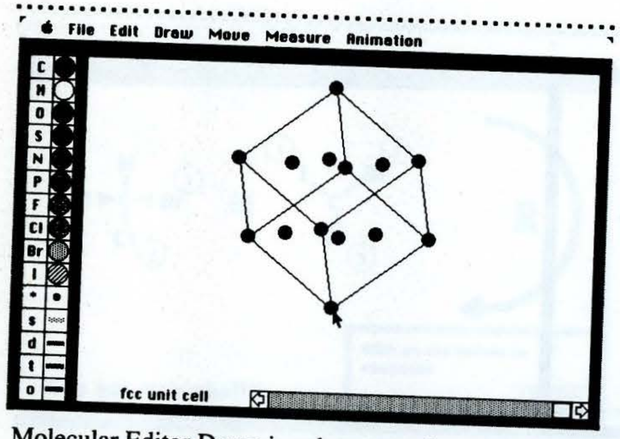
Allan L. Smith
Chemistry
Drexel University

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1.

**Description**

Demonstration version of a three-dimensional molecular graphics program for creating and displaying models of molecules and crystals.




Molecular Editor Demo is a demonstration version of Molecular Editor (see previous page), a software-based construction kit for building molecules, crystals, and other three-dimensional structures. Molecules containing any element in the periodic table can be built and edited on screen. Three-dimensional versions of Cut, Copy, and Paste allow you to modify any molecule with a collection of substructures or functional groups of your design. You can draw structures in various ways (ball and stick, wire frame, space-filling) and rotate a molecule through any angle about any axis. You can measure the distance between atoms, the angle between bonds, and the torsional angle about bonds. You can also change the perspective.

On a Macintosh 512K computer, you can animate a sequence of open files rapidly (five frames per second). This demonstration version differs from the full version in that files created or modified cannot be saved, no printout can be made, and a limit of 15 atoms per molecule is set. The disk contains the demonstration, a 40K help file, brief documentation, and six examples of molecules and crystals.

**Price**
Single User: $7.00

Chemistry



# Molecular Weight Calculator

Desk Accessory
Version 1.0
Chemistry

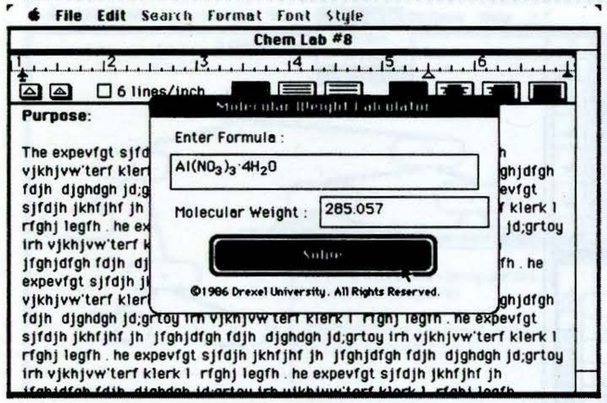
James Friend
Chemistry
Drexel University

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

**Description**

A desk accessory for computing the molecular weight of an entered formula.




Molecular Weight Calculator (MWC) is a desk accessory that permits the user to calculate the molecular weight (sometimes called molar mass) of any element or compound whose chemical formula is known.

Both the formula and the molecular weight can be copied, cut, and pasted into other applications or into the standard calculator desk accessory.

Molecular Weight Calculator is simple to install and easy to use. Since it is a desk accessory, it is available for use at any time when an application is open. The program uses internationally recognized atomic weights as the basis for computing the molecular weight of a compound or element. Included with the desk accessory is a font that makes it easy to enter superscripts and subscripts.

**Price**
Single User: $13.00

Chemistry

# PeriChart

Application
Version 1.3
Chemistry

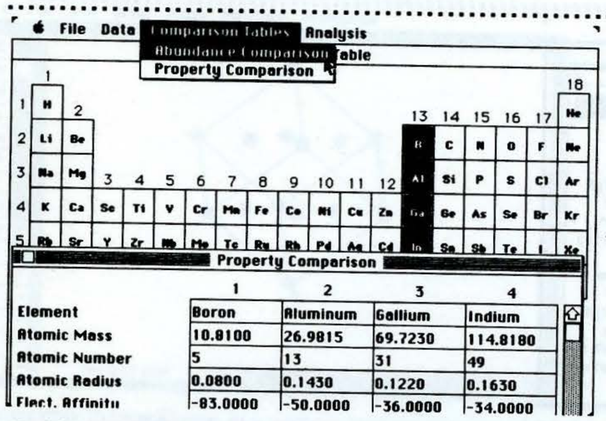
James Friend
Chemistry
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3, and one 800K disk drive.

### Description

PeriChart is a data base of atoms and elements that can be searched easily through interaction with an electronic display of the periodic chart.




PeriChart is a data base of atoms and elements that can be searched easily through interaction with an electronic display of the periodic chart. Pull-down menus enable the user to manipulate the data and to select practice exercises for use by students learning basic nomenclature and positioning within the periodic chart. PeriChart is a useful tool for students at all levels as well as for serious professionals.

For students, the program provides drill and practice in a game-like format at three levels of difficulty and in three areas: names and symbols of the elements, positions of the elements in the periodic chart, and valence electron configurations. These activities also enable the student to explore the systematic manner in which properties vary with position in the periodic chart.

For professionals, PeriChart provides easy and direct access to up-to-date values of all properties contained in the data base. Properties include atomic radius, atomic mass, elemental abundances in the Earth's crust and in the universe, isotopic masses and their abundances in the Earth's crust, electronegativity, electron affinity, ionization energy (1st), atomic radius, ionic radius, normal oxidation states, and valence electron configuration.

Finally, a molecular weight calculator is built into the program. With this feature, the user need only type in a chemical formula to obtain molecular weight information, thereby replacing the cumbersome process of looking up individual atomic weights and computing molecular weight on a hand calculator while carefully parsing the chemical formula.

**Price**
Single User: $22.00

Chemistry



# Binary Trees

Application
Version 2.3
Computer Science

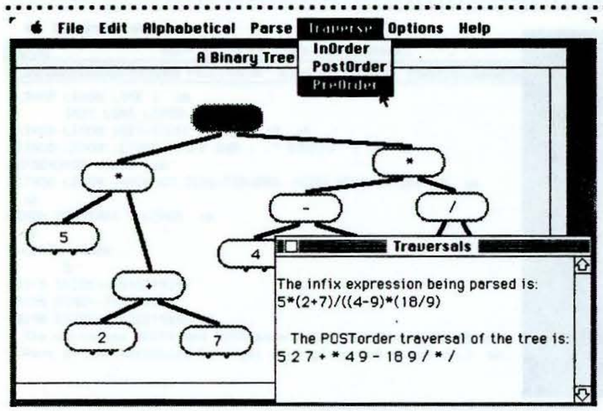
Developer: John Glenn
Concept: Mark Sherman
Math and Computer Science
Dartmouth College

### System Requirements

Macintosh computer, minimum 128K.

### Description

A program that allows users to experiment with binary trees in a graphical, interactive fashion.




Binary Trees enables computer science students to experiment with binary trees, a normally abstract concept, in an interactive fashion. It offers practice with binary trees used as an alphabetically sorted list and binary trees used as a "parse tree" for arithmetical expressions.

Binary Trees creates a graphic representation of a binary tree as the user enters either words to be alphabetized or arithmetic expressions to be parsed. At any time, a tree may be traversed in in-order, post-order, or pre-order. Parsing of infix, postfix, and prefix expressions is also permitted. Brief explanations are included in the program.

Version 2.3 is HFS and 128K ROM compatible.

**Price**
Single User: $7.00

Computer Science

# Event Tutor and Skel

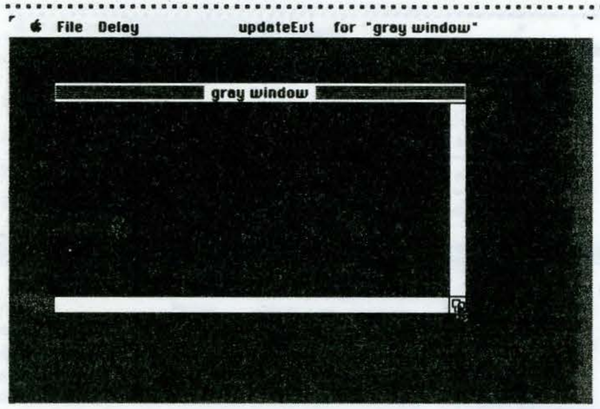
| | |
|---|---|
| Application | S. Maker and B. Meike |
| Version 1.1 / 3.1 | Courseware Development Group |
| Macintosh Programming | Dartmouth College |

### System Requirements

Macintosh computer, minimum 128K. LightSpeed Pascal, ResEdit, Inside Macintosh, and a text editor are required for the use of Skel.

### Description

Event Tutor is a program for learning about "events," a concept important in Macintosh programming. Skel is a skeleton Macintosh program (written in LightSpeed Pascal) providing a source code that can be studied and modified. The purpose is to teach Macintosh program development.




Event Tutor helps Macintosh programmers learn about "events." Each time an event is received by the program, the Macintosh beeps and then shows in the menu bar, the event name, the window involved (if any), and, if it is a "system" event (not to be handled by the programmer), a bullet. The program has a two-second delay between events; the delay may be altered with the "Delay" menu.

Skel is a package used for teaching Macintosh programming, based on LightSpeed Pascal. It is a set of three small Macintosh programs of graded complexity, along with a study guide. Its purpose is to illustrate in a clear fashion, isolated from any particular application, the basic code for handling a simple Macintosh user interface. LightSpeed Pascal is an excellant tool for learning to program the Macintosh. Feedback is very fast and there is a good source-level debugger.

To use the Skel package, read the study guide. Starting with TinySkel, read the source code and look up the Inside Macintosh calls used to understand how the program works. Then move to smallSkel, the next level of complexity. When you understand SmallSkel, follow the suggestions in the study guide to make incremental changes to bring smallSkel up to Skel. This gives actual practice in Macintosh programming in a manner that avoids many of the wild debugging problems that often occur. When you have reached a stage of familiarity with Skel, modify it to test your knowledge. Steal working pieces of code for your own programs. Beat on it. Subject it to cruel and unusual experiments.

For version 3.1, Skel was moved to LightSpeed Pascal, two smaller programs were created for a smooth learning path, and the study guide was written. The disk contains EventTutor, the Skel study guide, all source codes ( in LightSpeed and TEXT formats) and, the running Skel applications.

### Price

Single User: $7.00



# ForthTalk Kernel and ForthTalk Library

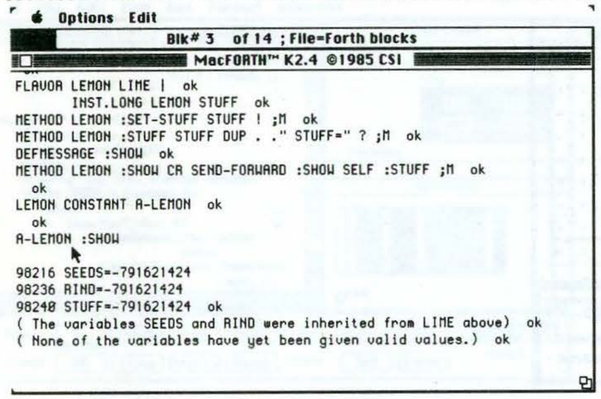
| | |
|---|---|
| Template / Tool | Stephen D. Lindner |
| Version 1.81 | InSite Computing |
| Computer Science | |

### System Requirements

Macintosh computer, minimum 512K. MacForth K3.5x and ForthTalk Kernel (for the use of ForthTalk Libarary) are also required.

### Description

ForthTalk™ provides a complete interactive object-based programming environment on the Macintosh computer. ForthTalk Library is a collection of flavors that supports the ForthTalk Kernel program.




ForthTalk is an object-based programming environment modeled after the LISP machine flavor systems. It is ideal for instructional use because it is interactive and because of its extensive debugging tools. The debugging tools include crash trace backs, unlimited break point and at point settings, and formatted object dumps that may be tailored by the user.

ForthTalk is also useful in a research environment because of its speed and capability. ForthTalk's flavor (class) system is a multiple inheritance model. It has flavor, instance, and method variables, late binding messages, and method combination primitives.

ForthTalk can run on a Macintosh 512K computer and does not require a large central file system. Institutional licensing is available for unlimited copying of its underlying MacForth system. It is an ideal tool for teaching object-based programming at the senior level.

ForthTalk Library consists of examples that can be used with the ForthTalk Kernel. They include: Vanilla, EventLoop, and storage management flavors; source code from chapter one of the tutorial; flavors for simple window management; and a flavor for a MacDraw-style window.

The documentation included with the ForthTalk Kernel disk explains the examples on the Library disk.

### Price

| | |
|---|---|
| Kernal: | $30.00 |
| Library: | $25.00 |

# Karel GENIE

Application
Version 1.0
Computer Science

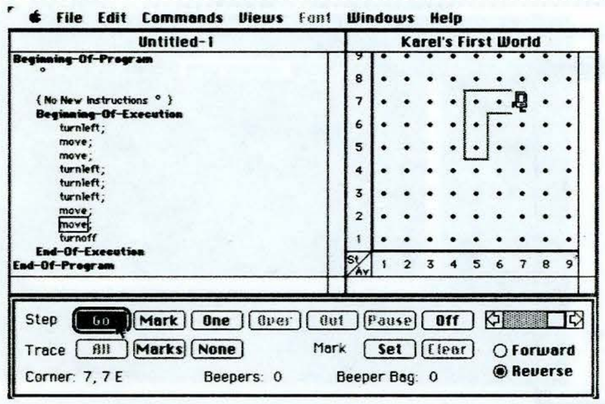
R. Chandhook, D. Garlan, P. Miller,
J. Pane, and M. Tucker
The MacGnome Project
Carnegie-Mellon University

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 5.5, and two disk drives. A system disk is also required.

### Description

An integrated, language-oriented environment for Karel the Robot.




Karel Genie is a full-featured programing environment implementing Karel the Robot. Karel the Robot is a language designed to teach computer science principles such as procedural abstraction, control structures, and sequential execution.

Karel Genie's structured environment eliminates the possibility of syntax errors. It has a fully integrated execution environment that facilitates program construction and debugging. Karel also provides alternative program views.

A curriculum for Karel is found in Programming by Design (Wadsworth, 1987) or Karel the Robot (Wiley, 1981). It is a pre-Pascal or pre-Modula language and course of study.

**Price**
Single User: $28.00

Computer Science



# Pascal GENIE

Application/ Tool
Version 1.0 B1
Computer Science

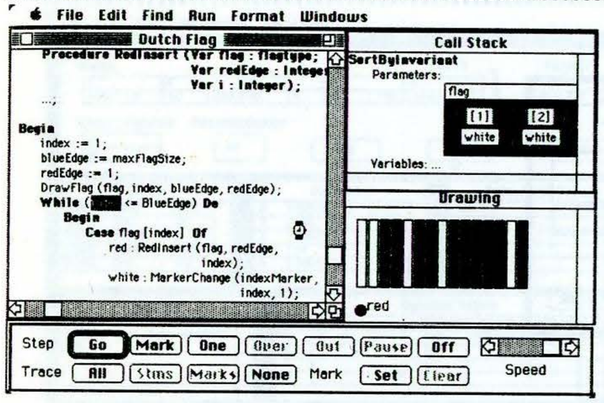
Ravinder Chandhok and The MacGNOME Project
Computer Science
Carnegie Mellon University

### System Requirements

Macintosh computer, minimum Macintosh Plus, with Finder, version 6.0 or 6.1. An external disk drive or a hard disk is also required.

### Description

Pascal Genie is an integrated, language oriented environment for Pascal. The GENIE includes advanced features to support the process of teaching computer science.




Pascal GENIE is a full-featured programming environment for teaching with Pascal. Used in teaching the CS1 level courses at Carnegie mellon for six semesters, the environment is tailored to the needs of the novice. Pascal GENIE is designed to be used along with Karel GENIE to facilitate a pedagogically sound introduction to programming methodology.

Pascal GENIE's structured environment eliminates the possibility of syntax errors. It has a fully integrated execution environment that facilitates program construction and debugging. In addition, the GENIE provides new and innovative tools for the teacher. These include outline views of the program, stubbing support, notecarding, and graphical views of both the program and its data.

**Price**
Single User: $15.00

Computer Science

# Pascal Pointers

Application
Version 1.5
Computer Science

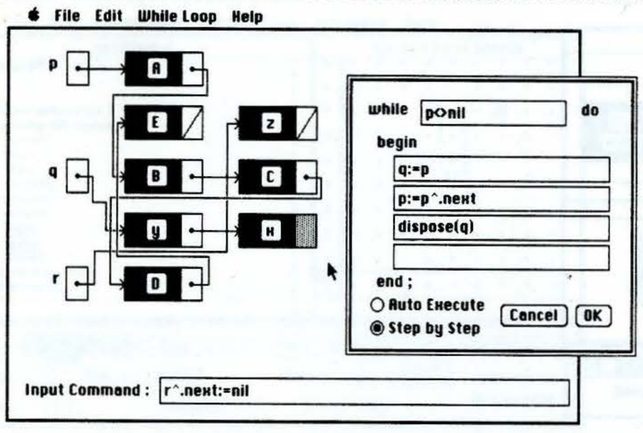
Jeffrey L. Popyack
Mathematics and Computer Science
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1, and one 800K disk drive.

### Description

Interprets and displays pictorially the results of Pascal commands that use pointers and dynamic variables.




Pascal Pointers provides users with a mechanism for learning to use pointers and dynamic variables in Pascal. The concept arose from the great deal of difficulty students had exhibited in learning this material in programming courses. This material is fundamental for further computer science work.

The user is supplied with a display that shows an initial data structure. The display is similar to that used in most Pascal textbooks. The user is allowed to enter commands from a subset of Pascal commands that use pointer variables. As each command is entered, the display is updated to demonstrate the effect of the command on the given structure. Syntax and semantic errors are detected by the interpreter, with appropriate diagnostics. Some on-line help is also provided. A while-loop simulator allows users to experiment with iteration.

The package may be used by an instructor for classroom demonstration, or by the student for self-instruction. A set of lessons is available, each of which provides some initial structure and asks the user to alter the structure in some way. The instructor may also use the package to create additional lessons.

### Price

Single User: $17.00

Computer Science



# The SmallGol Compiler

Application
Version 1.0
Computer Science

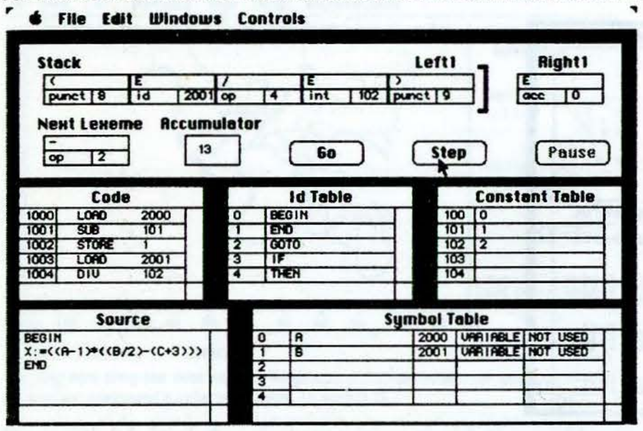
Thomas A. Standish
Computer Science
University of California, Irvine

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1.

### Description

An animated compiler that displays animated, dynamic pictures that reveal how a compiler works.




SmallGol is an animated educational compiler for a tiny programming language. When SmallGol is running, it can display several windows. These windows can be individually scrolled, resized, and repositioned to create different displays convenient for watching how separate parts of the compiler work. A control panel allows users to set the compiler speed and isolate various subsystems of the compiler for study. After the subsystems have been analyzed in isolation, interactions between the subsystems can be studied to acquire an understanding of how the whole compiler works. There are controls for tracing, stopping, and stepping (using a "Step" button that advances the action one step at a time). This enables the fine-grain details of each subsystem to be studied at leisure.

A manual accompanying the SmallGol disk provides a complete explanation of how SmallGol works. The disk also contains MiniAda, a slightly richer animated compiler that the student is challenged to run and understand after SmallGol has been mastered. Finally, the disk contains SmallEdit, a text editor for creating SmallGol and MiniAda programs.

### Price

Single User: $16.50

Computer Science

# LC's LN

Template
Version 3.0
Dance Movement Notation

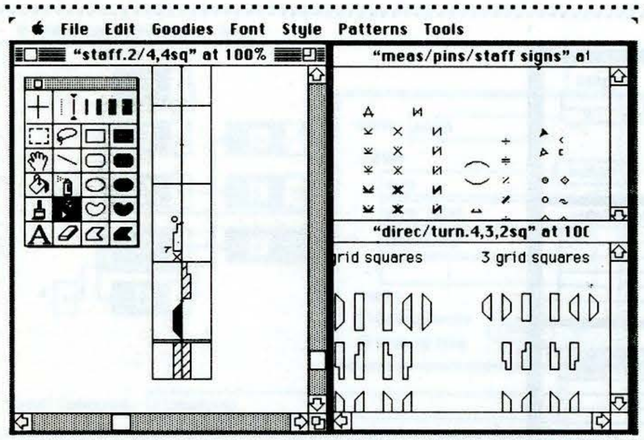
Elsie Ivancich Dunin
Dance
University of California, Los Angeles

### System Requirements

Macintosh Computer, minimum 512K, with an external disk drive or a hard disk. FullPaint or MacPaint is also required.

### Description

A program used for writing Labanotation with FullPaint (or other MacPaint-compatible programs).




LC's LN facilitates the the writing process of notating dance movement for those who already know the Labanotation method. With this program one can easily change, adjust, adapt, copy, or duplicate notation symbols, whole measures, movement phrases; add text and number information; and create floor plans. The notator can start with the rough draft of the dance movement and end with a photo-ready copy of the notation using about a fifth of the time required to produce notation manually.

LC's LN has a selected glossary of Labanotation symbols that are basic to most dance movement notation. The Labanotation symbols are properly sized to fit various note values. There are seven sizes (2, 3, 4, 5, 6, 7, 8 grid squares) of Labanotation direction symbols that can fit on staffs that are scaled four, six, or eight squares to a quarter note. The LC's LN program also includes music notes and staffs that are sized to match the Labanotation staffs.

The manual, Guide to LC's LN, is prepared so that a notator with very little previous computer experience is able to produce computerized Labanotation within two to six hours of self-instruction.

**Price**
Single User: $18.00

Dance



# Planet Earth

Application
Version 1.01
Geology and Planetary Science

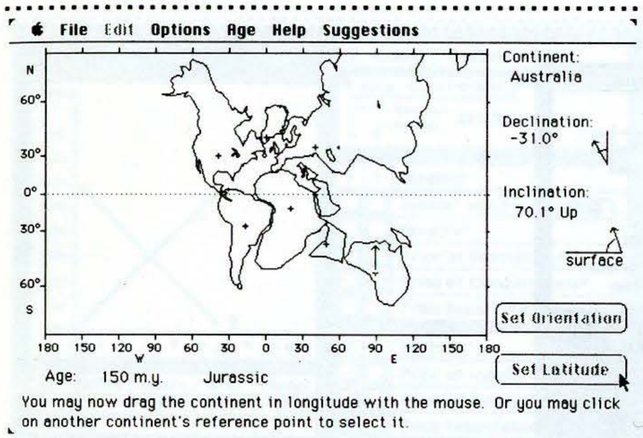
Victor A. Schmidt
Geology and Planetary Science
University of Pittsburgh

### System Requirements

Macintosh Computer, minimum 512K, with System 3.2 or higher.

### Description

This package includes six interactive simulations of basic geophysical concepts. It is designed to accompany the Annenberg/CPB Projects Planet Earth Telecourse. The simulations may also be used individually to supplement any earth science course.




This package includes six interactive simulations of basic geophysical concepts: location of earthquake epicenters, sea-floor spreading, paleomagnetism and continental drift, radioisotope age dating, the Coriolis effect, and the concept of numerical models. It is designed to accompany the Annenberg/CPB Projects Planet Earth Telecourse. The simulations may also be used individually to supplement any earth science course.

Each simulation begins with a brief introduction that presents an essential geophysical concept. The student then may manipulate the simulation in its simplest form. An options menu allows varying parameters of the model, providing the student with an unstructured environment in which to explore the concept, while a Help menu provides on-screen help and further explanation of the concepts. A Suggestions menu is the key to exploring the concepts in a structured manner. Each of up to nine suggestions leads the student through increasingly complex variations of the basic concept and asks study questions to test the student's understanding.

Documentation includes a brief introduction to the subset of the Macintosh User Interface used in these programs along with text from the programs that will enable the student to review the concepts. Answers to the study questions are also provided.

**Price**
Single User: $24.00

Earth Science

# The Weather Modelling Kit

Application
Version 1.0
Earth Science, Physical Science, and General Science

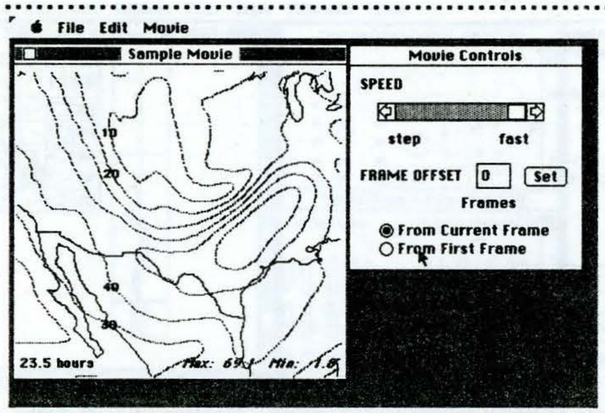
Douglas Alan Paine
Meteorology
Cornell University

**System Requirements**

Macintosh computer, minimum Macintosh Plus. Either a hard disk or external disk drive is required.

**Description**

This program consists of The Gallery of Storms data base and program applications that translate, contour, and animate two-dimensional fields of numeric data. Also included is a weather prediction model that simulates weather events.




The Weather Modelling Kit consists of three programs: (1) ATMOS Translator accepts numerical data formatted as 2-D arrays and creates a new file which is in a suitable format to be used by the Animator. (2) ATMOS Animator functions both as contouring software and as animation software by creating a "movie" of these individual contour plots. (3) Macstorm represents meteorology's first numerical weather prediction model. Included with the kit is the Gallery of Storms, a data base for Macstorm, which enables Macintosh users to simulate the weather events surrounding famous hurricanes, snowstorms, blizzards, and tornado outbreaks affecting the United States and Canada over the last 40 years.

**Price**
Single User: $35.00
Site License: $800.00
Documentation: $8.50
(Doc. for Site License Only)



# EconLab

Application
Version 1.0
Economics

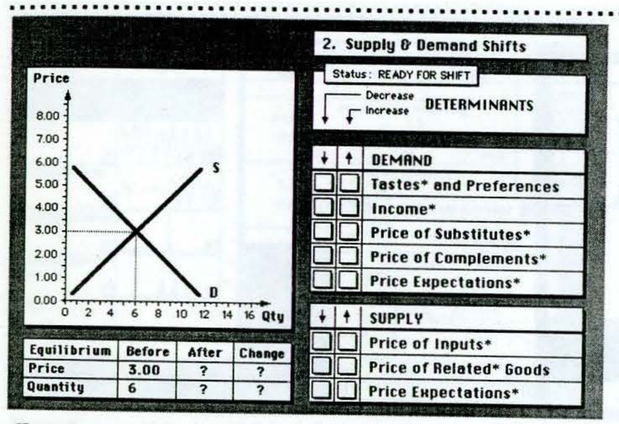
Bill Phillips
Economics
University of Southern Maine

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

An interactive laboratory on the principles of economics.




EconLab is an interactive Principles of Economics laboratory. It covers the basic economic concepts essential to build a solid foundation in an Introductory Economics course or to review for more advanced courses. Topics include:

- Trade-Offs: Constant Costs, Variable Costs, and Economic Growth
- Demand: Price/Quantity Changes and Supply Curve Shifts
- Supply: Price/Quantity Changes and Supply Curve Shifts
- Equilibrium: Shortages and Surpluses, Disequilibrium Prices

The interweaving of graphical presentation and textual explanations enables students to:

- Make economic choices and see the results with verbal reinforcement
- Draw their own supply and demand curves
- Change prices and quantities along the curves
- Change the determinants of supply and demand to shift the curves
- Experiment with various disequilibrium and equilibrium prices

Each lesson includes an introduction to the concepts and principles covered. An extensive glossary provides immediate, hypertext access to keyword definitions from anywhere within EconLab.

**Price**
Single User: $20.00
Site License: $500.00
Documentation: $6.00
(Doc. for Site License Only)

# Discrete Signals and Systems I

## Signal Operations

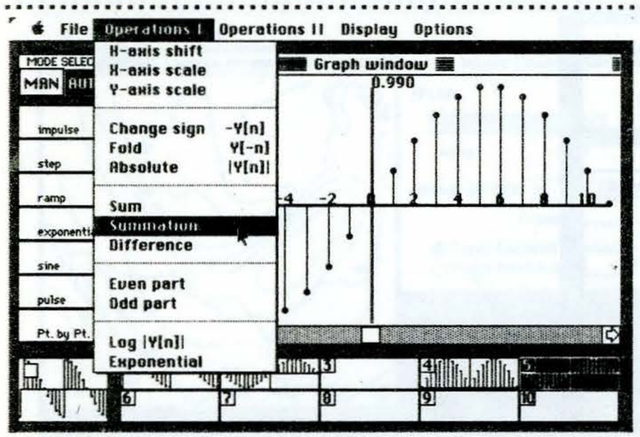

Application — Banu Onaral
Version 1.21 — Electrical and Computer Engineering
Signals and Systems — Drexel University


### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1.

### Description

An interactive exploratory tool to visualize and experiment with theoretical and applied concepts in discrete signals and systems. This is part I of the Discrete Signals and Systems package.




Signal Operations is the first of a three-module package called Discrete Signals and Systems, designed to provide students with an interactive environment to explore a multitude of theoretical and applied concepts in discrete signals and systems, while routine computations and display tasks are performed by the computer. The second module is Transforms, Windows, Modulation... (see page 49). The third module, currently in development, is System Operations.

Using the Signal Operations module, discrete real signals can be created on a working window and stored in any of ten on-screen "storage bins." Predefined signals (impulse, step, ramp, exponential, sinusoid, and rectangular pulse) can be generated, or signals can be created point by point. After one or more signals are generated, the following mathematical operations and algorithms can be performed to obtain new signals: time-shifting, time scaling, amplitude scaling, rotation about the x-axis, rotation about the y-axis, absolute value, running sum, difference, even part, odd part, logarithm, exponentiation, addition, subtraction, multiplication, division, convolution, and correlation. Signals can be interactively edited and compared to other signals. Generated signals can be saved on the disk and accessed by other programs in the Discrete Signals and Systems package.

The programs in the Discrete Signals and Systems package are best suited for signals and systems, communication theory, digital signal processing, and digital filters courses at all levels of the engineering curriculum, from the sophomore level through graduate studies and continuing engineering education. Discrete Signals and Systems I and II are available as a package for $40.00.

### Price

| | |
|---|---|
| D.S.S. I | $15.00 |
| D.S.S. I & II | $40.00 |

Engineering



# Discrete Signals and Systems II

## Transforms, Windows, Modulation...

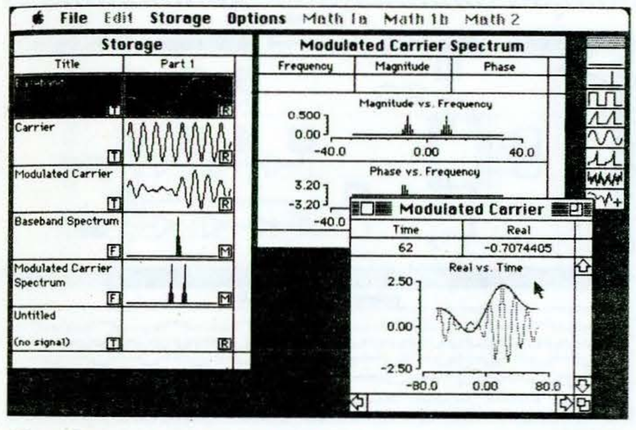

Application — Banu Onaral
Version 2.0 — Electrical and Computer Engineering
Discrete Signals and Systems — Drexel University


### System Requirements

Macintosh computer, minimum 512K, with Finder, version 5.5, and one 800K disk drive. For optimal performance a Macintosh II is recommended.

### Description

An interactive exploratory tool to visualize and experiment with theoretical and applied concepts in discrete signals and systems. This is part II of the Discrete Signals and Systems package. Version 2.0 has been redesigned to take full advantage of the Macintosh Plus, Macintosh SE, and Macintosh II computers.




Transforms, Windows, Modulation... (version 2.0) is the second module of a three-module package called Discrete Signals and Systems, designed to provide students with an interactive environment to explore a multitude of theoretical and applied concepts in discrete signals and systems. A variety of waveform generation, manipulation, and edit functions are provided to operate on complex data arrays.

With the Transforms, Windows, Modulation... module, discrete complex signals can be created on a Graph / List Window in either time or frequency domains and stored in on-screen "storage bins." Signals can be generated from predefined signals on the Function Generator Pallete, entered point by point (either textually or graphically), or created as a result of a combination of available mathematical operations. Signals can be transformed between the time and frequency domains using the discrete Fourier transform implemented by the Fast Fourier Transform (FFT) algorithm. A number of popular data windows are operational in both the time and frequency domains. Amplitude and angle (phase and frequency) modulation is also provided. Signals can be edited interactively and compared to other signals. New signals can be made out of parts of existing signals. Generated signals can be saved on the disk and accessed by other programs in the Discrete Signals and Systems package. Tabular data from applications such as Excel or MacWrite can also be pasted. Pascal syntax for "normal" data file structure is provided.

The programs in the Discrete Signals and Systems package are best suited for signals and systems, communication theory, digital signal processing, and digital filters courses at all levels of the engineering curriculum. Discrete Signals and Systems I and II are available as a package for $40.00.

### Price

| | |
|---|---|
| D.S.S. II | $35.00 |
| D.S.S. I & II | $40.00 |

Engineering

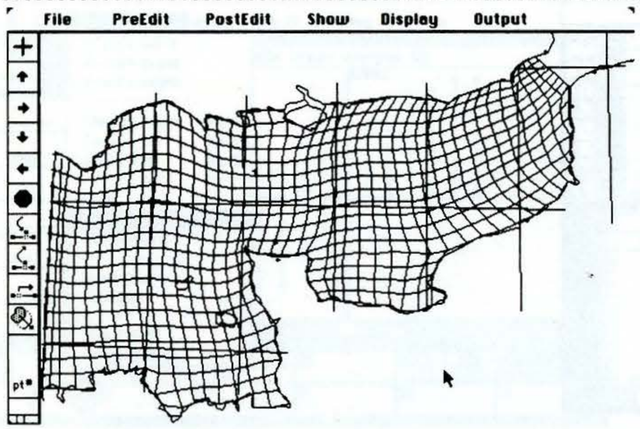
# FEMG: A Finite Element Mesh Generator

Application
Version 1.15
Finite Element Methods

Jean Drolet
Civil Engineering
University of Notre Dame

**System Requirements**
Macintosh computer, minimum 512K.

**Description**
An interactive finite element mesh generator and editor.




FEMG is an application for generating two-dimensional finite element meshes. The elliptic grid generation used herein requires only that the boundary nodes be specified, which is done with the mouse. FEMG supports triangular and quadrilateral elements of degree one and two. FEMG is also an editing tool that allows for moving nodes and for local element refinement. It can generate the incidence list and, upon specification of the coordinate system, the nodal locations.

Engineers and the applied scientists who deal with medium (300 elements) and large (3,000 elements) finite element meshes will find this tool most useful. It can also help teach the art of making finite element meshes.

FEMG was used to generate a large finite element grid for the English Channel and the southern part of the North Sea. Only a few hours were needed to generate the grid even though it counts 990 nodes and 1,762 elements. Most of the time was spent digitizing a map of the area to serve as a guide for the grid generation. The mesh was later used for the simulation of the tide in that area.

**Price**
Single User: $20.00
Site License: $300.00
Documentation: $7.00
(Doc. for Site License Only)



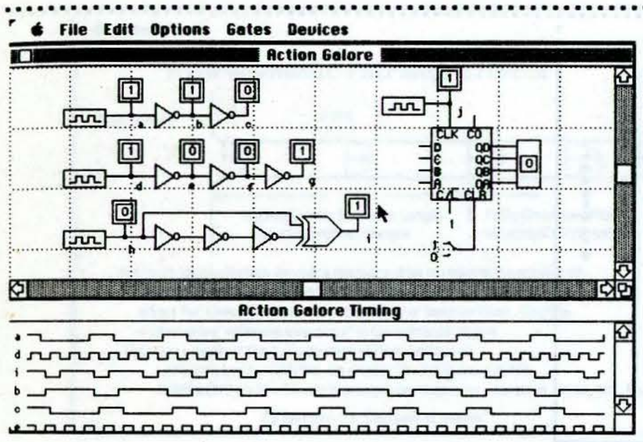
# LogiMac

Application
Version 1.3
Digital Electronics

Chris Dewhurst
Capilano Computing Systems, Ltd.

**System Requirements**
Macintosh computer, minimum 128K.

**Description**
A digital logic design aid for the Macintosh.




LogiMac was created for students, teachers, and designers who need to create, test, and document logic circuits. Drawing circuit diagrams is made easy by a menu of standard symbols for logic devices and an easy-to-use drawing interface. The simulation capability allows the user to detect design errors before they are wired into a real circuit. All functions are controlled by the mouse; the keyboard is used only to place a device or signal name on the diagram. Logic and timing diagrams can be moved into MacPaint for use in creating other documentation.

Version 1.3, replacing version 1.03, adds the ability to open multiple circuit windows, draggable devices, directly enterable delays, and much faster simulations.

**Price**
Single User: $28.00
Site License: $5,000.00
Documentation: $8.50
(Doc. for Site License Only)

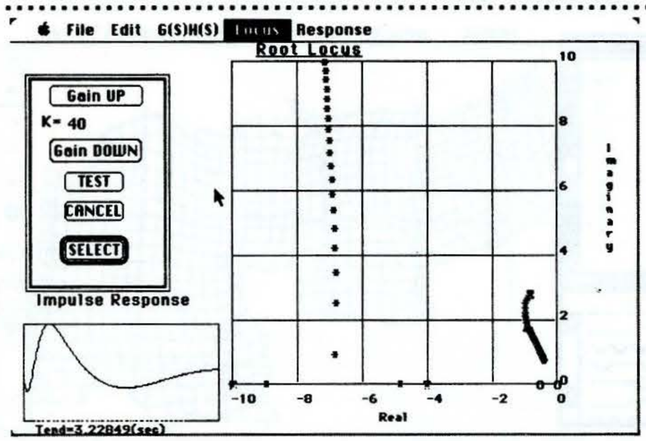
# MacBode and MacLocus

Application
Versions S1.01 and S2.0
Electrical Engineering

L.W. Stimac
Riverdale Software, Inc.

**System Requirements**
Macintosh computer, minimum 128K.

**Description**
An interactive environment to analyze linear control systems using Bode plot and Root Locus techniques.




MacBode and MacLocus are designed to provide students with an interactive environment to analyze linear control systems using Bode plot and Root Locus techniques. MacBode generates Bode plots from an entered transfer function. MacLocus computes the root locus of a linear system and then the inverse Laplace of the closed loop system at a selected system gain.

In both applications the student enters the system transfer function in either factored or polynomial form. MacBode also requires the student to enter data describing the frequency range and plot bounds. A Bode plot is then generated. Both the plot and a listing of the data can be printed.

MacLocus requires the student to enter the gain range and locus plot limits. The Root Locus is then displayed and an operating point gain is interactively selected. The time response of the system at the selected operating point can then be obtained for either a step or an impulse input. All output, locus and time response plots, and detailed data output can be printed. Systems containing active elements in the feedback can also be analyzed. These versions of MacBode and MacLocus are limited to fifth-order systems.

A 49 page user manual is included that describes the application menu items, dialog boxes, and provides a tutorial for each application. These applications are intended for instructional use only and are not warranted for actual design use.

**Price**
Single User: $29.50

Engineering



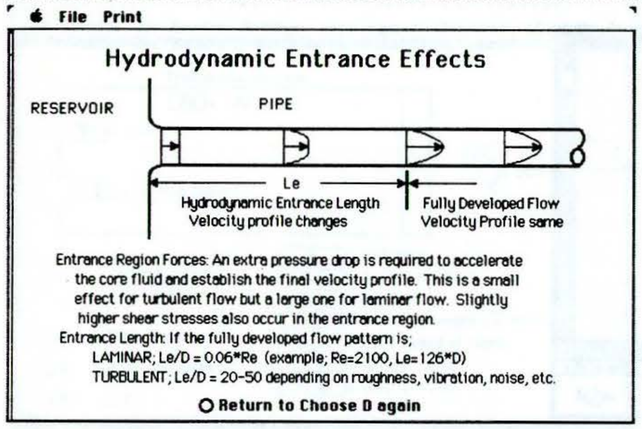
# Pipe Flow

Application
Version 2.6
Engineering

Ronald L. Panton
Mechanical Engineering
University of Texas at Austin

**System Requirements**
Macintosh computer, minimum 512K.

**Description**
This program solves a very practical problem in fluid mechanics—incompressible flow through pipes and ducts. In addition, the program uses animated displays to teach the main characteristics of pipe flow.




Pipe Flow deals with a very practical problem in fluid mechanics—incompressible flow through pipes and ducts. Its main purpose is to supplement an undergraduate lecture course; however, it is self-contained and can be used independently. Specific pipe flow education goals include the relevant nomenclature, analysis fundamentals, physical characteristics, and pipe flow calculations.

Flow problems can be solved where the fluid, pipe geometry, and one flow property (velocity, flow rate, pressure drop, head of energy loss) are specified. With the answer from a given problem, the user can then go to sections that give more physical details about pipe flow.

Different input values allow the user to discover all the major characteristics of pipe flow, such as when the flow is laminar or turbulent. As different sections and major items are uncovered, the program keeps a score and notes the elapsed time, although the time and score are not essential to the program.

The program is self-teaching and easy to run. It has one main menu to which all subsections return. After the first item (New Pipe, Fluid, and Flow) has been completed, all other sections are available and may be chosen in any order.

**Price**
Single User: $17.00

Engineering

# Pipeline Design Kit


Application
Version 1.0
Chemical Engineering

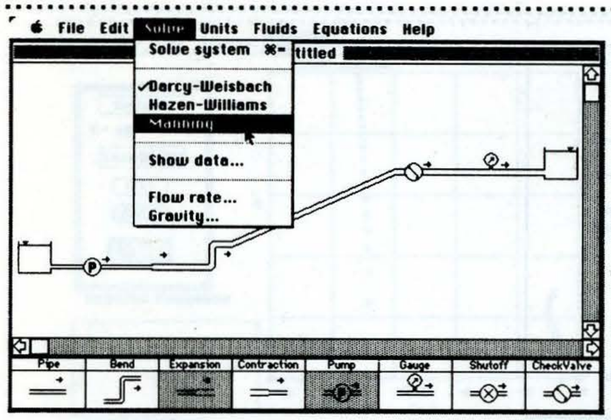
Philip H. DeGroot
Civil Engineering
Drexel University


### System Requirements

Macintosh computer, minimum 512K, with Finder, version 5.5.

### Description

Designed to be both a training aid to engineering students and a working tool for use by practicing engineers. Pipeline Design Kit uses a paradigm of graphic objects that can be easily manipulated with the standard Macintosh mouse techniques.




This program is designed to be both a training aid to engineering students and a working tool for use by practicing engineers. Pipeline Design Kit uses a paradigm of graphic objects that can be easily manipulated with the standard Macintosh mouse techniques.

Engineers and students utilize the Pipeline Design Kit program for the steady-state component design of small water-supply systems, refined petroleum product pipelines with a single-pump station, and single pump chemical pipelines. The reservoirs at each end of the pipeline are always shown on the screen. The mechanics of connecting a pipeline with appurtenances between the two reservoirs are explained in the extensive manual and also in the detailed help menu available in the program. After the pipeline is developed and the data entered, the work may be saved into a file and recalled.

This program is useful for courses in fluid mechanics, hydraulics, pumping systems, and mass transport.

### Price

Single User: $21.50

Engineering



# TLS: Transmission Line Simulator


Application
Version 2.3
Electrical Engineering

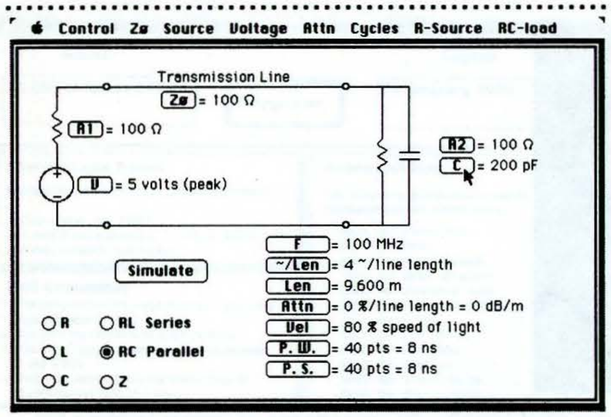
Charles H. Roth, Jr.
Electrical and Computer Engineering
University of Texas


### System Requirements

Macintosh computer, minimum 128K.

### Description

Simulates both transient and steady-state behavior of transmission lines, and provides dynamic displays of voltage and current waves.




Transmission Line Simulator (TLS) teaches students about electrical waves and transmission lines by using an interactive simulation approach. Traveling waves, standing waves, and wave reflection can be easily demonstrated.

TLS provides dynamic displays of voltage and/or current wave forms with or without wave envelopes. It allows R, L, C, R-L, R-C, and Z loads with a wide choice of values. TLS has DC, sinusoid, and pulse sources, and allows selection of line parameters (characteristic impedance, attenuation, and velocity of propagation). A "mouse-meter" allows easy measurement of voltage, current, distance, and standing-wave ratio.

TLS can be used to develop intuition about wave behavior, to solve transmission-line problems, to perform simulated lab experiments, and to give lecture demonstrations.

### Price

Single User: $20.00
Site License: $490.00
Documentation: $4.50
(Doc. for Site License Only)

Engineering

# VLSI Magician

Application
Version 1.1a
Electrical and Computer Engineering

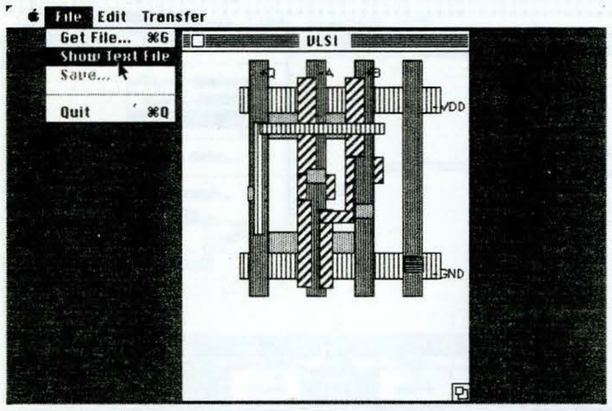
Kevin Scoles
Electrical and Computer Engineering
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

### Description

A program that allows engineering students to do trial circuit layouts on the Macintosh. Completed designs can be down-loaded to a VAX® 11/780 host computer for further manipulation and implementation.




With the increasing use of application-specific integrated circuits, the importance of proper training for computer scientists and electrical engineers in this area is becoming very important. The traditional hardware costs for this training are very high. At Drexel, the VLSI circuit layout training is based on the MAGIC software package released by the University of California at Berkeley for the VAX 11/780 computer. In an effort to get the highest individual student involvement in the circuit design process, VLSI Magician was developed to allow students to do trial circuit layouts on the Macintosh and then down load them into a VAX 11/780 using terminal emulator software like MacTerminal. The VAX software does rules checking and circuit extraction.

The procedure for creating a circuit is based on the MacDraw software package available through Claris™. VLSI Magician reformats MacDraw PICT format files into the MAGIC format. The disadvantages associated with the small monochrome display make it hard to check on overlapping circuit layers. However, this disadvantage is outweighed by the reduction of overcrowding of color workstations and the speed advantage over color pencils and graph paper. Student imagination is increased in the quick evaluation of alternatives in circuit layout.

The VLSI Magician supports designs in the MOSIS (MOS Implementation Service, USC Information Sciences Institute), NMOS, and CMOS design styles. Access to the MOSIS silicon foundry service for educational or research use can be requested through the National Science Foundation.

**Price**
Single User: $18.50



# Arabic Dates

Tool
Version 1.0
General

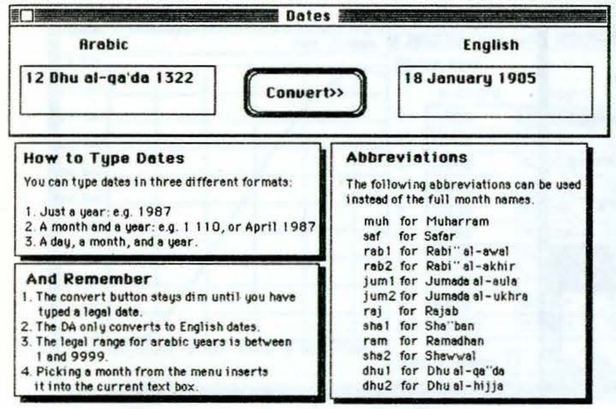
Developer: Peter Su and the Courseware Development Group
Concept: Humanities Computing Dartmouth College

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 5.3.

### Description

A desk accessory to convert dates between Arabic and English formats.




Arabic Dates is a desk accessory to convert dates in both directions between Arabic and English. For example, the Arabic date 12 Dhu al-q`a'da 1322 is equivalent to the English date 18 January 1905. Arabic month names can be abbreviated or inserted from a pull-down menu.

**Price**
Single User: $10.00

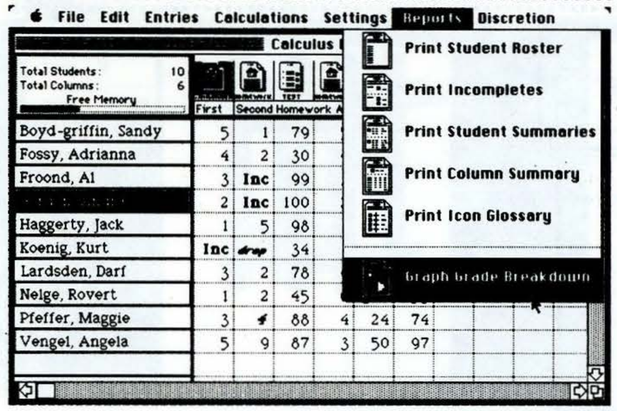
# Brainchild Grade

Application
Version 1.1
Student Grading

Evan E. Corbett and Sean V. Rome
Brainchild Corporation

**System Requirements**
Macintosh 512K Enhanced computer, minimum, with Finder, version 5.2.

**Description**
An electronic grade book designed for educators at all grade levels.




Brainchild Grade™ is an electronic grade book for the Macintosh. Designed for educators at all grade levels, Grade replaces the conventional paper-based grade book. Grade is a full-featured integration of spreadsheet, data base, and report-generation software.

Grade's strengths are its speed, power, flexibility, and ease of use. Its graphic user interface is modeled after the familiar paper grade book. Grade is capable of storing data on as many as 300 students with up to 100 scores each. In addition to being able to calculate grades instantly, Grade also allows the user to gather statistical information on score distribution, create graphs of class performance, and estimate a curve. It allows the user to experiment with variable weighting systems and cutoff points. Grade can also generate reports on individual student performance and incomplete or missing scores.

**Price**
Single User: $25.00
Site License: $2,500.00
Documentation: $6.50
(Doc. for Site License Only)



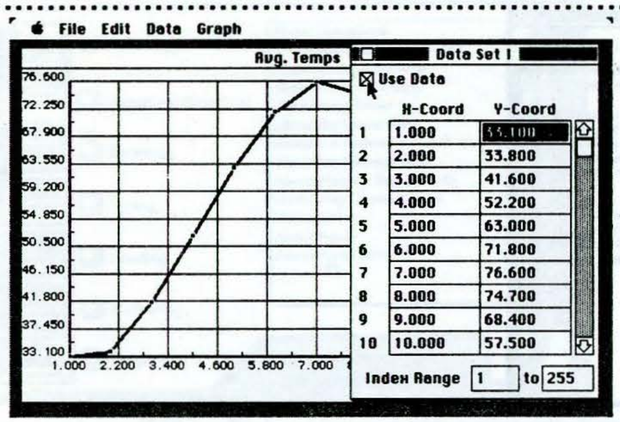
# Drexel Plot

Application
Version 1.3
General Academic Use

Software Development Group
Drexel University

**System Requirements**
Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

**Description**
An application that plots line and/or scatter graphs.




Drexel Plot is a graphing application that, among other things, allows the user to enter up to four paired sets of data, and place as many as four lines on the same graph. The user can select the range, increments, and axis origin for the graph, and the number of decimal places for the numbers on the grid. Drexel Plot also includes the ability to load any two columns of paired data from a SYLK file created in Microsoft Multiplan or Excel, to enlarge a portion of any graph, and to take graphs into MacDraw for further enhancements.

**Price**
Single User: $11.00

# Glossary Maker

Tool
Version 1.0
General Purpose

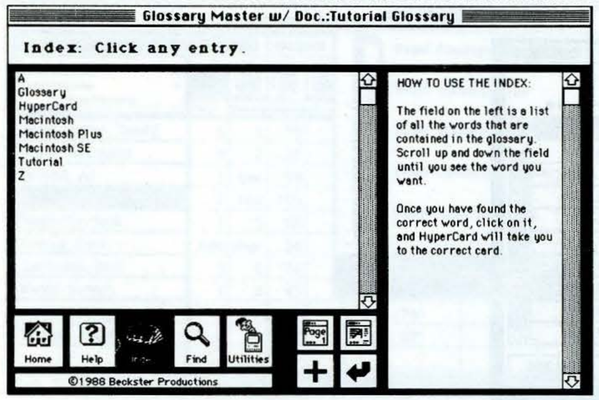
Developer: Eric Baumgartner & Edward K. Shultz
Concept: J. Robert Beck & Edward K. Shultz
Information Science Program
Dartmouth Medical School

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

A HyperCard stack that allows the user to create a glossary to be used with any other stack.




Glossary Maker is a HyperCard stack creation tool that can build a context-sensitive glossary of terms for use in other HyperCard stacks. Glossary Maker installs a script at the stack level, which enables the user to invoke a glossary by the use of the command key and a mouse click. Utilities are provided to merge and transfer glossary entries, and tools are provided for automatic updating of a glossary by Stackware™ authors.

**Price**
Single User: $14.00



# HyperTrainer!

Stack
Version 1.0
General Purpose

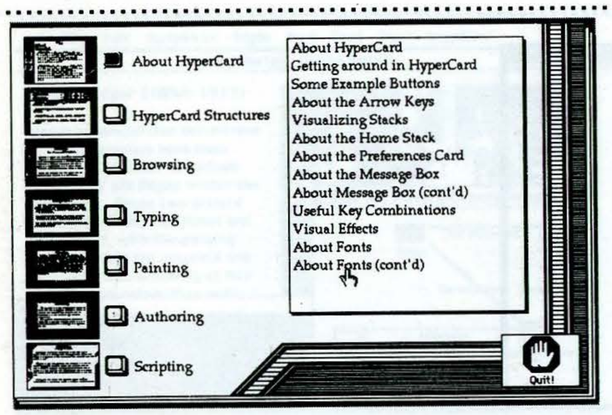
Michael Giamo and John Green
Office of Computing Services
Drexel University

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard and either a hard disk or external disk drive are required.

**Description**

An introduction to the concepts of HyperCard.




The purpose of HyperTrainer! is to provide an introduction to the concepts of HyperCard. HyperTrainer! provides a summary of the important points of HyperCard and provides the user with many samples and explanations. Topics covered include Browsing, Typing, Painting, Authoring, Scripting, and HyperCard structures.

The program assumes the user has a basic knowledge of the Macintosh.

**Price**
Single User: $17.00

# LaserTerminal

Application
Developed 8/86
Laser Printing

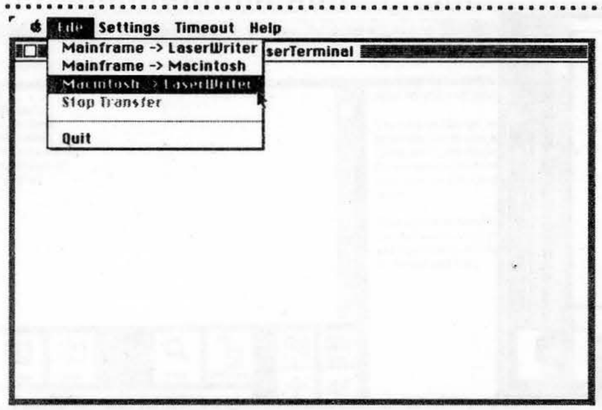
The Reed Development Laboratory
Reed College

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1 or later.

**Description**

A terminal emulator for use with the Macintosh and a VAX or older host mainframe computer, which allows the user to direct files to a LaserWriter printer.




Intended for a general college audience, LaserTerminal is designed to facilitate the use of the LaserWriter with a host or mainframe computer via the Macintosh. The user may take advantage of PostScript® converter and formatting programs available from a mainframe or host computer. Files may be printed from the mainframe to the LaserWriter, from the Macintosh to the LaserWriter, and/or processed with PostScript files from the mainframe to the Macintosh.

**Price**
Single User: $20.00

General Purpose



# Learning Tool

Tool
Version 1.0
Study Tool

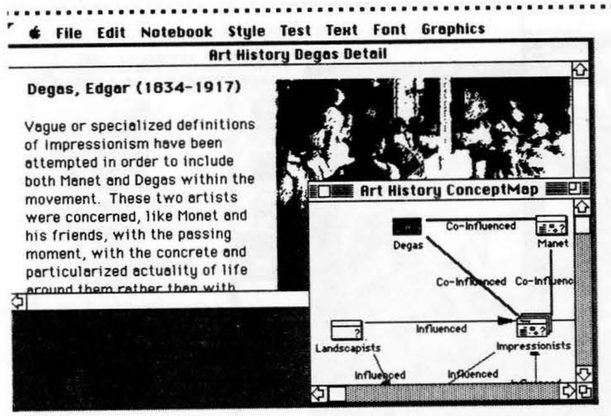
Robert B. Kozma and John Van Roekel
Arborworks, Inc.

**System Requirements**

Macintosh computer, minimum 512K, with one 800K disk drive.

**Description**

An electronic notebook that helps the user organize course notes, write term papers, and study for exams.




Learning Tool is a general-purpose electronic notebook that students can use to enter their course notes (both text and graphics), organize them and reorganize them, search them, write term papers, and study for exams. Faculty members can use Learning Tool to share their lecture notes with students in an "electronic coursepack." They can also use it to organize their research and write journal articles.

Learning Tool allows you to enter key ideas and represent their relationships. In "hypertext" fashion, the user can build relationships between concepts at any level of abstraction, or zoom in for details. Ideas can be organized sequentially or spatially. Needed information can be pulled up to the screen instantly. Information from several ideas, even from several courses, can be seen on the screen simultaneously. This allows the user to compare, contrast, or combine ideas.

Learning Tool contains two sample "notebooks": Chemistry and Art History. It also includes a help notebook that provides on-line assistance to the user.

**Price**
Single User: $30.00

General Purpose

# Personal ResuméWriter

Application
Version 1.0
General

Developer: John T. White
Concept: George A. Rivera
Bootware Software Company, Inc.

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 3.2. Finder version 5.3 is supplied on the disk.

### Description

A professional desktop publishing software application for the creation of resumes with a minimum of time, effort, and cost. This version will work for only one person.


Personal ResuméWriter™ brings to your command the advantages of desktop publishing document creation to produce a near "typeset quality resume," which can be customized to your personal specifications. You simply type your resume information into the custom-designed windows and the rest is done by Personal ResuméWriter. Tip screens are available for each window to assist you in writing your resume. You also have the ability to choose which information should be included or excluded from each resume, without having to delete any of the information from your data base. You can customize your resume by choosing different formats, titles (including creating your own), and font styles and sizes. Once the resume is completed, you can save a copy of your information for future use. Personal ResuméWriter allows you easy access to all information for additions, changes, or deletions to your resume data base. This allows you to create quick updates to your resume at a moment's notice. Therefore, using the same information, several different types of resumes can be generated, each with a unique appearance and style.

When you're done, you can use Personal ResuméWriter to print your personal resume on Apple's ImageWriter and LaserWriter Plus printers, as well as on other printers and typesetting equipment that use the PostScript language.

**Price**
Single User: $30.00



# Reed Applications I

Application
Developed 3/86
General Science and Math

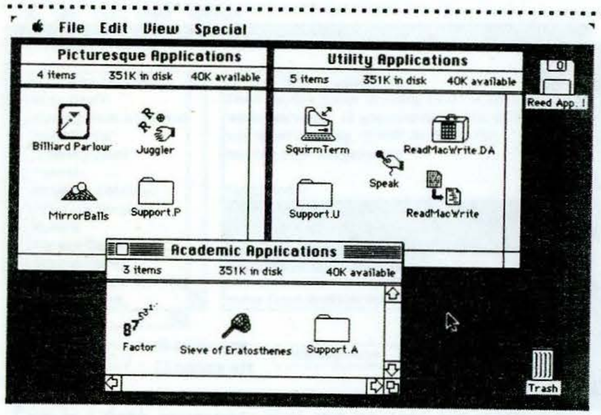
The Reed Development Laboratory
Reed College

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or later.

### Description

Reed Applications I includes several utility, academic, and picturesque applications created with the Rascal™ Development System.




Reed Applications I is intended for a general college audience. The disk provides a wide variety of applications and tools, including a terminal emulator, a MacWrite rescue utility, a speech synthesizer, mathematical programs for factoring and testing primality, the acclaimed Billiard Parlour, the Juggler, and a ray-tracing program that draws reflective spheres over a checkerboard surface.

The instructional format is both demonstration and example. Many of these programs are being used at Reed College, at other universities, and in private industry. A review of Billiard Parlour appeared in MacUser, April 1986.

**Price**
Single User: $14.00

# Reed Applications II

Application
Developed 3/86, updated 1/87
Math, Science, and Music

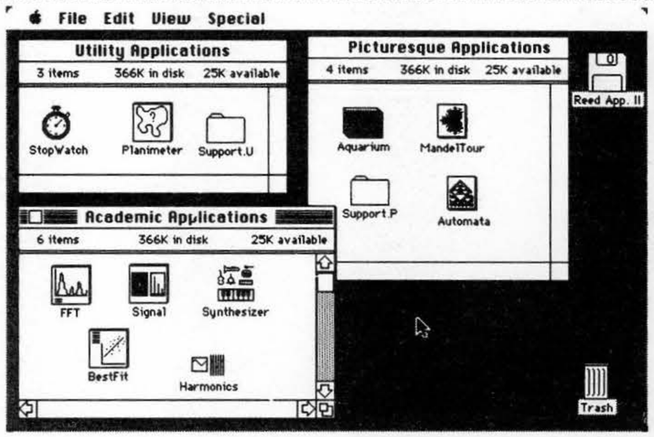
The Reed Development Laboratory
Reed College

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or later.

### Description

Utility, academic, and picturesque applications created with the Rascal Development System.




Reed Applications II is intended for college-level users in the general sciences, social sciences, and music. It has a wide variety of applications and tools, including a millisecond timer, a planimeter for measuring the area of irregular regions such as cells, a Fast Fourier Transform program, a signal analysis program, a musical instrument synthesizer (includes 17 instruments), a four-tone chord synthesizer, animation examples, a cellular automata model, and a Mandelbrot set.

The instructional format is problem solving, simulation, and demonstration.

### Price

Single User: $14.00



# Tips Desk Accessory

Application
Version 1.0
General

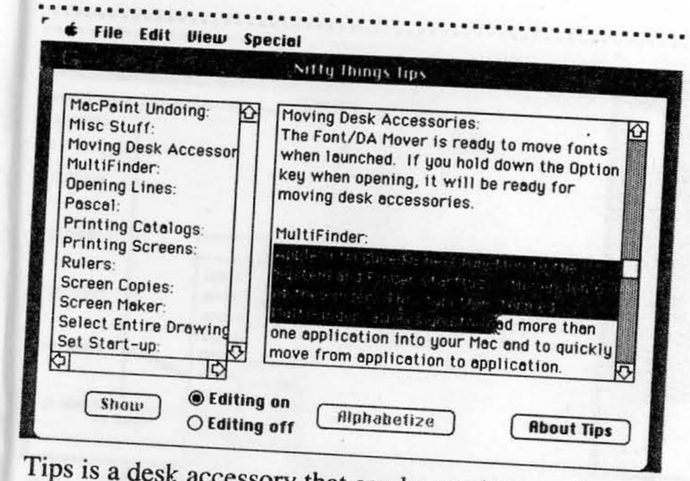
Thomas Hewett
Psychology
Drexel University

### System Requirements

Macintosh computer, minimum 512K.

### Description

A desk accessory used for storing and displaying tips or other useful information while running an application. Users can edit existing information and add new information.




Tips is a desk accessory that can be used for storing and displaying tips or other useful information while running an application. You can edit existing information or add your own tips information. Tips contains a file of Apple Jargon, including the definition and explanation of each term. This file can be edited or added to. Tips also allows you to create your own files of information. It can be used as a simple outliner, as a Rolodex, as a list organizer, or as a general study aid. The largest customized desk accessory that can be created is 32K.

Included on the disk are:

- Apple Jargon Tips
- Fun Stuff Tips
- FileMaker Tips
- Small Tips
- Hardware Tips
- Space and Storage Tips
- Spreadsheet Tips
- Term Paper Tips
- Printing Tips
- Tips (an empty Tips file)

### Price

Single User: $21.50

# Problem Solving Interpreter

Tool
Developed 3/86, updated 6/86
General Science and Math

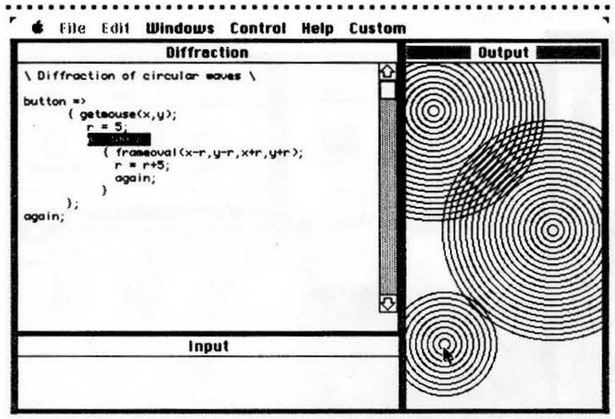
The Reed Development Laboratory
Reed College

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or later.

### Description

A simple interpretive language designed specifically for problem solving, calculations, and graphical modeling.




Problem Solving Interpreter (PSI) is ideal for college-level students, faculty, and researchers in the sciences, mathematics, and other fields requiring general statistical applications. PSI is a simple, structured programming language designed for direct solution of computation problems that arise in research and coursework. The instructional format is tutorial, with an emphasis on solving particular problems. The number of lessons is variable. Examples of usage include structural engineering, number theory, Fast Fourier Transform, statistics, and graphical modeling. PSI has been used at Reed College and other universities, as well as in private industry. Many sample applications are included on the disk.

### Price

Single User: $20.50
Site License: $700.00
Documentation: $10.50
(Doc. for Site License Only)



# Scientist's Spreadsheet

Application
Version 2.17
Science and Engineering

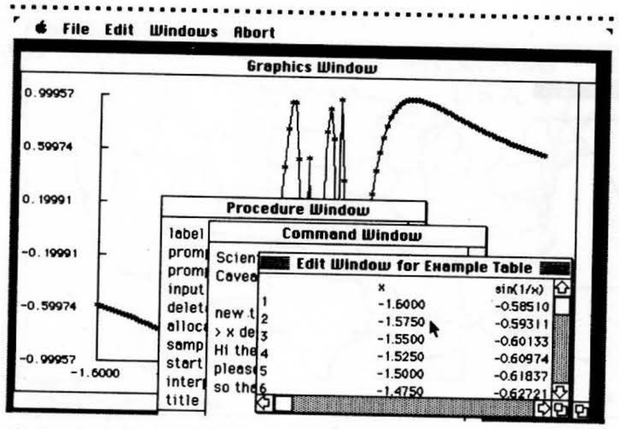
William Menke
Oceanography
Oregon State University

### System Requirements

Macintosh computer, minimum 512K.

### Description

An interactive data-analysis application designed especially for scientists and engineers. This program was previously available under the name Scientist's Helper.




"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

Scientist's Spreadsheet is an application for performing complex mathematical and statistical operations on a table of numbers. It embodies many of the features found in business spreadsheets, such as the ability to edit table entries interactively, perform arithmetic on them, and plot them. In addition, Scientist's Spreadsheet provides many features especially oriented toward the kind of data analysis performed by scientists and engineers: interpolation and extrapolation, multivariate and polynomial regression, splines, spectral analysis, filtering, convolution, Laplace transforms, etc.

The application includes a facility for defining procedures (groups of operations that can be executed as a unit, thereby reducing the amount of work needed to process large data sets).

### Price

Single User: $10.00
Site License: $300.00
Documentation: $4.50
(Doc. for Site License Only)

# SIMPLE

Application
Version 87.10.07 jmd
Mathematics

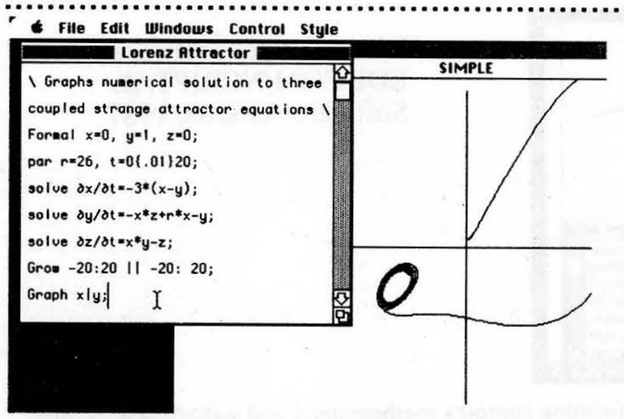
Richard Crandall and Joshua Doenias
Physics
Reed College

### System Requirements

Macintosh computer, minimum Macintosh Plus, with Finder, version 5.3 or 6.0.

### Description

An elegant interpreted programming language that allows you to solve summations (finite or infinite), definite integrals (proper and improper), and differential, implicit, and simultaneous equations without difficult programming.




SIMPLE is an application designed to yield the results of difficult calculations without difficult programming. SIMPLE uses an elegant interpreted programming language that allows you to solve summations (finite or infinite), definite integrals (proper and improper), and differential, implicit, and simultaneous equations. SIMPLE is outstanding because of its power and because its programs require minimal syntax and organization. For example,

$$\text{Integral I} = \int_{x=-\infty}^{\infty} \exp(-\pi * x^2)$$

```
List I;
```

is a complete program that solves the Gaussian integral. Also, the program

```
solve x^2 + y^2 + z^2 = 1;
solve 18*x = 12*y + 5;
solve 12*y = 8*z + 4;
```

lists the points where the straight line defined by $18x - 9 = 12y - 4 = 9z$ intersects the sphere defined by $x(x) + y(y) + z(z) = 1$. These programs are much easier to write than their equivalents in standard programming languages. Finally, the order that statements are written in a SIMPLE program is unimportant. Rather, SIMPLE executes some commands before others. This allows you to organize the statements in your program in whatever way is natural for you.

### Price

Single User: $20.00
Site License: $700.00
Documentation: $6.00
(Doc. for Site License Only)



# HyperAtlas U.S.A.

Application
Version 1.0
Geography

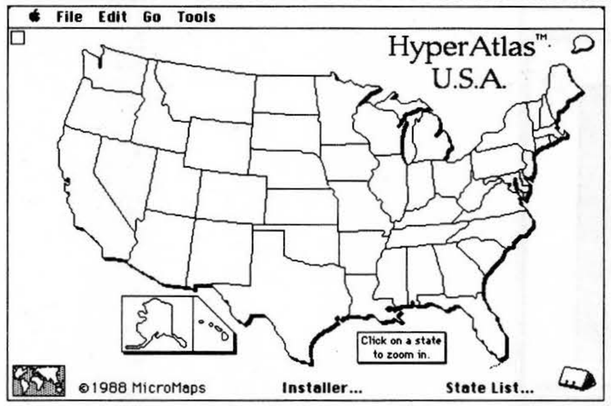
Robert Dahl
MicroMaps

### System Requirements

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

### Description

HyperAtlas U.S.A. is a series of HyperCard stacks containing maps of the United States and all 50 states linked to information cards for every state and over 250 major cities.




HyperAtlas U.S.A. is a series of HyperCard stacks containing maps of the U.S.A. and all 50 states linked to information cards for every state and over 250 major cities. It includes maps of the U.S.A. by state and all 50 states showing county borders, and an information card for each state and city in separate but linked INFO stacks.

Users simply point-and-click on the U.S.A. map to zoom in on a state map, and then click again to link to information about that state. The information is stored in associated INFO stacks. HyperAtlas U.S.A. comes with a blank INFO stack with all 50 states, and one with over 250 cities. You simply duplicate an INFO stack, then add any text, numeric, or graphic information you want. You can even import the data using handy Import Data stacks. Then access your information by clicking on the maps.

You can even add your fully active and linked features to the state maps. Add more cities, or the names of any other feature you are interested in: parks, toxic waste sites, economic facilities, educational institutions, archaeological sites.

### Price

Single User: $24.00
Site License: $600.00
Documentation: $5.00
(Doc. for Site License Only)

# HyperAtlas World

Application
Version 1.0
Geography

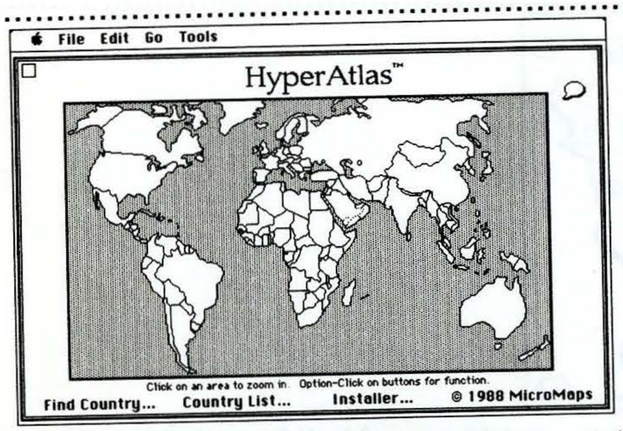
Robert Dahl
MicroMaps

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

HyperAtlas World is a series of HyperCard stacks containing maps of the world linked to information cards for every country in the world. You simply add any text, numeric, or graphic information then access your information by clicking on the maps.




HyperAtlas World is a series of HyperCard stacks containing maps of the world linked to information cards for every country in the world. It includes maps of the world and world regions with country borders and names, and an information card for each country in a separate but linked INFO stack.

Users simply point-and-click on the maps to zoom in for more and more detail, and then click on a country name to link to information about that country. The information is stored in associated INFO stacks. HyperAtlas World comes with a blank INFO stack. You simply duplicate this stack, then add any text, numeric, or graphic information you want. You can even import the data using handy Import Data stacks. Then access your information by clicking on the maps.

HyperAtlas World lets you build a database of geographic information and keep it at your fingertips.

**Price**
Single User: $24.00
Site License: $600.00
Documentation: $5.00
(Doc. for Site License Only)



# QuickMap U.S.A.

Application
Version 1.0
Geography

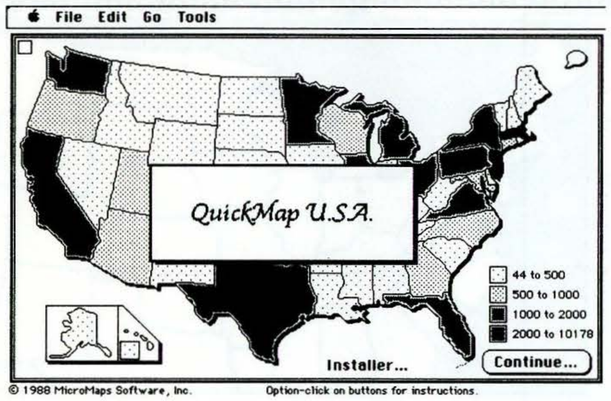
Robert Dahl
MicroMaps Software

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

QuickMap U.S.A. performs "What if..." analysis on geographic data for the 50 states. It lets you analyze, classify, and map your information quickly and easily. QuickMap helps you understand and communicate geographic information more effectively.




QuickMap U.S.A. performs "What if..." analysis on geographic data for the 50 states. It lets you analyze, classify, and map your information quickly and easily.

With QuickMap U.S.A. you can:

- Import one or two data sets containing a data value for each of the 50 states
- Calculate a wide range of relationships between the data sets including sums, differences, ratios, logarithms, constants (or enter your own formula)
- Classify the data using a variety of techniques (or enter your own classifications)
- Quickly create a map showing the geographic data distribution

Anyone who creates spreadsheets or graphics based on geographic data can use this program to create maps that effectively illustrate the information contained in the geographic data. This program helps you understand and communicate geographic information more effectively.

QuickMap U.S.A. comes with preset shading patterns designed to communicate mapped information most efficiently. You can, however, choose your own patterns or even create custom patterns using standard HyperCard techniques. The maps can be saved as MacPaint files, cut to the clipboard, or saved right in QuickMap U.S.A. for later reference.

**Price**
Single User: $22.50
Site License: $750.00
Documentation: $4.00
(Doc. for Site License Only)

# Student Atlas – Counties

Template
Version 1.0
Geography and History

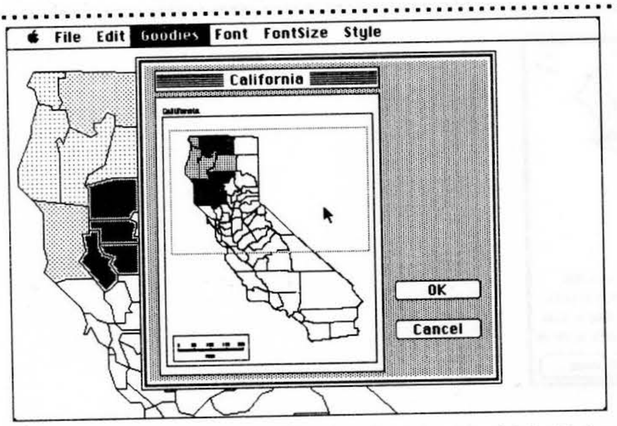
Robert F. Dahl
MicroMaps

**System Requirements**

Macintosh computer, minimum 128K. A MacPaint-compatible program is also required.

**Description**

A three-disk set of 8" x 10" state maps, showing all county borders, in MacPaint format.




Student Atlas – Counties is a three-disk set of MacPaint-format maps. Forty-nine documents (Maryland and Delaware are on one page) show every state in the U.S. with county borders marked. Each map includes a scale and state name. You can fill each county separately using modified fill patterns that are especially suited to mapping.

Student Atlas maps are useful in a variety of academic settings. Faculty and students in history, geography, political science, journalism, earth sciences, economics, and public health all use maps. Administrators use Student Atlas for tasks like admissions and student-body mapping.

The documentation includes sections on using the tools of MacPaint to produce many popular map types. Student Atlas gives you the power of many expensive mapping packages, all at a low price and with the convenience and ease of use of the Macintosh and MacPaint.

**Price**
Single User: $20.50
Site License: $750.00
Documentation: $5.00
(Doc. for Site License Only)





# Student Atlas – U.S.A.

Template
Version 1.0
Geography and History

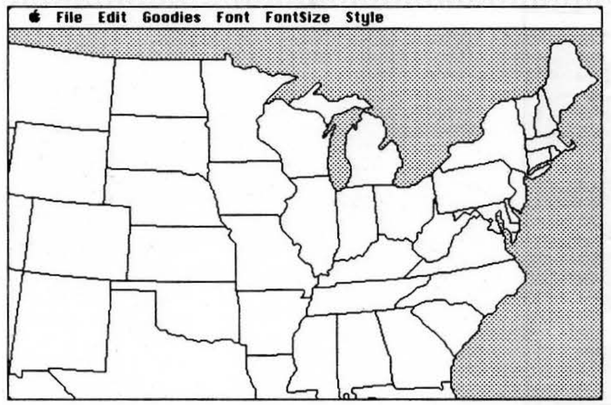
Robert F. Dahl
MicroMaps

**System Requirements**

Macintosh computer, minimum 128K. A MacPaint-compatible program is also required.

**Description**

Twenty maps of the U.S.A. showing state borders, major city locations, and state abbreviations, in MacPaint format.




Student Atlas – U.S.A. includes 20 maps of the U.S.A. in sizes ranging from 2" x 3" to 8" x 10". The state borders are completely closed and done in enough detail to show many fine details of coasts and rivers. Each document also includes modified patterns that are especially suitable for mapping.

Student Atlas maps are useful in a variety of academic settings. Faculty and students in history, geography, political science, journalism, earth sciences, economics, and public health all use maps. Administrators use Student Atlas for tasks like admissions and student body mapping.

The documentation includes sections on producing many popular map types using the tools available in MacPaint. Student Atlas gives you the power of many expensive mapping software packages, all at a very low price and with the convenience and ease of use of the Macintosh and MacPaint.

**Price**
Single User: $16.00
Site License: $600.00
Documentation: $5.00
(Doc. for Site License Only)

# Student Atlas – World

Template
Version 1.0
Geography and History

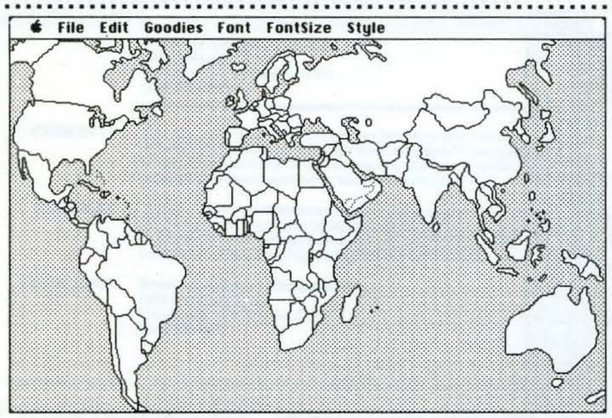
Robert F. Dahl
MicroMaps

**System Requirements**

Macintosh computer, minimum 128K. A MacPaint-compatible program is also required.

**Description**

Sixteen maps of the world and world regions in MacPaint format.




Student Atlas – World includes two world maps and maps of: Africa, Antarctica, Australia/New Zealand, the Caribbean, Central America, the eastern Mediterranean, Europe, the Far East, the India Sub-Continent, North America, the Persian Gulf, South America, the Soviet Union, and the Western Hemisphere. The maps show most major country borders, and many islands, bays, and peninsulas. Detailed 8" x 10" maps of continents and regions also show country borders and many physical details. Each document lets you use modified fill patterns that are more suitable for mapping than the standard MacPaint patterns.

Student Atlas maps are useful in a variety of academic settings. Faculty and students in history, geography, political science, journalism, earth sciences, economics, and public health all use maps. Administrators use Student Atlas for tasks like admissions and student body mapping.

The documentation includes sections on producing many popular map types using the tools available in MacPaint. Student Atlas gives you the power of many very expensive mapping software packages, all at a very low price and with the convenience and ease of use of the Macintosh and MacPaint.

**Price**
Single User: $16.00
Site License: $600.00
Documentation: $5.00
(Doc. for Site License Only)



# GeoStructures

Application
Version 1.2
Geology

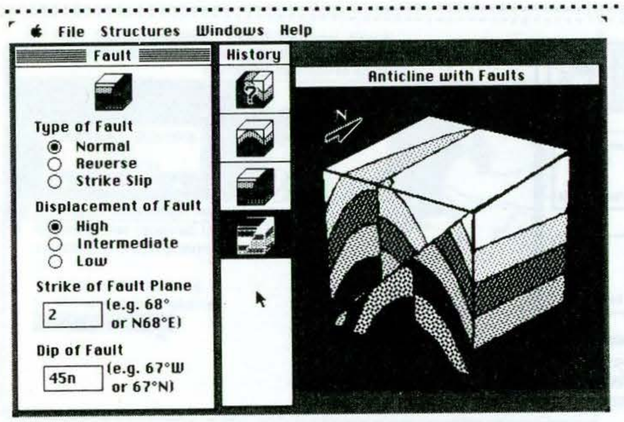
Developers: Dwight Aspinwall and Wu So Fai
Courseware Development Group
Concept: Dick Birnie
Earth Sciences
Dartmouth College

**System Requirements**

Macintosh computer, minimum 512K.

**Description**

Starting with a five-layer flat bed, students can fold, tilt, and fault the bed a number of times. The result is viewed on the faces of a cube taken from the earth. Complex combinations of structures can be saved.




GeoStructures is designed to help students of geology understand and interpret the full three-dimensional expression of geologic structures.

Starting with a five-layer flat bed, complex structural patterns can be created by concatenating up to seven of the basic tilt, fold, and fault structures. Each operation involves parameters, such as strike and dip, which are specified by the user. The block diagram shows the resulting appearance on each face of a cube taken from the earth. Structure combinations can be saved and opened again.

Sample structures are included on the disk.

Version 1.2 can print on the LaserWriter.

**Price**
Single User: $8.00

# SpeakEasy

Stack
Version 1.0
Psychology, Speech Prosthesis

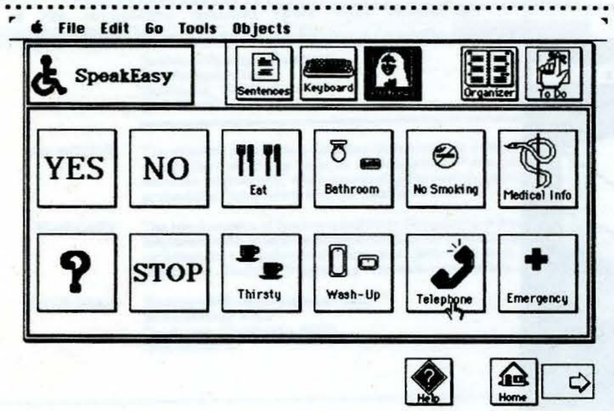
Douglas Chute, Neuropsychology
Melanie Hoag, Software Development Group
Drexel University

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard and either a hard disk or external disk drive are required.

**Description**

SpeakEasy and its related stacks were designed as a speech prosthesis for some patients with expressive aphasias. Intended for use in the rehabilitation facility or at home, the package includes a manual and developer's stacks that aid the health care professional in customization for an individual patient's needs.




SpeakEasy, SpeakEasier, and SpeakEasiest are three stacks that utilize the MacinTalk speech synthesizer to speak entered text or convenient "talking pictures." For patients with varying degrees of motor impairment, different settings and easier versions of the stacks provide for inputs ranging from the keyboard or the mouse to simple click switch operation only. On-line help and functions like an Organizer and To Do lists support activities of daily living for patients who may have a degree of cognitive limitation.

The manual covers the operation of the stacks and a hands-on training experience in stack customization for the health care professional interested in modifying the stack for the unique requirements of individual patients.

**Price**
Single User: $24.00

Health Science



# Treaty of Versailles

Application
Version 1.0
History

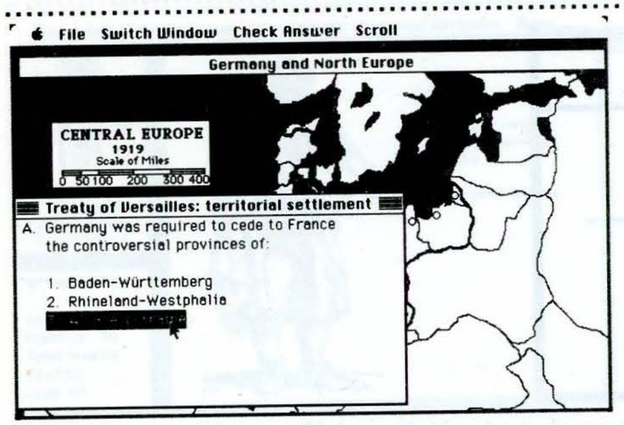
Eric D. Brose
History and Politics
Drexel University

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1.

**Description**

A series of exercises to help students understand the main problems confronting the diplomats who drafted the treaties ending World War I.




Treaty of Versailles consists of a series of exercises that help students understand the main problems confronting the diplomats who drafted treaties ending World War I. Exercise I has two parts: an exercise in which students redraw the map of Europe using national, ethnic, historical, and other relevant information they have studied; and a classroom simulation of a delegation meeting at the Versailles Conference. The purpose of the meeting is to form a consensus as to how the political boundaries in Europe should be redrawn. Individual students must argue in favor of their own strategies, as shown in the maps they produce.

Exercise II consists of a series of questions about the territorial, disarmament, and reparation terms of four treaties: Versailles, St. Germain, Trianon, and Neuilly. Questions about territorial shifts are followed by questions that require locating the areas in question on a map. Students receive feedback on both correct and incorrect answers.

**Price**
Single User: $15.50

History

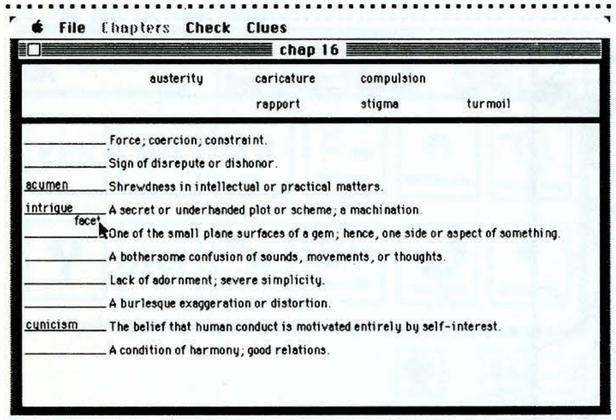
# Vocabulary Drill

Application
Version 1.0
History

Stanley Wasson
History and Politics
Drexel University

**System Requirements**
Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

**Description**
A vocabulary exercise to accompany the study of chapters 16 through 25 of McKay's A History of Western Society.




The program is based on 300 general vocabulary words used in McKay's A History of Western Society (Houghton Mifflin Company). Students match words to definitions provided. The words are used in a historical context to provide clues for students.

**Price**
Single User: $20.00

History



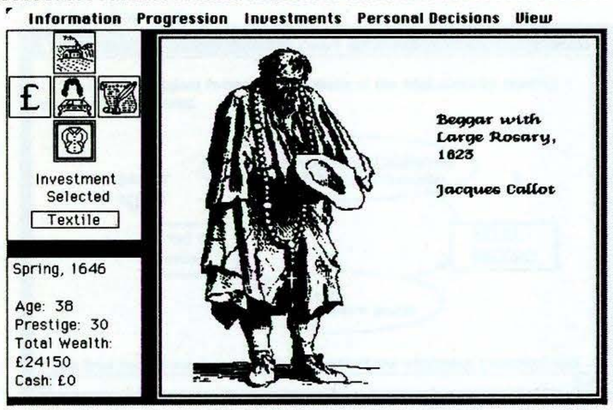
# The Would-Be Gentleman

Application
Version 4.1
History

Carolyn Lougee
and the Faculty Author Development Program
Stanford University

**System Requirements**
Macintosh computer, minimum 128K, with Finder, version 4.1.

**Description**
A simulation of social mobility in the France of King Louis XIV.




"Best Humanities Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

The Would-Be Gentleman was developed as an instructional tool for a seminar entitled "The France of Louis XIV." The program models the economic and social life of a French bourgeois during the life and reign of Louis XIV of France (1638-1715). The scenario is briefly introduced to the player, who then embarks on an ambitious plan of economic and social decision making. The player experiences the world of 17th-century France by managing income and properties, planning marriages and estates, and seeking influence through official duties and alliances with powerful figures.

As in real life, economic success and social prestige do not follow a fixed pattern. The program features many choices clearly laden with wealth and prestige, but players who over reach themselves can suffer shame, loss of income, and even, God forbid, bankruptcy. The real challenge of The Would-Be Gentleman is to keep one's social and economic status in balance.

**Price**
Single User: $7.00

History

# Harris vs. Klondike Klimber, Inc.

Application
Version 1.0
Law: Case Development in Personal Injury

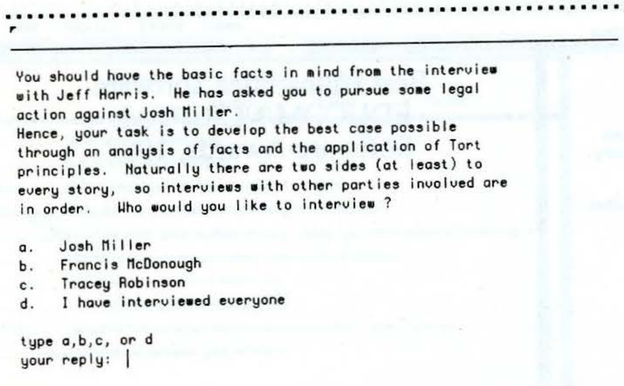
Hugh Gibbons, Editor
Litex '86, Authors
Franklin Pierce Law Center

**System Requirements**

Macintosh computer, minimum 512K, and one 800K disk drive.

**Description**

A series of nine tutorials that lead the student through the preparation of a products liability lawsuit, from the initial client interview to the point of trial.




Harris v. Klondike Klimber is a series of nine exercises beginning with interviewing the prospective client; then proceeding to analyzing principles of negligence, products liability, and accessing the client's case; and ending with a review of applicable damage questions. The case is taken from an actual case involving an injury allegedly caused by a defective snowmobile design. The tutorials explore in some detail the technical questions of snowmobile design and medical treatment.

Harris v. Klondike Klimber assumes no knowledge of law on the part of students. It proceeds from the initial interview with the client to gathering the facts of the case, then delves deeper into the facts with interviews of witnesses and design engineers, and proceeds to the basics of legal process with pleadings and motions. It is appropriate for first-year law students and for students of the legal process in general or product liability in particular.

The disk contains a menu that is the access point to the exercises, making them very easy to use.

**Price**
Single User: $14.00
Site License: $400.00
Documentation: $5.50
(Doc. for Site License Only)



# Reading a Law Case

Application
Version 1.2
Legal Skills

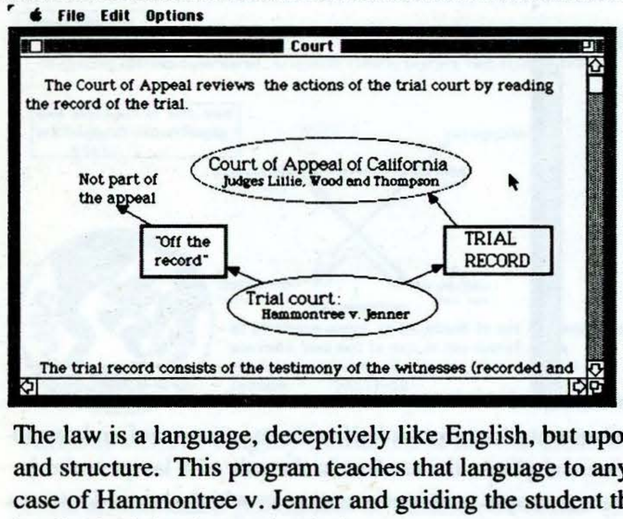
Hugh Gibbons
Law
Franklin Pierce Law Center

**System Requirements**

Macintosh Computer, minimum 512K.

**Description**

The law has a language of its own. This program teaches that language to any student who reads cases by providing the case of Hammontree v. Jenner and guiding the student through it, from the basics to the legal principles.




The law is a language, deceptively like English, but upon closer inspection having its own vocabulary and structure. This program teaches that language to any student who must read cases by providing the case of Hammontree v. Jenner and guiding the student through it, from the basics of the case to the legal principles that underpin it.

It provides information about the context of the case (for example, trial v. appellate courts), about the form of the opinion, and about the logical structure of the legal arguments within it through eight interactive tutorials. In the last tutorial the student creates a printed brief of the case by choosing from several alternative provisions. The brief serves as a guide to briefing further cases.

**Price**
Single User: $15.00
Site License: $300.00
Documentation: $4.00
(Doc. for Site License Only)

# Torts Exercises

Application
Version 1.0
Torts

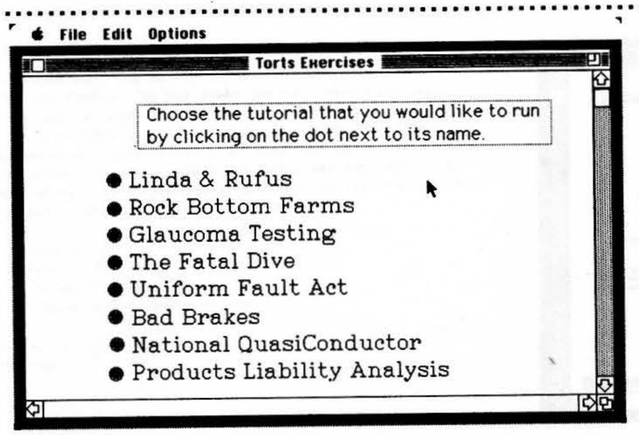
Hugh Gibbons, Editor
Franklin Pierce Law Center

**System Requirements**

Macintosh 512K computer, minimum.

**Description**

A series of exercises that explore the principles of tort law by presenting questions with alternative answers to aid in the development of legal reasoning.




This is a series of 13 tutorials—each of which takes a student from a half to three-quarters of an hour to complete—that develop legal reasoning. Each tutorial places the student in the role of a lawyer who is evaluating a client's case. The cases progress from a simple accident situation in which the student uses simple "common sense" to evaluate the case, to more complex cases requiring more sophisticated legal reasoning. All of the major areas of tort law (negligence, products liability, defamation, economic harms, privacy, intentional torts, trespass, and nuisance) are represented in the cases.

The aim of the tutorials is not to teach law; there is not a great deal of "law" in them. The aim is to teach legal analysis, the process of evaluating facts, and the process of making conditional value judgments. The cases are close cases in which either side could win. The student is free to make the judgments he or she would like and then explore the reasoning for that position.

The disk contains a menu that is the point of entry into the exercises, making them very easy to use.

**Price**

| | |
|---|---|
| Single User: | $12.00 |
| Site License: | $400.00 |
| Documentation: | $4.00 |
| (Doc. for Site License Only) | |



# Aristotle's Greek Tragedy Construction Kit

Application
Version 1.0
Literature

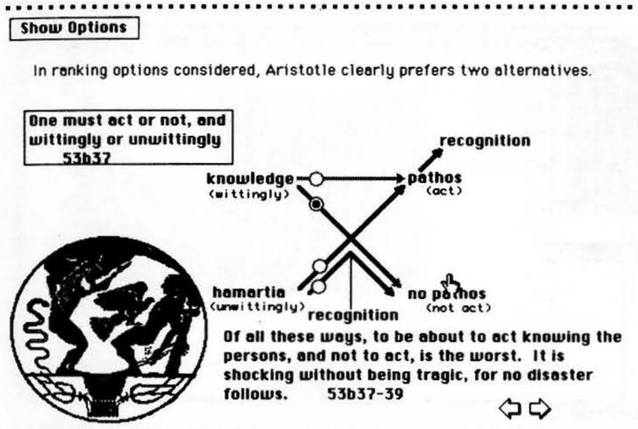
James Bierman
Porter College
University of California, Santa Cruz

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

Aristotle's Greek Tragedy Construction Kit is an electronic book—a nonlinear, nonsequential study of Aristotle's Poetics that serves as a tutorial and reference guide to The Poetics.




Aristotle's Greek Tragedy Construction Kit was created with four specific uses in mind:

1. As an annotated guided tour of Aristotle's Poetics (Lyceum level)

2. As a tutorial for deepening one's understanding of The Poetics (Academy level)

3. As a way to explore the development of Aristotle's thought through his use of specific language (For students with a knowledge of ancient Greek)

4. As a reference guide to The Poetics

Aristotle's Greek Tragedy Construction Kit features diagrams, animations, an electronic lexicon, a commentary on The Poetics, and active quotes that translate from English into the original Greek at the click of a button. It makes frequent reference to other works, including Aristotle's Ethics and Rhetoric. In addition, it is copiously illustrated with images of Greek tragedies taken from ancient vases.

**Price**

| | |
|---|---|
| Single User: | $17.00 |

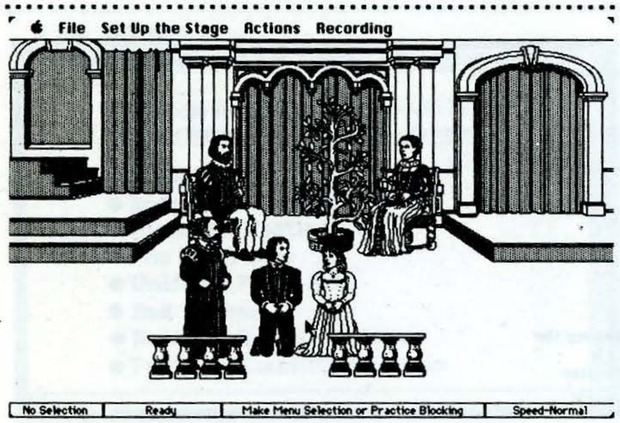
# The TheaterGame

Application
Version 1.0
English and Theater

Larry Friedlander
and the Faculty Author Development Program
Stanford University

**System Requirements**
Macintosh computer, minimum 512K, with Finder, version 4.1.

**Description**
A theater-blocking simulation using characters from Hamlet.




The TheaterGame is a simulation that lets you direct a play. You create an animated movie showing your own interpretation of a scene. The TheaterGame has a library of stages, props, and characters. You can choose from modern and traditional stages; chairs, thrones, tables, and beds; and the characters Hamlet, Ophelia, the King, the Queen, and Polonius. The characters can move across the stage, stand, sit, kneel, and lie, turn their bodies in a complete circle, and look in any direction. You can control all their moves with the mouse. Once the stage is set, you can record a movie of the action. There are special functions for editing your movie, including slow motion and selective erasing. The movie can be saved and replayed later.

The TheaterGame is versatile: you can design your own props and stages with MacPaint, and although the characters are given names from Hamlet, they can be used for many plays.

The program can be used as a sketch pad for developing ideas for a production, or it can be manually synchronized to a tape recorder for presenting a Macintosh production of Hamlet.

**Price**
Single User: $25.00



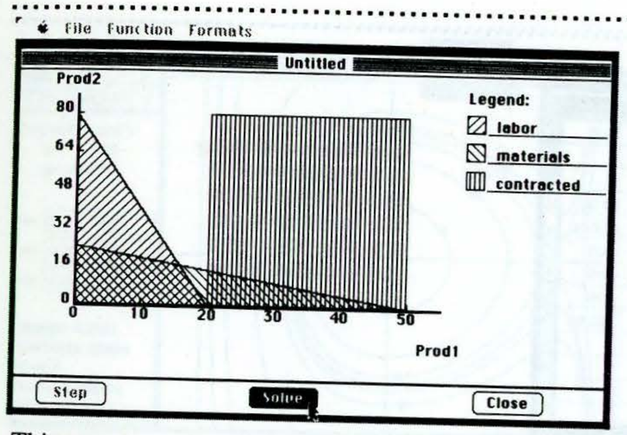
# ALPAL

Application
Version 2.0
Linear Programing and
Quantitative Methods

Jonathan Burton and Michael Feuer
Management and Organizational Science
Drexel University

**System Requirements**
Macintosh computer, minimum 128K, with Finder, version 4.1.

**Description**
Linear programming by three methods: graphical, algebraic, and simplex. Sensitivity analysis and duality.




This program solves linear programming by the graphical method (limited to eight constraints), the algebraic method, and the simplex method (each limited to 30 decision variables and 30 structural constraints). Sensitivity analysis on the objective coefficients and the right-hand sides are provided. Dual L.P.S. are constricted by the program. Several format and printing options are possible. Selected variables or constraints may be suppressed by the user.

**Price**
Single User: $21.50

# Big ALPAL

Application
Version 1.0
Linear Programing and Quantitative Methods

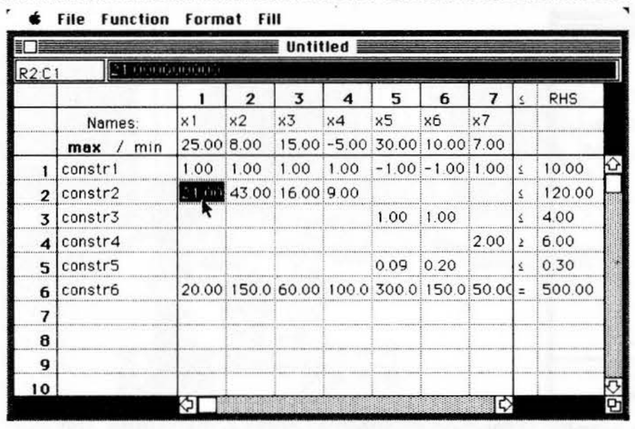
Johnathan Burton
Management and Organizational Science
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

### Description

A tool to be used in solving linear programming problems with up to 300 variables and constraints with sensitivity analysis.




| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | ≤ | RHS |
|---|---|---|---|---|---|---|---|---|---|---|
| | Names: | x1 | x2 | x3 | x4 | x5 | x6 | x7 | | |
| | max / min | 25.00 | 8.00 | 15.00 | -5.00 | 30.00 | 10.00 | 7.00 | | |
| 1 | constr1 | 1.00 | 1.00 | 1.00 | 1.00 | -1.00 | -1.00 | 1.00 | ≤ | 10.00 |
| 2 | constr2 | -1.00 | 43.00 | 16.00 | 9.00 | | | | ≤ | 120.00 |
| 3 | constr3 | | | | | 1.00 | 1.00 | | ≤ | 4.00 |
| 4 | constr4 | | | | | | | 2.00 | ≥ | 6.00 |
| 5 | constr5 | | | | | 0.09 | 0.20 | | ≤ | 0.30 |
| 6 | constr6 | 20.00 | 150.0 | 60.00 | 100.0 | 300.0 | 150.0 | 50.00 | = | 500.00 |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |

Big ALPAL is a tool to be used in solvinge linear programming problems. The maximum size of the problems that can be solved ranges from 19 decision variables and constraints for a Macintosh 128K computer to over 300 on a Macintosh Plus. All solutions include sensitivity analysis. The program allows the user to view the current model in two modes and under formulation. The program will solve either the primal or dual of the model. An optional alarm sounds when the algorithm has finished, since large problems can take several hours to solve.

### Price

Single User: $21.50

Mathematics



# DEGraph

Application
Version 1.04
Mathematics

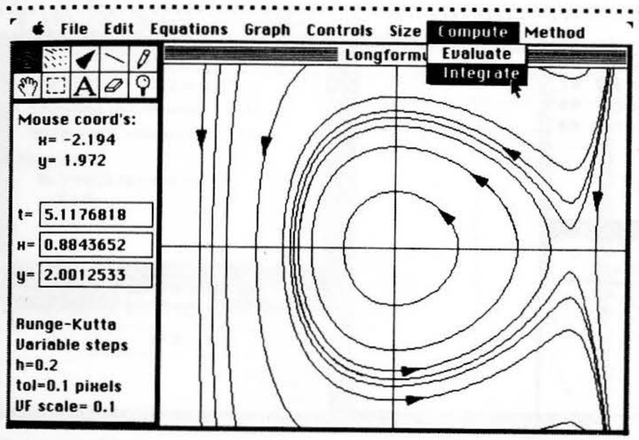
Henry C. Pinkham
Mathematics
Columbia University

### System Requirements

Macintosh computer, minimum 512K. A Macintosh II optimized version is also included.

### Description

Graphs differential equations with an easy-to-use MacPaint-style interface.




DEGraph graphs the vector field and integral curves of systems of two first-order differential equations. Equations are entered using standard mathematical notation. MacPaint-style features give the program great versatility; the user can insert text, draw arrowheads and straight lines, erase, and graph auxiliary functions y=f(x) and x=g(y). Graphing takes place on a full page (same size as a MacPaint page). Graphs can be stored on disk, printed, and transferred to other applications such as MacWrite or MacPaint. Documents can be opened by MacPaint and many other graphics programs. DEGraph runs under Switcher and is fully error-trapped. A Macintosh II optimized version of the program is also supplied.

DEGraph supports three standard numerical methods to generate graphs: Euler, Heun and the fourth order Runge-Kutta method. The step size for the independent variable can be fixed, or it can be varied automatically to achieve any desired accuracy. The three numerical methods can be easily compared for speed and accuracy.

DEGraph is designed for students and instructors of elementary and intermediate ordinary differential equations classes, including classes on dynamic systems and numerical methods in ordinary differential equations.

### Price

Single User: $22.00

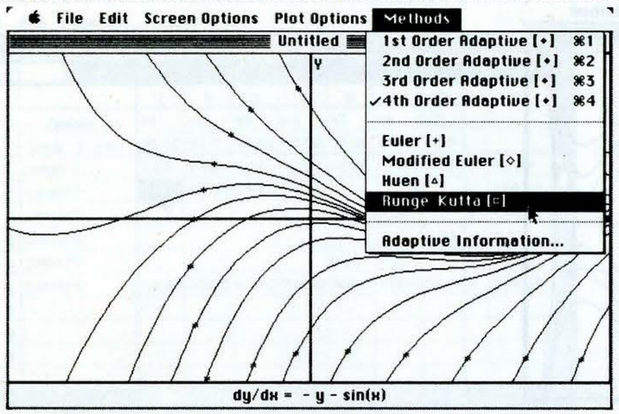
Mathematics

# Differential Equations

Application — Herman Gollwitzer
Version 1.0 — Mathematics
Mathematics and Statistics — Drexel University

**System Requirements**
Macintosh computer, minimum 512K, with Finder, version 5.5.

**Description**
An exploratory tool for viewing solutions to first-order scalar differential equations.




Differential Equations is an exploratory tool for viewing solutions to a first-order scalar differential equation dy/dx=f(x,y). Designed to be useful for an instructor in the classroom and a student outside the classroom, Differential Equations permits rapid answers to many "what if?" questions that arise in an introductory differential calculus course. Numerical analysis techniques for approximating solutions to differential equations are not needed to utilize this application, but certain features that illustrate and control numerical processes are included. Differential Equations is designed to be intuitive to users familiar with standard Macintosh applications.

**Price**
Single User: $17.00

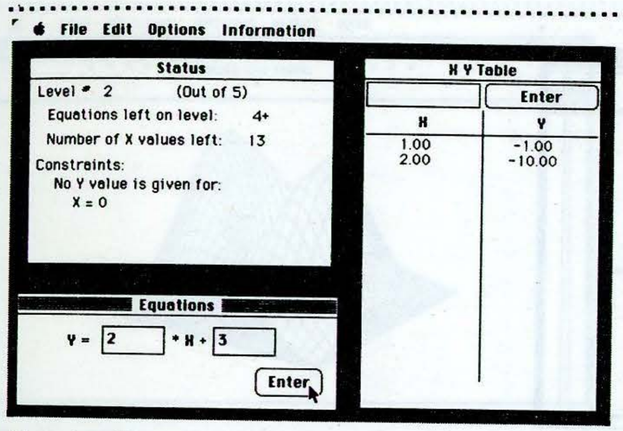


# Function Finder

Application — Dr. Jere Confrey
Version 2.3 — Education
Math Education — Cornell University

**System Requirements**
Macintosh Computer, minimum 512K or Plus.

**Description**
Function Finder challenges students to find equations for data tables of linear functions without requiring an introduction to lines. It is designed to promote students' strategies and provides a simple record of their methods.




Function Finder is single-purpose software designed to assist students in recognizing linear relationships in the patterns in data tables. It has been widely documented that students do not recognize linear relationships in data tables without the use of key words (lines, slope, intercept)—a failure detrimental to the students' application of mathematics outside the classroom.

In Function Finder, the student is asked to generate at least twenty equations (four equations at each of five levels of difficulty). The student chooses a set of x values and the computer responds with the corresponding y values. Whenever the student wishes, she/he can guess the equation by filling in the blanks in the statement: y = __ * x + __.

The five levels of difficulty are generated by putting increasing constraints on the students' choice of x values. It eliminates the use of 0, of consecutive values, and symmetric values around zero and eventually limits them to three points.

Function finder has features that make it uniquely well-designed for classroom use. It is:
- designed in response to actual student strategies
- provides remediation at all levels
- encourages student reflection by requiring them to record their strategies
- provides simple but informative records of their use

Function Finder demonstrates how students can be encouraged to create important mathematical ideas by themselves, in a manner useful and manageable for the classroom instructor.

**Price**
Single User: $14.00

# FunPlot

Application
Version 3.0
Mathematics and Sciences

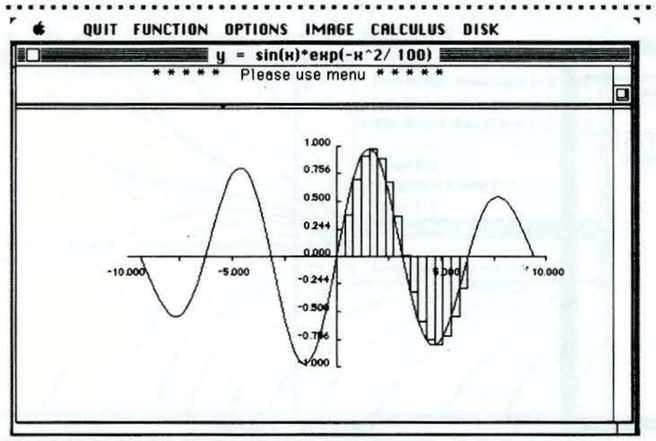
Walter Zimmermann
Mathematics
University of the Pacific

**System Requirements**

Macintosh computer, minimum 512K.

**Description**

Function plotter and calculus demonstrator. FunPlot plots functions and illustrates calculus problems. Images can be printed or saved and used with MacPaint or MacWrite.




FunPlot is an interactive program for plotting functions and representing calculus problems graphically. It can be used to produce graphs for reports or publications or for lecture demonstrations in mathematics, natural sciences, engineering, and many other related fields. The program will plot and tabulate functions with up to three parameters that may be varied without re-entering the function.

FunPlot will display the derivative, second derivative, and anti-derivative of a function, compute definite integrals, and illustrate the definition of the derivative and the definite integral. Graphs can be explored using a "pan-zoom" feature. Coordinates can be examined using the mouse. Images are indexed and can be displayed as a sequence or saved on disk. Images can also be printed on the ImageWriter and LaserWriter printers.

FunPlot is designed for classroom demonstration, and for producing graphics for teaching materials, reports, or publications. Students can use this program to visualize problems, and to produce graphs for assignments and lab reports. Thorough documentation with examples is included.

Version 3.0 has a new user interface. Unlike previous versions, functions are entered using standard algebraic notation.

**Price**
Single User: $15.00
Site License: $1,000.00
Documentation: $5.50
(Doc. for Site License Only)

Mathematics



# FunPlot-3D

Application
Version 2.0
Mathematics and Sciences

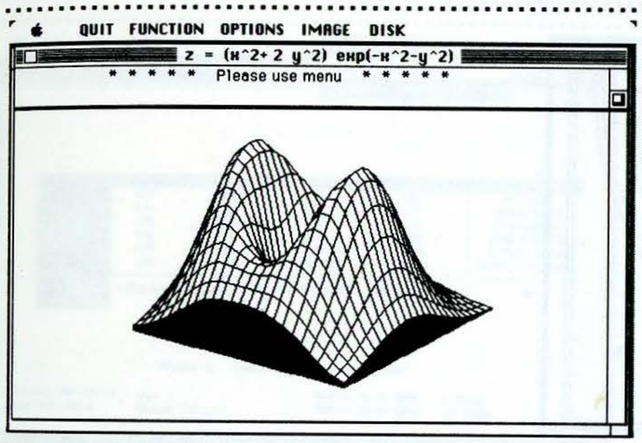
Walter Zimmermann
Mathematics
University of the Pacific

**System Requirements**

Macintosh computer, minimum 512K.

**Description**

Functions of two variables can be drawn in Cartesian or polar coordinates and in four different modes. Images can be printed on an ImageWriter or LaserWriter printer.




FunPlot-3D is an interactive three-dimensional graphics program for representing functions of two variables (z = f(x,y)). Surfaces may be shown in four different "modes," including hidden line and representations with shading for vivid three-dimensional imagery. Coordinate curves in Cartesian or polar coordinates may be drawn. Any viewpoint may be selected. It is also possible to show vertical cross sections through the surface (for example, when demonstrating the directional derivative).

Mathematical functions may be defined on a rectangle, a circle, a triangle, or certain other domains. The definition of the function may include up to four numerical parameters that can be varied without re-entering the function. Images can be saved on disk files for future use and can be printed on the ImageWriter and LaserWriter printers.

FunPlot-3D is designed for classroom demonstrations, and for producing graphics for teaching materials, reports, or publications. Students can use this program to visualize problems or to draw graphs for lab reports and assignments. Thorough documentation with examples is included.

Version 2.0 has a new interface. Unlike version 1.0, functions are entered using standard algebraic notation.

**Price**
Single User: $25.00
Site License: $1,500.00
Documentation: $6.00
(Doc. for Site License Only)

Mathematics

# IVP

Template
Version 1.0
Mathematics

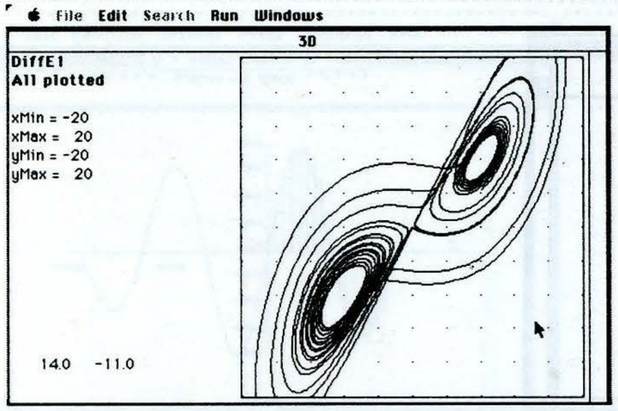
Joe Elgin Krueger
Mathematics
Del Mar College

**System Requirements**

Macintosh computer, minimum 512K. Microsoft BASIC is also required.

**Description**

A collection of Microsoft BASIC templates that enables the user to make graphical studies of initial-value problems.




IVP is a collection of easy-to-use BASIC templates that enables the user to study initial-value problems graphically. For example, one could record the solutions to:

$x'' = a - x^2,\ x(t_0) = x_0,\ x'(t_0) = x'_0$

for several values of the parameter a. Or, for another example, one could graph g and x, where

$x' = -a * x + g(t)$

in the same window for the purpose of discovering the relations between g and x.

The Clipboard and Scrapbook are supported so graphs and tables may be moved to other applications such as word processors, paint programs, and spreadsheets for analysis and enhancement. Also, graphs may be printed without the use of a paint program. All five templates in IVP have a playback-and-record feature that allows the user to record multiple graphs in the same graph window.

Record and playback makes it possible for a beginning student of differential equations to make discoveries by answering the question "I wonder what happens if...?" Several discovery exercises are included in the manual and many others are included on disk.

**Price**
Single User: $16.50

Mathematics



# Linear Programming by Fractions
## for the Macintosh

Application
Version 2.0
Mathematics

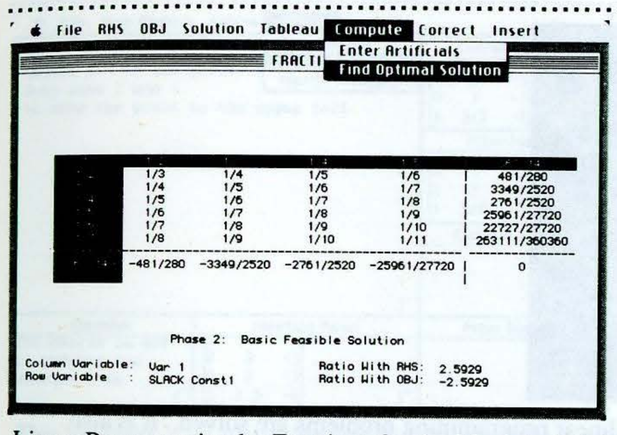
Paul E. Hodges and Edward N. Willman
Economics, Finance, and Decision Science
University of Texas at the Permian Basin

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 5.3.

**Description**

Aids students in learning the simplex method and solving linear programming problems in the familiar format of rational fractions.




"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

Linear Programming by Fractions for the Macintosh is intended for students and instructors of linear programming. The program allows users to apply the simplex method to solve problems that are larger than can be done by hand. In addition to using fractions, "big M" is displayed and the program is consistent with either sign convention commonly used in textbooks. Normally, the solution process is under the control of the student through the use of simple, intuitive commands; however, automatic solution procedures are also available. Optionally, sensitivity analysis can be performed, and initial tableaus may be modified in order to either verify calculated ranges or answer "what if" questions. The program also permits implementation of Gomory's cutting plane algorithm for solving integers.

Instructors can use the program in a variety of ways:
- As a tutoring or laboratory tool
- For the development of test banks, overheads, and solution manuals
- For class demonstrations
- As a self-instruction device

Models with up to 18 constraints and 53 decision variables may be entered and edited by the user. The fractional values have an accuracy of 19 significant digits. All outputs to the screen, including tableaus, sensitivity analyses, and displayed solutions, can also be printed or written to disk as ASCII files.

**Price**
Single User: $20.00

Mathematics

# MacSimplex

Application
Version 1.62
Operations Research and Math

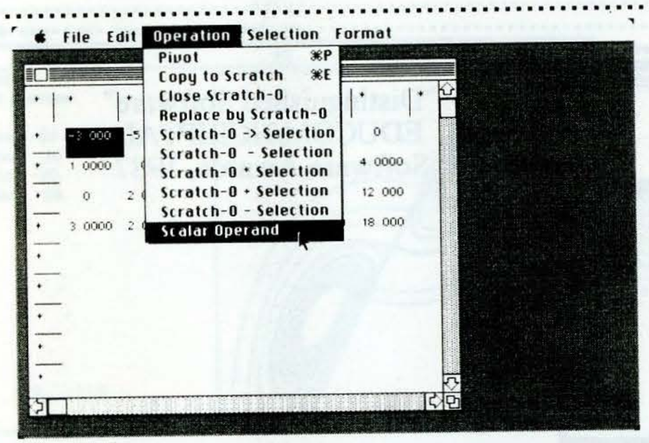
John E. Doner
Mathematics
University of California at Santa Barbara

### System Requirements

Macintosh computer, minimum 128K. Requires a word processor that will save documents as "text only," and a printer.

### Description

A tool for students of linear programming and linear algebra.




MacSimplex is designed to teach students how linear programming problems are solved. It is also useful for other topics in linear algebra. With the Macintosh interface, a student can create, edit, and manipulate matrices in matrix windows. Using the mouse, the student can select portions of a matrix and choose menu commands to perform basic computational steps of matrix algebra, such as pivoting, matrix multiplication, component-wise addition, and identification of the minimum element within a selection.

The number and sizes of matrices simultaneously represented on-screen are limited mainly by available memory. Scroll bars are used for matrices too large to fit on the screen. A "recording" command enables a student to record each step for the purpose of preparing a homework assignment.

This program does not implement the simplex algorithm or any other problem-solving algorithm. In the author's experience, watching a program solve a problem on its own teaches little about the workings of an algorithm. MacSimplex makes the necessary computational steps easy and convenient, but leaves algorithm logic under user control.

**Price**
Single User: $12.00

Mathematics



# Matrix Algebra

Application
Version 2.2
Mathematics

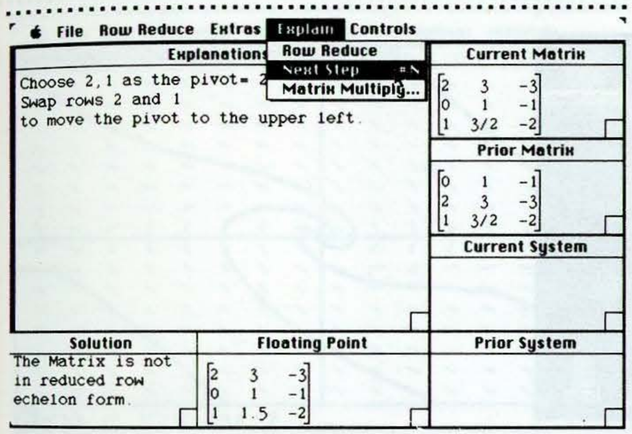
Bernard Kolman and Todd Rimmer
Mathematics
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1.

### Description

This program provides tutorial and solution modes for transforming a matrix to reduced row echelon form, solving a linear system by Gaussian elimination, multiplying two matrices, and inverting a matrix.




This program is an education tool to help users learn matrix algebra. The program transforms a matrix (up to 6 x 12) to reduced echelon form, solves a linear system (up to six equations all unknowns), multiplies two matrices (up to 6 x 12), and finds the inverse of a matrix (up to 6 x 6).

The program can be used in three different modes: (1) solve automatically with a detailed explanation; (2) solve with the user specifying the operations and the computer carrying out the arithmetic steps (the user can ask the computer to carry out and explain the next step in the solution); or (3) solve automatically without explanation.

The program uses rational arithmetic (32-bit numerator and denominator) for calculations. If overflow occurs, the program automatically uses extended floating-point arithmetic only where needed. Matrices can be entered directly and equations can be entered in standard mathematical form with eight-character variable names and optional subscripts. File-handling capabilities are included, so users can save the complete status of a given problem to disk to be resumed later. For advanced users, the program provides partial pivoting and control over the display format for floating-point numbers. The program, fully error-trapped, is useful in finite mathematics and linear algebra courses, or wherever matrix algebra material is covered.

**Price**
Single User: $23.50

Mathematics

# Not So Simple Arithmetic

Application
Version 2.0
Mathematics

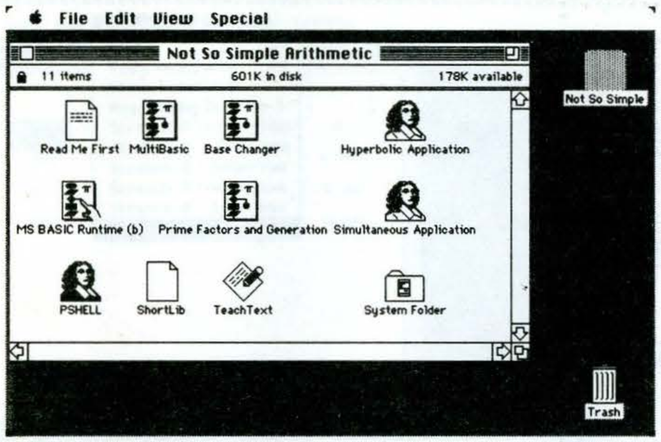
Francis J. Herrmann
Electrical and Computer Engineering
Drexel University

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 5.5, and one 800K disk drive.

### Description

A series of easy to use mathematics utility programs.




Not So Simple Arithmetic is a series of mathematics utilities that solve common mathematical problems. The programs include:

- Base Changer — a program that changes a number from one radix (base) to another. The radix of either number can range from 2 to 16.
- Multi-Basic — provide addition, subtraction, multiplication, and division of two numbers with radices in the range of 2 to 16 (with the exception of base 10). Both numbers must have the same radix.
- Simultaneous Application — solves linear simultaneous equations involving two, three, or four unknowns.
- Hyperbolic Application — obtains the hyperbolic function (and inverse hyperbolic function) of an input number. The functions are: sinh, cosh, tanh, sech, csch, coth, arcsinh, arccosh, arctanh, arcsech, arccsch, and arccoth.
- Prime Factors and Generation — obtains the prime factors of any input number smaller than 2,147,483,647 and generates a user-selected number of prime numbers beginning with any user-selected odd number. Prime numbers up to 2,147,483,647 can be generated.

This program does not conform to the standard Macintosh interface guidelines yet it is very easy to use

### Price

Single User: $19.50



# Phase Portraits

Application
Version 2.0
Differential Equations

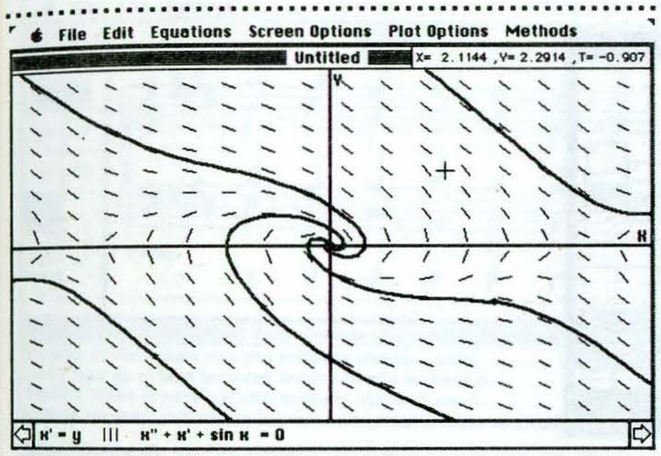
Herman Gollwitzer
Mathematics
Drexel University

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 5.5, and one 800K disk drive.

### Description

An exploratory graphics tool for studying suitably scaled planar systems of the form: $dx/dt = f(x,y,t)$, $dy/dt = g(x,y,t)$.




"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1988

Phase Portraits is an exploratory graphics tool for studying suitably scaled planar systems of the form: $dx/dt = f(x,y,t)$, $dy/dt = g(x,y,t)$.

The program permits the user to observe qualitative features of solutions of this system for almost any choice of f and g. Such systems are usually encountered in introductory courses in differential equations, vibration analysis, nonlinear circuits, and classical dynamics.

Although designed primarily for individual use, several features make it useful for classroom demonstrations. No knowledge of numerical analysis is necessary in order to use the application

### Price

Single User: $30.00

# Appletones and Mozart

Application
Version 2.0
Music

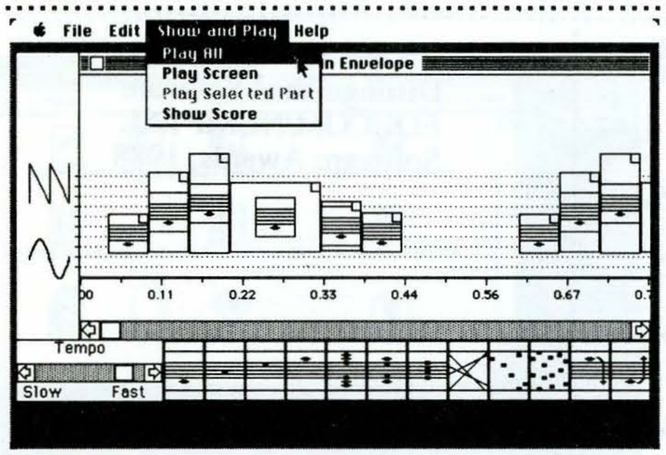
Developer: John R. Meier
Concept: Jon Appleton
Music
Dartmouth College

### System Requirements

Macintosh computer, minimum 128K.

### Description

AppleTones teaches the importance of repetition, silence, changes in volume, and timbre in the composition and arrangement of music. Mozart lets you play the "musical dice game," experimenting with musical arrangement, tempo, articulation, and dynamics.




Appletones is used in introductory music composition courses. It teaches the importance of four elements in the composition and arrangement of music: repetition, silence, changes in volume, and timbre. Twelve predefined sounds can be arranged, and their duration, timbre, and volume changed. The user composes a piece by dragging any of the available sounds from a palette onto a staff. The vertical position of the sound determines its timbre; the width of the sound determines its duration; and its height determines its volume. Any sound may be changed in any of these parameters at any time, and cut-and-paste editing is also available. The piece may be played on the built-in Macintosh speaker or saved to disk for later retrieval. The score may also be printed on an ImageWriter.

Used in introductory music composition courses, Mozart gives the music student with no formal experience in composition the opportunity to experiment with musical arrangement, tempo, articulation, and dynamics. It allows the user to compose a minuet from any of six predefined two-measure-long phrases. By dragging items from any of four palettes onto the staff, the user controls the arrangement of the phrases, as well as tempo, articulation, and dynamics. The minuet may be played on the Macintosh computer's built-in speaker or saved to disk for later retrieval. The score may be printed on an ImageWriter.

Version 2.0 of both programs has all of the help files integrated into the application file, and has a new startup screen.

### Price

Single User: $13.00



# MacVoice

Application
Version 2.0
Music Theory

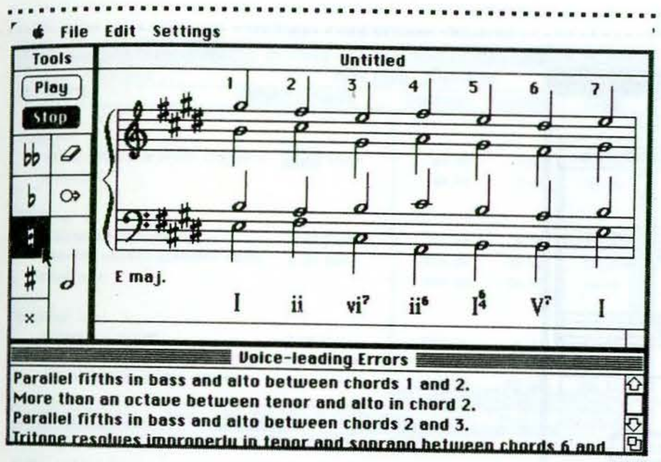
M. Taft Thomas and P. Monta
Music
Carnegie-Mellon University

### System Requirements

Macintosh computer, minimum 128K.

### Description

A program designed to assist music theory students in learning to write four-voice chorales, based on practices of the seventeenth and eighteenth centuries.




MacVoice is an interactive program that assists the user in writing four-part music. Designed as a tool for the student of traditional music theory, MacVoice provides instructive criticism whenever the user makes an error according to eighteenth-century principles of good voice leading and preferred doubling.

Musical examples can be played during the process and printed, so that correct and incorrect versions can be heard, studied, and compared.

### Price

Single User: $25.50

# Palestrina

Application
Version 2.0
Music Theory and Composition

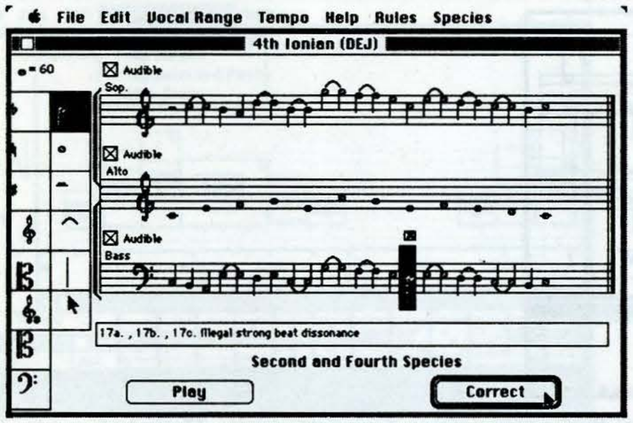
Developers: David E. Jones, John R. Meier, and Kevin B. Ryan
Concept: David Evan Jones
Music Department
Dartmouth College

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 5.3 or 6.1.

**Description**

An error-detection system for students learning to write two-part counterpoint exercises in sixteenth century style.




Since the eighteenth century, Palestrina's style of counterpoint has been taught in a set of graded steps called "species." Palestrina (version 2.0) is an error-detection system for students learning to write two-part counterpoint exercises in first, second, and fourth species. Palestrina is designed to be used in conjunction with texts and/or instruction in the writing of sixteenth century counterpoint. The documentation for use of the program is presented entirely in the form of "HELP" menus on disk.

Palestrina allows the student to enter a reference melody (cantus firmus) and counterpoints on screen above and below the cantus firmus. At any time, the student may hit <return> or click the box marked "CORRECT" to receive immediate feedback on any errors in the writing according to approximately twenty-eight rules. Each note that violates one or more of the rules is marked with an "x." When the student clicks each "x," the errors at that note are identified briefly in a box below the staff and are referenced with rule numbers. The rules are fully explained in the rules menu. Palestrina thus provides generalized rule structures for three species of counterpoint and gives the student immediate feedback as to whether she/he has violated any of these rules.

Although the program is rule-based, its effect is to de-emphasize a rule-oriented approach to counterpoint. Because Palestrina gives immediate and continuous feedback on the basic guidelines for species counterpoint, students are able to write "error-free" counterpoints in their first assignment. Students using Palestrina learn the rules of counterpoint very quickly and easily. They are encouraged to hear what they have written and to strive beyond a rule-oriented approach to shape their lines to the most beautiful effect within the style. The program will continue to be useful to students throughout any introductory course in sixteenth century counterpoint.

**Price**
Single User: $23.00



# MacDiet—Student Version

Application
Version 1.1
Nutrition

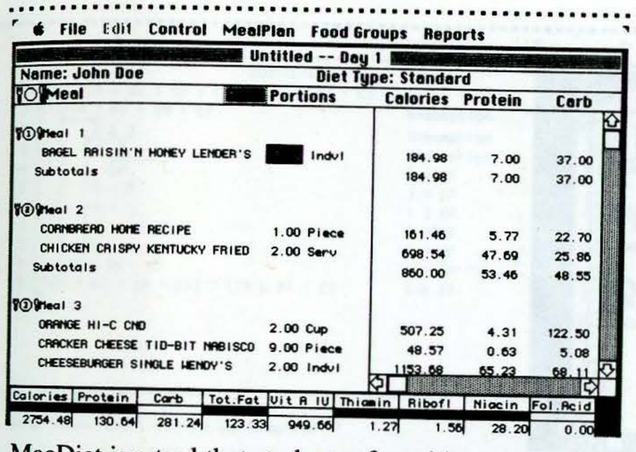
Shortie McKinney
Nutrition
Drexel University

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 4.1 or 5.3, and one 800K disk drive.

**Description**

A tool for nutrition students to use in performing nutritional data manipulation.




MacDiet is a tool that students of nutrition can use in performing nutritional data manipulation. The user inputs personal data, diet order, meal information, and physical activity level. With this information reports on RDA Comparison, Dietary Goals, and Activity Level can be produced. Three days of information may be analyzed at a time using the student version. The application may be used to analyze current diet or to create an appropriate diet for a specific individual. The program contains a data base of approximately 1000 foods with nine nutrients. An expanded data base of over 2400 foods, MacDiet Expanded Data Base, is also available (see next page).

**Price**
Single User: $25.00

# MacDiet Expanded Data Base

Template
Version 1.1
Nutrition

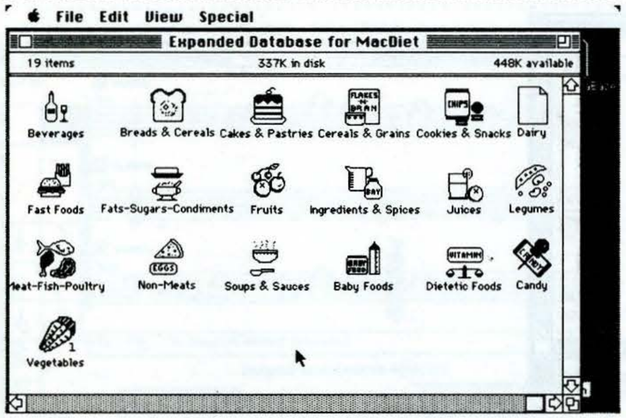
Shortie McKinney
Nutrition
Drexel University

### System Requirements

Macintosh computer, minimum 512K, with Finder, version 4.1 or 5.3, and one 800K disk drive. The MacDiet application (see previous page) is also required.

### Description

An expanded data base to be used with the MacDiet application (see previous page).




The MacDiet Expanded Data Base contains 2400 foods with 24 nutrients. This data base can be used in lieu of the data base included with the MacDiet application (see previous page). The data base for the student version of MacDiet data base contains 1,000 foods with 18 nutrients.

### Price

Single User: $35.00



# BERTIE - II: A Symbolic Logic Tutor

Application
Version 2.3
Logic, Philosophy, and Mathematics

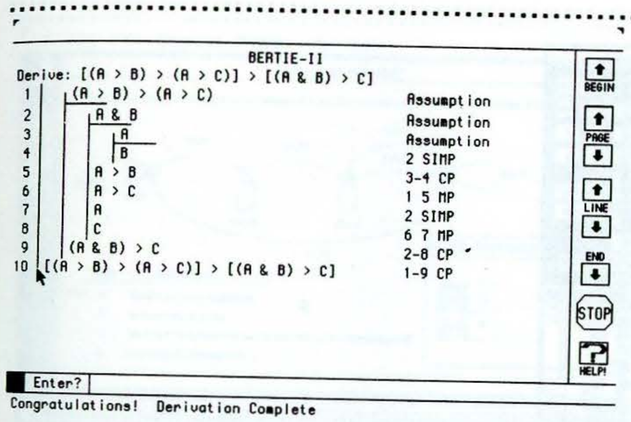
Concept and Developer: Jim Moor
Dartmouth College
Concept: Jack Nelson
Temple University

### System Requirements

Macintosh computer, minimum 512K.

### Description

A program for teaching natural deduction.




Bertie - II checks derivations in sentential logic and predicate logic. The program verifies that formulas are well-formed and that inference rules are correctly applied. The program offers both an intelim rule set (one rule to introduce a logical operator and one to eliminate it) and an expanded rule set. Users may create problems of their own or call up stored problems. Bertie - II provides hints and help on stored problems if assistance is requested. A user may also save a derivation in progress and restore it for further work.

Bertie - II is self-contained, but a more detailed explanation of the logical system can be found in "The Logic Book," by Merrie Bergmann, James Moor, and Jack Nelson (Random House, 1980).

### Price

Single User: $8.00

# Tarski's World

Application
Version 2.2
Logic

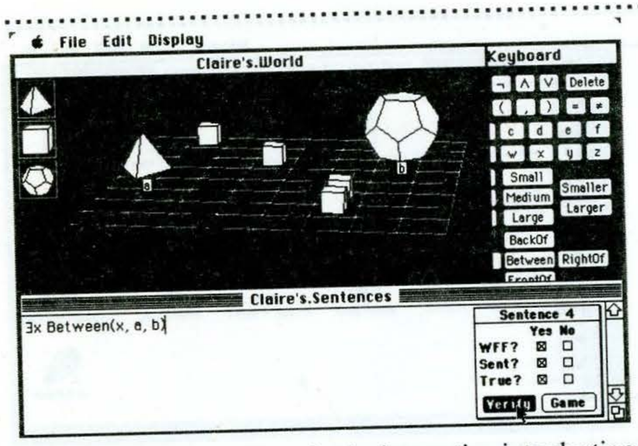
Jon Barwise and John Etchemendy
Philosophy
Stanford University

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 5.3.

**Description**

A basic, interactive introduction to first-order logic that provides an exciting tool to help the student understand complex sentences of first-order logic, what it means for them to be true, and how to translate sentences of English into first-order symbolism.




Tarski's World provides a basic, interactive introduction to the semantics of first-order logic. The student is presented with two windows, one for entering sentences of first-order logic, the other for creating and modifying three-dimensional worlds. The student can then use Tarski's World to check to see whether the sentences are true in the world. When the student's own assessment is incorrect, Tarski's World allows the user to play a game involving the step-by-step decomposition of the sentence. This game quickly teaches the student the meaning of the various logical connectives and quantifiers. The student soon comes to understand the import of complex sentences in first-order logic, what it means for them to be true in a given world, and how to translate sentences of English into the first-order symbolism.

Tarski's World provides an exciting introduction to logic. With the accompanying 100-page manual, it is completely self-contained. At Stanford University it is used in a beginning course in logic as a supplement to a standard text. Tarski's World also comes with files containing prepackaged sentences and worlds, providing a series of over 100 exercise sets with a total of more than 700 individual problems, that range from very basic to quite challenging.

**Price**
Single User: $16.50
Site License: $900.00
Documentation: $7.50
(Doc. for Site License Only)



# Turing's World

Application
Version 1.01
Logic and Computer Science

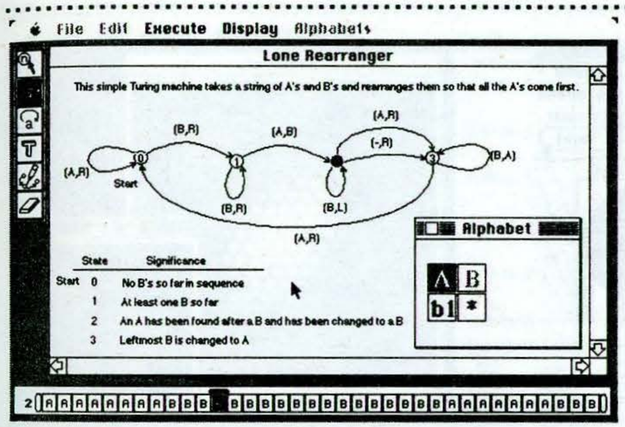
Jon Barwise and John Etchemendy
Philosophy
Stanford University

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1.

**Description**

An introduction to the concepts of Turing machines by providing a graphical environment in which to build, debug, and run them.




Turing's World is a self-contained introduction to Turing machines, one of the fundamental notions of logic and computer science. It allows the user to build, debug, and run sophisticated Turing machines. The machines are designed by drawing their state (flow) diagrams using a convenient package of graphical functions. The Turing machines are then simulated by the Macintosh on a pictorial representation of an unbounded tape.

Turing's World was created at Stanford University for use as a supplement to an intermediate-level computability and logic course, but the program and manual can be used in several ways: as part of a high school or college course, with homework and grading being done on the Macintosh; by individuals on their own; or as an aid in designing Turing machines for students in courses where the software is not required. For people using Turing's World on their own, the manual gives an explanation of Turing machines and their historical background.

The user will be able to build simple machines within an hour or two. Over 50 exercises take the student from the initial machines through a significant portion of elementary computability theory, and could provide material for weeks of instruction.

**Price**
Single User: $15.00
Site License: $900.00
Documentation: $6.00
(Doc. for Site License Only)

# Venn: A Syllogistic Logic Tutor

Application
Version 4.2
Philosophy

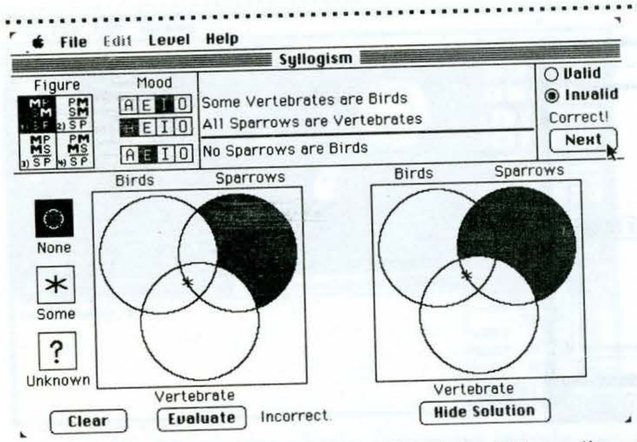
Developer: Richard Wesley and Samuel Weiss
Courseware Development Group
Concept: Jim Moor and Mark Bedau
Philosophy
Dartmouth College

**System Requirements**

Macintosh computer, minimum 128K.

**Description**

A program used for teaching the solution of logical syllogisms with Venn diagrams.




Venn is used for teaching the application of Venn diagrams in traditional class logic. Venn uses standard notation for marking these diagrams, and the program has numerous help files so that it may be used without a textbook. Venn offers practice with Venn diagrams on four levels: Simple sentences; sentences with complements of classes; immediate inferences (one premise and a conclusion); and syllogisms (two premises and a conclusion).

Venn randomly generates sentences and arguments. The student represents sentences on a Venn diagram, using a MacPaint-style marking system. The program checks the student's diagram and presents a solution if the student asks for one. If an argument is being evaluated, the student further indicates whether the argument is valid or not. The program tells the student whether his or her judgment about validity is correct.

Version 4.2 allows the student to alter and evaluate various logical patterns. The student can manipulate sentence forms, complements of classes, and figures and moods of syllogisms at the click of a mouse.

**Price**
Single User: $7.00

Philosophy



# DAFRAC—Diffraction Calculation Tool

Application
Version 3.0
Wave Propagation and Fourier Transforms

Greg Forbes, Pete Hoch, and Simon Cohen
The Institute of Optics
University of Rochester

**System Requirements**

Macintosh computer, minimum 512K, with Finder 4.1 or later, and one 800K disk drive.

**Description**

A tool for the investigation of wave diffraction and two-dimensional Fourier transforms.




DAFRAC is a tool for the investigation of wave diffraction and Fourier transforms. The program is designed to allow easy access to:

1. The Fresnel diffraction patterns for any binary object.

2. The transition from the Fresnel patterns to the far-field diffraction pattern.

3. The results of two-dimensional Fourier transforms.

The numerical solutions made so accessible by DAFRAC open up a new route to useful results, insights and intuition in the area of diffraction.

Wave propagation is modeled by using either the Fresnel or far-field (Fraunhofer) diffraction integrals, which are evaluated numerically by making use of the Fast Fourier Transform. The resolution at the object is limited to no more than 128 x 128 pixels (in which case each FFT takes less than a minute). The objects are created in a MacPaint-style fashion, and the resulting intensity maps are displayed as five-level grey-scale plots with control on the "exposure." The program is well suited both for in-class demonstrations and as a special-purpose calculator for students to use on assignments.

Version 3.0 includes report generation, significantly faster screen painting, and editing capabilities with clipboard support.

**Price**
Single User: $20.00

Physics

# Heavenly Mac

Stackware
Version 1.0
History of Astronomy

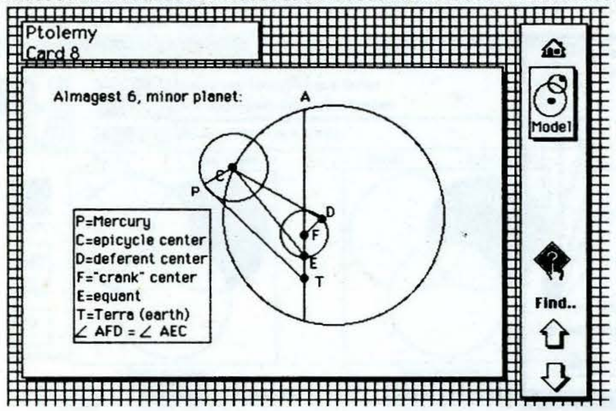
Developer: Ashley Chadowitz
Concept: Richard Kremer
History
Dartmouth College

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

Graphic animations of major astronomical theories from ancient Greeks through Newton.




Heavenly Mac introduces students to the history of Western astronomy presented chronologically from ancient Greeks through Isaac Newton. Written using Apple's HyperCard, this courseware integrates text, diagrams, and animations.

The user begins with animations of celestial phenomena that puzzled early societies and thus required explanation—daily motions of stars, and annual motions of the sun, moon, and planets. In the animations the rate of change and the observer's place on the Earth may be varied by the user. The courseware then introduces students to early Greek attempts to model these celestial motions with rotating spheres or circles. Brief biographical descriptions of Eudoxus, Aristotle, Plato, and Ptolemy supplement depictions of their astronomical theories. Animations show how the regular motions of geometrical elements in the models produce the irregular motions of the heavens.

The theories of Copernicus, Kepler, and Newton are similarly treated. To simulate Newtonian gravitation, the movement of a planet around the sun is animated. The user may vary the initial speed of the planet, its initial distance from the sun, and the strength of gravitational force (thereby observing "non-Newtonian" gravitation).

Heavenly Mac is intended to supplement introductory courses in astronomy or the history of science at the college level. Several 30-minute sessions enable most students to complete this courseware.

**Price**
Single User: $10.50



# Mechanics

## Physics Simulations I

Application
Version 1.0
Introductory Physics

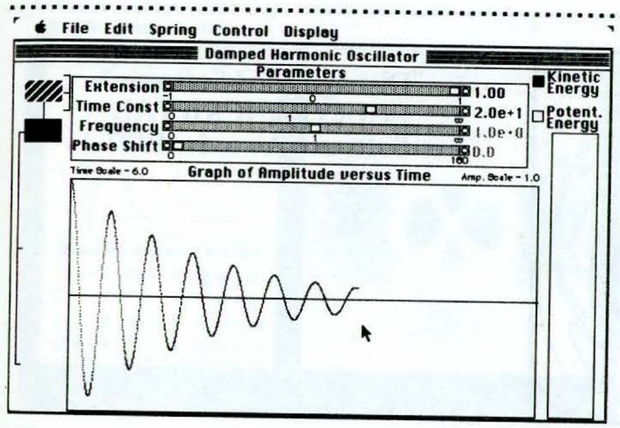
Blas Cabrera
and the Faculty Author Development Program
Stanford University

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 4.1 or later.

**Description**

Introduction to elementary concepts in mechanics through computer simulations and animations. Students can explore the mathematical structure of the physical models.




"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

This one disk contains five separate programs:

- BALLISTIC simulates two-dimensional motion in a constant gravitational field. A drag proportional to velocity can be included with an optional dependence on exponential altitude.
- POTENTIAL simulates the motion of a particle in a one-dimensional potential well. Energy, velocity, acceleration, and time-average probability density can be plotted. The student may choose from predefined potentials (for example, harmonic) or define a potential of the student's choice.
- OSCILLATOR simulates simple damped and driven harmonic oscillators. Displays include a mass on an elastic band, and amplitude versus time and energy (potential, kinetic, and total).
- KEPLER simulates planetary motion. Kepler's laws are studied by using predefined orbits or by setting the parameters of one or two planets around a large central mass.
- EINSTEIN demonstrates special relativity. The screen is divided into a stationary and a moving frame that contain clocks and light pulses on a grid. Special relativistic effects (including the twin paradox) can be simulated.

All programs include utilities for printing the screen display on an ImageWriter printer or for storing it on the disk for later printing.

**Price**
Single User: $21.50

# Electromagnetism

## Physics Simulations II

Application
Version 1.0
Introductory Physics

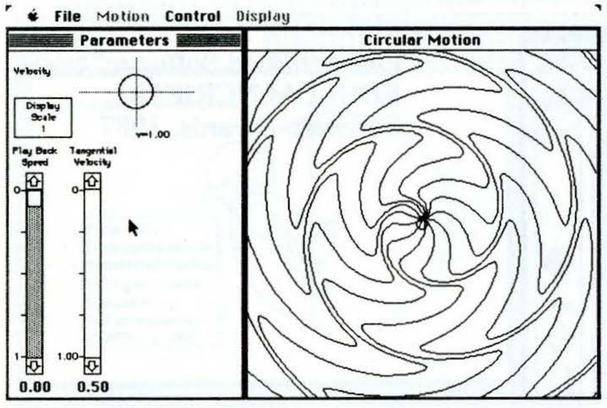
Blas Cabrera
and the Faculty Author Development Program
Stanford University

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 4.1 or later.

**Description**

Elementary concepts in electricity and magnetism introduced through computer simulations and animations. Students can explore the mathematical structure of the physical models.




"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

Four separate programs are contained on one disk:

- COULOMB displays the electric field pattern for up to 15 point charges on a plane. The position and magnitude of each charge is set by the student.
- LAPLACE calculates and displays the solutions to Laplace's equation on a two-dimensional rectangular lattice. Fixed boundary conditions can be set anywhere on the lattice to simulate a number of physical models.
- RADIATION simulates the time evolution of the electric field of an accelerated point charge. Linear, circular, and oscillatory motions with user-defined velocities and near-field to far-field magnifications are displayed as animation sequences.
- AMPERE displays the magnetic field pattern for up to nine coaxial current rings. The position and magnitude of each ring is selected by the student.

A second disk contains MONOPOLE, an animation sequence that simulates the passage of a magnetic monopole through a perfectly conducting ring (superconductor). The frames can be viewed individually or as an animation sequence.

All programs include utilities for printing the screen display on an ImageWriter or for storing it on the disk for later printing.

**Price**
Single User: $24.50



# Modern Physics

## Physics Simulations III

Application
Version 1.0
Introductory Physics

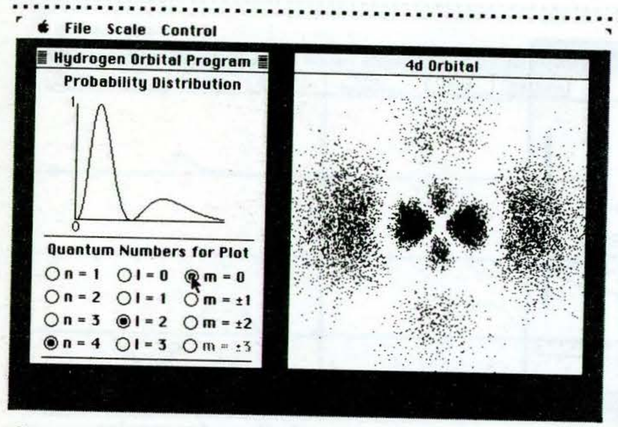
Blas Cabrera
and the Faculty Author Development Program
Stanford University

**System Requirements**

Macintosh computer, minimum 512K, with Finder, version 4.1 or later.

**Description**

Introduces elementary concepts in modern physics through computer simulations and animations. Students can explore the mathematical structure of the physical models.




"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

Seven separate programs are contained on one disk:

- GAS simulates the thermal motion of particles in a box and demonstrates elementary kinetic theory.
- BROWNIAN simulates the random thermal motion of a particle in a one-dimensional potential. The student may select from a range of potentials and temperatures.
- WAVE demonstrates the concepts of group and phase velocity in an animated sequence. The ratio of group to phase velocities is adjustable.
- FOURIER performs the Fourier transform and inverse transform of any user-defined function. Results can be plotted as amplitude versus phase in real and imaginary components.
- HYDROGEN generates electron density plots for each of the quantum states of the hydrogen atom. The n, 1, and m quantum numbers may be selected by the student.
- DIFFRACTION generates density plots for single and double slits and other apertures.
- GINZBURG introduces an elementary model of a superconductor by displaying the coherent quantum phase on a lattice. Fixed boundary conditions can be set.

A second disk contains TRANSITION, an animated sequence showing the semiclassical transition between 2p and 1s states of the hydrogen atom.

All programs include utilities for printing the screen display on an ImageWriter printer or for storing it on the disk for later printing.

**Price**
Single User: $24.50

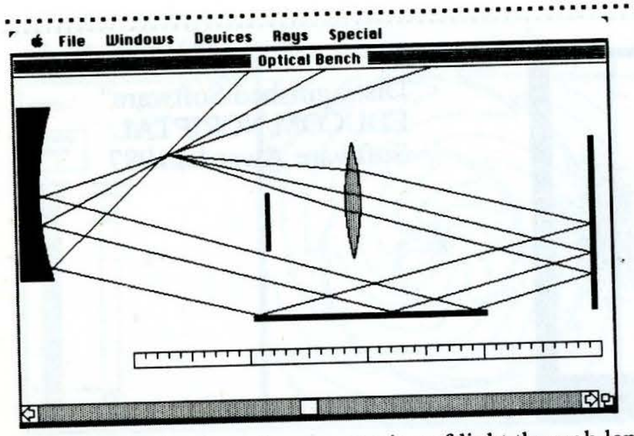
# Optics Lab

Application
Version 1.0
Physics

George Ruppeiner
Physics
New College of the University of South Florida

**System Requirements**
Macintosh computer, minimum 512K, with Finder, version 5.3.

**Description**
A simulation of the propagation of light through user-defined lenses and mirrors.




Optics Lab simulates the propagation of light through lenses and mirrors, and allows for precise on-screen measurements.

A light ray in any uniform material travels in a straight line. When a light ray encounters the boundary between different materials, it will change its direction in accord with the Law of Reflection and the Law of Refraction. Optics Lab applies these rules exactly at any point, without any approximations. Hence, Optics Lab faithfully reproduces defects such as spherical aberration.

Optics Lab supports spherical or flat lenses and mirrors of any size, shape, and index of refraction. Optical devices may be placed anywhere on the optical bench, and the propagation of light rays is simulated starting at any point and going in any direction. Precise numerical measurements are made with a limitless supply of on-screen rulers that may be placed anywhere. The index of refraction of the immersing medium may be changed to simulate, for example, underwater optical systems. Exploration of diverse optical set-ups may be easily simulated.

Optics Lab is intended for both beginning and advanced students of physics.

**Price**
Single User: $14.50

Physics



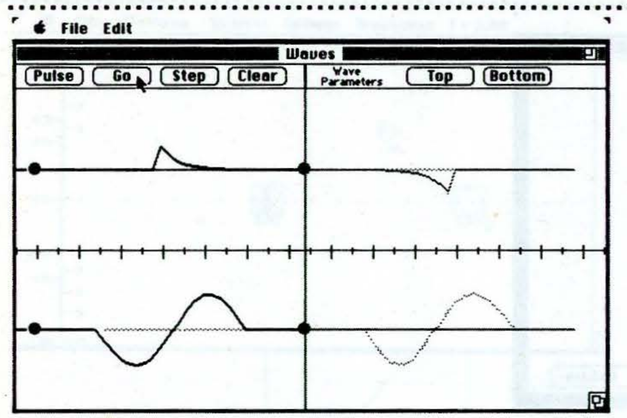
# Physics Modules

Application
Version 1.0
Introductory Physics

Irwin A. Miller
Physics and Atmospheric Science
Drexel University

**System Requirements**
Macintosh computer, minimum Macintosh Plus, with Finder, version 5.5.

**Description**
Animations and simulations of introductory concepts in physics.




This package contains three programs:

• ACCELERATION — Two vehicles, a car and a truck, move along parallel straight paths with constant acceleration. Initial positions, velocities, and accelerations, are entered and the resulting motion is simulated. The time and position at which the vehicles pass are also displayed.

• PROJECTILE — Initial position and velocity of a projectile are set by the user. When launched, the resulting motion is simulated with current values of the position and velocity displayed. Targets are provided and the projectile can be paused during its motion.

• WAVES — The wave motions in two parallel strings are compared. For each string the tension, mass density, and frequency of the impressed disturbance (sinusoidal or sawtooth) can be varied. The ends of the strings can be either set for no reflections or as fixed free ends. Single pulses can also be sent down the string or the initiating end can be "grabbed" with the mouse to simulate an arbitrary disturbance.

All three of the applications are useful to students in exploring these concepts or by instructors as short illustrations during the presentation of the concepts. There is no specific sequence of operations. Each program contains an on-line help index, which explains the items on the screen. Some suggestions and investigations are also included in the help index.

This program will complement any introductory physics text.

**Price**
Single User: $17.00

Physics

# Quantum Mechanics

Application
Version 1.7
Physics

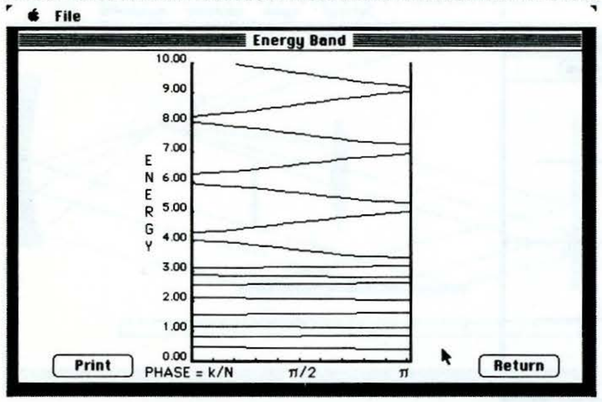
Robert Gilmore
Physics
Drexel University

**System Requirements**

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

**Description**

Performs different types of quantum mechanical calculations for a restricted class of potentials.




The Quantum Mechanics disk contains four programs that perform different types of quantum mechanical calculations for a restricted class of potentials. Each calculation is carried out by solving Schroedinger's equation for a piecewise constant potential. The method of solution involves matching the wave function and its first derivative at each boundary in the piecewise constant potential. The matching is carried out using 2 x 2 transfer matrix methods, which produce a 2 x 2 transfer matrix for the piecewise constant potential. This transfer matrix is computed for a range of energies. The four programs differ in the way the information contained in the transfer matrix is processed to produce the desired physical observables. The four programs are:

- TRANS—computes the transmission probability for a particle of energy incident on a piecewise constant potential barrier.
- EIGEN—computes the energy eigenvalues of a particle in a piecewise constant potential barrier.
- ENBAND—computes the allowed energy eigenvalues of a particle in a one-dimensional periodic lattice.
- DENST—computes the density of states for a particle in a one-dimensional periodic lattice.

All of the output from the programs is in a graphical form.

**Price**
Single User: $17.50

Physics



# Spacetime Software

Tool
Revised 6/88
Special Relativity

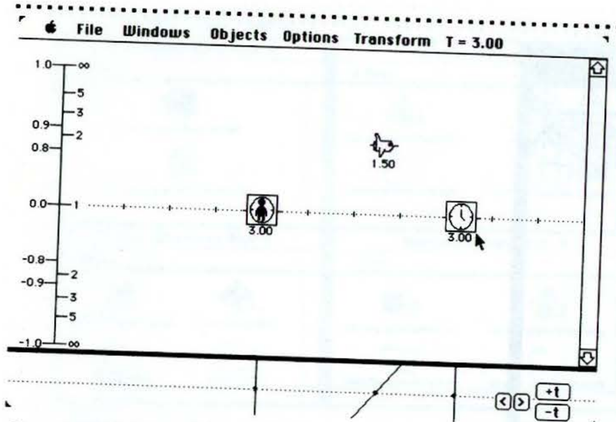
Edwin F. Taylor and Eric Berman
under Project Athena
Massachusetts Institute of Technology

**System Requirements**

Macintosh Computer, minimum 512K, with Finder, version 5.3 or 6.0.

**Description**

Spacetime Software is a set of computer interactive graphics utilities designed to help students visualize and apply results of special relativity.




"Best Physics and Best Tool Software"
EDUCOM/NCRIPTAL
Software Awards, 1988

Use SPACETIME to analyze problems and paradoxes about motion in one spatial dimension. Place rods, clocks, light flashes on the "cosmic superhighway," where different lanes represent different speeds, up to that of light. Step time forward and backward to move objects. Jump from one object to another for a different view. Ride a shuttle that changes lanes. On a spacetime diagram plot events, light cones, invariant hyperbolas; see world lines of objects on the highway. Transform to other frames: study invariant relations between events. Finally split the screen to watch objects move on the highway as their world lines scroll on the spacetime diagram. A table summarizes numerical data on events and objects.

Use COLLISION to analyze relativistic collisions, creations, transformations, decays, and annihilations of particles that move in one or two spatial dimensions. Enter on a table what is known of the mass, energy, and momentum of each incoming and outgoing particle. Ask the program to complete the table. Play the resulting collision as a movie or view a perspective three-dimensional plot of energy vs. x- and y-momentum before and after the interaction. All three displays can be transformed to the rest frame of any massive particle, to the zero-total-momentum frame, or to a frame moving with an arbitrary less-than-light velocity in the two-dimensional spatial plane of the collision.

**Price**
Single User: $25.00
Site License: $300.00
Documentation: $7.50
(Doc. for Site License Only)

Physics

# Hyper-Neuroanatomy

Stackware
Version 2.1
Psychology

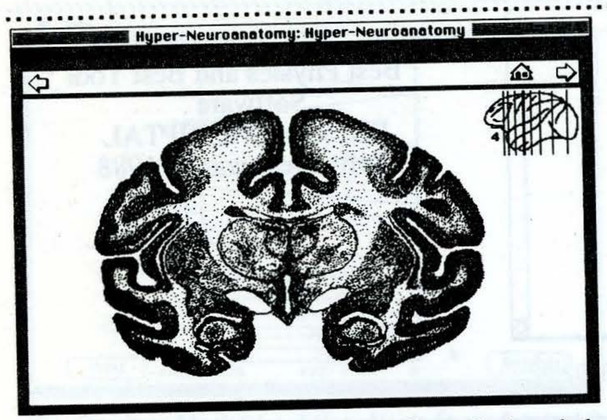
Dr. Victor S. Johnston
Psychology
New Mexico State University

**System Requirements**

Macintosh computer, minimum Macintosh Plus. HyperCard is required; a hard disk or external disk drive is recommended.

**Description**

Designed to teach the basic neuroanatomy of a primate brain, this program allows the user to browse through the brain, organize structures into systems and request anatomical or functional information about any specific structure or system.




Hyper-Neuroanatomy is a four-level HyperCard stack designed to teach the basic neuroanatomy of a primate brain. The program is a useful tool for students of medicine, psychology, or the neurosciences.

The top level of the stack presents the user with the lateral view of a primate brain which may be sectioned at a number of strategic locations in order to reveal the internal structure of the brain at that location. The user may then browse through more specific structures. All relevant structures are named, and the user may obtain further anatomical and/or functional information by selecting the structure names.

The program is designed to be intuitive, and to provide the user with great flexibility in moving between levels. The user's guide provides suggestions on the best approach for quickly developing a three-dimensional mental model of the systems and structures in the primate brain.

**Price**
Single User: $25.00

Psychology



# MacLaboratory for Psychology: Part 1

Application
Version 1.0
Psychology

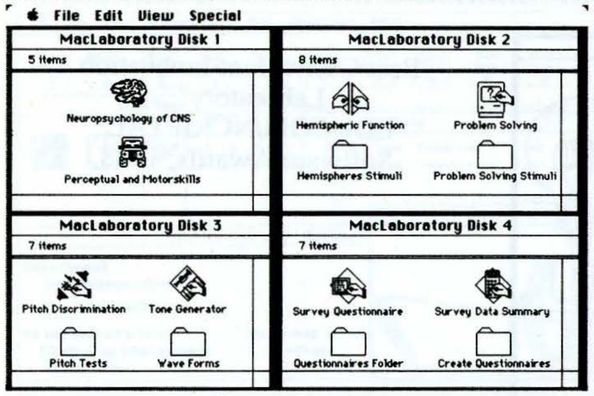
Douglas Chute
Neuropsychology
Drexel University

**System Requirements**

Macintosh computer, minimum Macintosh Plus, Finder 5.5 and System 4.1.

**Description**

MacLaboratory for Psychology: Part 1 includes a number of programs, many of which convert the Macintosh into a research apparatus that can be used throughout the psychology curriculum. Applications that are useful in conducting the lab exercises in the Laboratory Manual (available from McGraw Hill) are also supplied.




"Best Curriculum Innovation - Laboratory"
EDUCOM/NCRIPTAL
Software Awards, 1988

- Perceptual Motor Skills — Various experimental settings permit the study of motor skill learning and eye-hand coordination using tasks such as mirror tracing and pursuit rotor tracking.
- Neuropsychology of CNS — This interactive tutorial illustrates the anatomical and behavior relationships among the major cortical and subcortical structures of the central nervous system.
- Problem Solving — At the level of introductory psychology this application is used to investigate the social interaction of group size with task difficulty. Stimulus files and experimental conditions are readily edited, permitting a number of problem-solving tasks.
- Hemispheric Function — This software permits tachistoscopic presentation of stimuli to any portion of either visual field under accurate and flexible experimental control. Standard Macintosh features allow for the creation of files for a wide variety and type of visual stimuli.
- Pitch Discrimination and Tone Generator — Software for the psychological study of pitch. Wave form, frequency, amplitude, and duration can be modified and arranged into various sets for auditory testing.
- Survey Questionnaires and Survey Data Summary — An application that structures questionnaire files. ResEdit is supported for editing, selecting or sizing windows, and setting up response conditions. Open ended and/or various multiple choice formats may be selected and saved for analysis by the Survey Data Summary application. This application provides frequency tabulations, and means with standard deviations.

All programs that collect laboratory data save the data in tab-delimited text files.

Complete Courseware Documentation, Instructor's Notes, and Laboratory Manual (Chute and Daniel, 1988: McGraw Hill) are available from McGraw-Hill.

**Price**
Single User: $38.00

Psychology

# MacLaboratory for Psychology: Part 2

Application
Version 1.0
Psychology

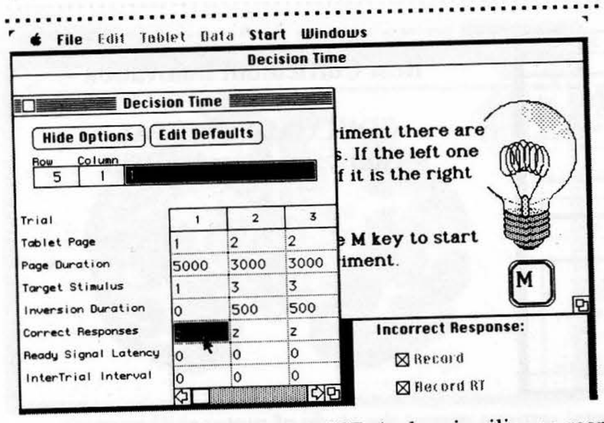
Douglas Chute
Neuropsychology
Drexel University

**System Requirements**

Macintosh computer, minimum Macintosh Plus, Finder 6.0 and System 4.2.

**Description**

MacLaboratory for Psychology: Part 2 includes a simulation program, PolyGraph, useful in teaching principles of classical conditioning, and a research grade authoring program, Reaction Time, which presents stimuli and collects responses with full parameter control.




"Best Curriculum Innovation - Laboratory"
EDUCOM/NCRIPTAL
Software Awards, 1988

• Polygraph — A simulated GSR (galvanic silicone response) which, with appropriate user interaction, can illustrate the orienting response, habituation, classical conditioning, extinction, spontaneous recovery, partial reinforcement, and other concepts pertaining to the psychology of learning. Data on GSR latency, amplitude, and duration are saved in tab-delimited text files.

• Reaction Time — Completely editable verbal and pictographic stimulus sets can be prepared for presentation in various portions of the visual field under precise experimental control. Traditional reaction time paradigms are measured to millisecond accuracy. Data is saved in tab-delimited text files and is readily transportable to analysis software.

Complete Courseware Documentation, Instructor's Notes, and Laboratory Manual are available from McGraw-Hill.

**Price**
Single User: $38.00

Psychology



# MindLab

Tool
Version 2.1
Psychology

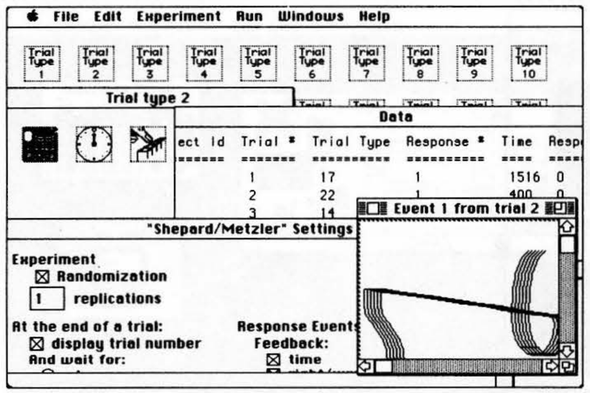
Developer: Blake Meike
Courseware Development Group
Concept: J. Bharucha and J. Baird
Psychology
Dartmouth College

**System Requirements**

Macintosh computer, minimum 512K, and one 800K disk drive.

**Description**

A system for creating, editing, and running cognitive psychology experiments with visual stimuli.




MindLab is a system for creating, editing, and running simple psychology experiments in perception and cognition on the Macintosh. It presents stimuli generated in common graphics programs and records subject behavior. The output can be analyzed in common data analysis programs.

A MindLab experiment consists of a set of trial types, each of which is an ordered series of events. Events can be any of the following: reset clock, show a specified stimulus (picture); wait a specified time, or collect a subject's response. When a response is collected, complete information about it is written to a TEXT output file.

The experimenter can write and save new experiments, and edit existing ones. The whole experiment or any trial can be run while editing to check that it is as desired. MindLab also has on-line help.

MindLab 2.1 is a major revision. New features include faster operation; time, trial number, and response correctness feedback to the subject (if desired); response correctness written to the data file; less cluttered screens and improved window management; cancelling of an experimental run at any time; and far greater fluidity in moving between editing, testing, and running an experiment.

In addition to MindLab, the disk includes two sample experiments, a sample output file, and a sample scrapebook file. A written tutorial, keyed to the sample experiments, is also included.

**Price**
Single User: $8.00

Psychology

# Neuroanatomy Foundations

Stackware
Version 1.0
Biology

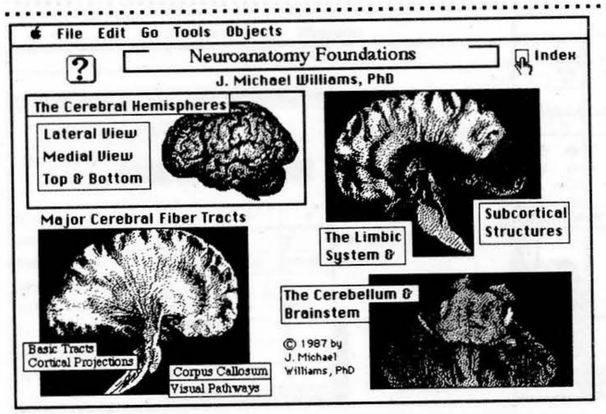
J. Michael Williams
Psychology
Memphis State University

**System Requirements**

Macintosh 512K Enhanced computer, minimum. Atlas is required for the Atlas version (see Authoring Tool section) and HyperCard is required for the HyperCard version.

**Description**

An introductory human neuroanatomy atlas utilizing digitized images of three-dimensional brain dissections. The program is available in either HyperCard or Atlas compatible versions.




Neuroanatomy Foundations is a fundamental introduction to brain anatomy. It is divided into four sections: cerebral hemispheres, cerebellum and brainstem, major fiber tracts, and subcortical structures. Each section contains digitized images, diagrams, and text, comprising a presentation of basic knowledge in each area. The images are composed of three-dimensional dissections and enlargements that dramatically present the architecture of the human brain.

Depending on the version purchased, the student uses either HyperCard, available from authorized Apple dealers, or Atlas, available in the Authoring Tool section of this catalog. Both programs provide an extremely flexible, efficient method for perusing images according to the student's needs and interests. The student simply "clicks" through all sections of the atlas and prints or stores material for reference and note-taking during class or independent study.

This courseware is intended as a supplemental training tool for introductory courses in anatomy and physiology, physiological psychology, human neuropsychology, and neuroanatomy. The atlas also serves as a good general reference work in neuroanatomy.

**Price**
HyperCard: $22.50
Atlas: $22.50

Psychology



# BiblioMania

Application
Version 1.0
Library Skills

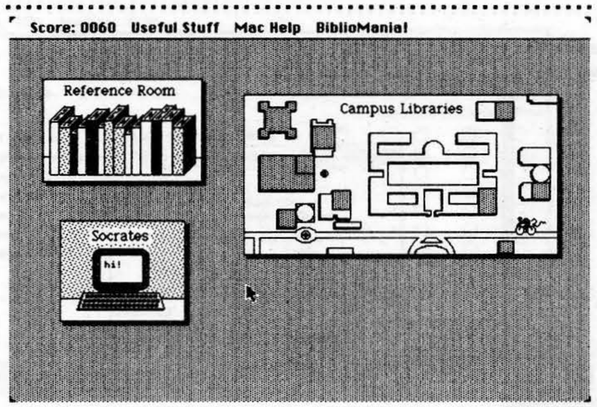
Deborah Murphy
and the Faculty Author Development Program
Stanford University

**System Requirements**

Macintosh computer, minimum 512K.

**Description**

An educational simulation introducing college students to the use of periodicals and other library resources.




BiblioMania looks like a game, but it's actually a Macintosh program to introduce students to Stanford's libraries. Designed to be used without assistance or written materials, BiblioMania has encouraged over 500 students to voluntarily spend 20 minutes learning library skills.

In the BiblioMania simulation, students choose research topics, use Psychological Abstracts or the Reader's Guide to Periodical Literature to identify relevant articles, locate the periodicals using an on-line electronic catalog, and finally retrieve them by going to several of Stanford's libraries. Students who complete the program with a "high score" then get to design a logo to accompany their score on the list of best BiblioManiacs.

BiblioMania provides extensive on-screen help and requires no use of the keyboard. It records statistics on its use, allowing library staff to monitor its effectiveness. If left unattended, BiblioMania will restart itself after two minutes by running an animated cartoon as an attract mode, thus freeing staff from monitoring the game and restarting it manually. Throughout, BiblioMania is light-hearted and easy to learn. Despite the fact that BiblioMania is not required by any course at Stanford, over 2,000 students have tried it, and of those, one-fourth have played the simulation to completion.

BiblioMania is not easily customizable to be specific to campuses other than Stanford's.

**Price**
Single User: $8.50

Research

# BRS Simulator

Application
Version 1.0
Research Training

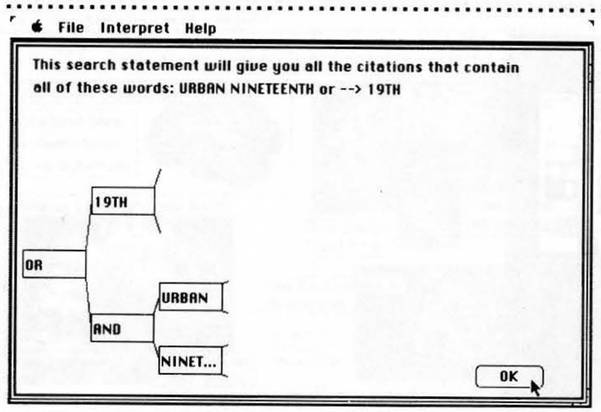
Software Development Group
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

### Description

This program instructs the user on search techniques for the Bibliographic Retrieval Service, and enables the user to practice these techniques prior to using on-line time.




BRS Simulator is designed for use as an introduction to the Bibliographic Retrieval Service (BRS). The program instructs the user on the search techniques for this large data base, and enables the student to practice these techniques easily and cheaply prior to using expensive on-line time.

BRS is a collection of data bases that have been coordinated and made available to the public commercially. This program simulates the BRS environment and allows the user to become proficient in BRS searching procedures at the Macintosh. By learning to conduct independent searches, the user acquires research skills that can be applied to any research topic.

**Price**
Single User: $25.00



# SocStat

Application
Version 2.0
Sociological Statistics

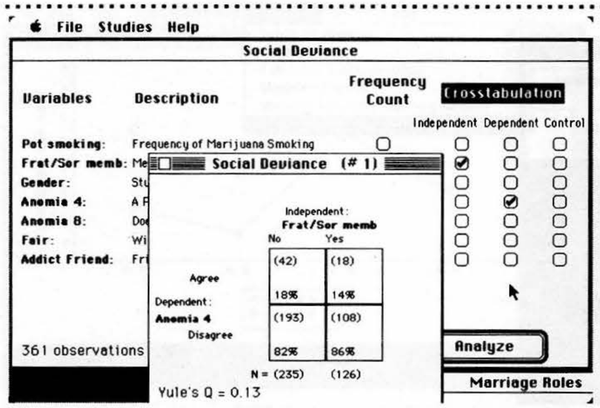
Developers: S. Rogers, S. Maker, J. Ansley, K. Perregaux, Courseware Development Group
Concept: Robert Sokol
Sociology
Dartmouth College

### System Requirements

Macintosh computer, minimum 512K. A system disk is also required.

### Description

A sociology-statistics laboratory on a Macintosh computer.




SocStat is a sociology-statistics laboratory that uses studies prepared from actual sociological surveys. It allows the student to do elementary statistical analyses on the surveys. Each study consists of up to 16,000 observations on up to 10 variables. Each variable may have any of several values (that is, responses by the subjects of the survey).

The student can select a study and perform any number of analyses on it, including absolute and relative-frequency tabulations, cross-tabulations (with dependent, independent, and possible control variables), Yule's Q and Gamma tests, and chi-square tests.

New studies can be created using the companion program SocStudy (see next page).

Version 2.0 has many significant changes: the user interface is far more simple and more modeless; the menus are simpler; the program handles larger studies and is much faster; studies are easily created with SocStudy and are smaller; it is HFS and 128K ROM compatible; there is complete help text; and a new "Change to..." feature allows easy modification of existing analyses.

The distribution disk includes the SocStat program, the SocStudy program (see next page) and six current data sets: Social Norms, Stratification, Social Deviance, Small Groups, Group Influence, and Marriage Roles.

**Price**
Single User: $8.00

# SocStudy

Application
Version 1.0
Sociological Statistics

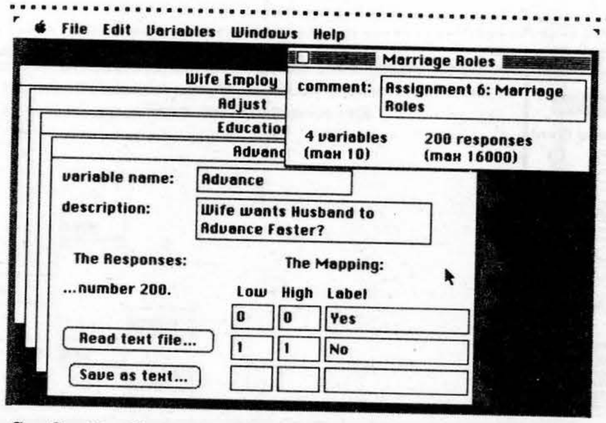
Developer: Steve Maker
Concept: Steve Maker
Courseware Development Group
Dartmouth College

**System Requirements**

Macintosh computer, minimum 512K. A system disk is also required.

**Description**

Creates and edits sociological studies for SocStat.




SocStudy allows an instructor to edit old or create new studies for SocStat, a sociology-statistics laboratory for the Macintosh (see previous page). For new studies, the user creates, on the Macintosh, a set of number files that contain the responses, with one column of ASCII numbers per file. SocStudy reads those files and accepts other input in modeless dialogs (one per variable plus one per study), and creates a new study in SocStat's binary format. Existing studies can be opened and edited in the same manner. The user can also extract responses from existing SocStat Studies and put them into a file of numbers.

Old studies are displayed in their entirety; any part can be changed, and new data can be read in.

New studies, and SocStat Version 2.0, are incompatible with old studies and previous versions of SocStat.

The disk includes SocStudy, the study creator, the SocStat program (see previous page), and the six current studies for SocStat: Social Norms, Stratification, Social Deviance, Small Groups, Group Influence, and Marriage Roles.

Version 1.0 offers improved Help (now printable) and bug fixes.

**Price**
Single User: $8.00

Sociology



# CLR Anova—student version

Application
Version 1.1
Statistics, Psychology, Media and Education

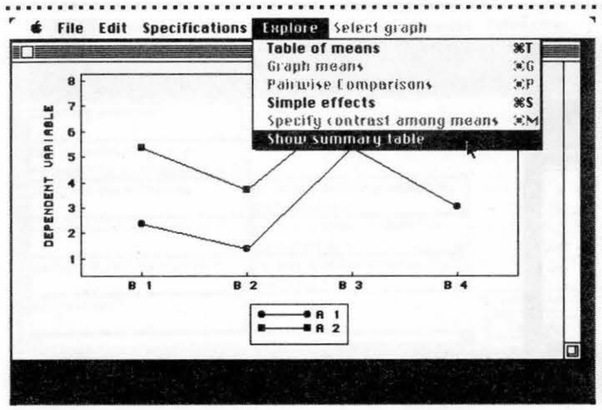
David M. Lane and Brian D. Kluger
Clear Lake Research

**System Requirements**

Macintosh computer, minimum 512K.

**Description**

A program for analysis of variance that plots interaction and computes a variety of follow-up tests. The program also allows repeated measures and unequal n analyses.




The student version of CLR Anova is limited to one-factor and two-factor designs. Plots of interactions can be drawn simply by clicking the interaction on the Analysis of Variance Summary Table and choosing "Graph means" from a menu. Marginal means, pairwise comparisons (Neuman-Keuls, Duncan, Tukey hsd and t-tests), simple effects, and specific contrasts (planned or unplanned) among means can be computed just as easily. Repeated-measures designs and designs with unequal cell n frequencies can be analyzed.

Two editors are included to make data entry easy. One is a desk accessory that allows data to be entered or modified even after CLR Anova has been started. This makes data entry interactive and especially convenient. Data entered using MacWrite, Microsoft File, Multiplan, Excel, and MacTerminal® can also be analyzed. The Macintosh interface, with windows, menus, and dialog boxes, is used throughout. An entire analysis of variance with many follow-up tests can be done with only a few keystrokes, mouse clicks, and choices from menus. Several sample data files are included. Advanced features include the epsilon correction for possible violations of multisample sphericity, and choices of error terms for some simple effects and specific contrasts among means.

**Price**
Single User: $24.00

Statistics

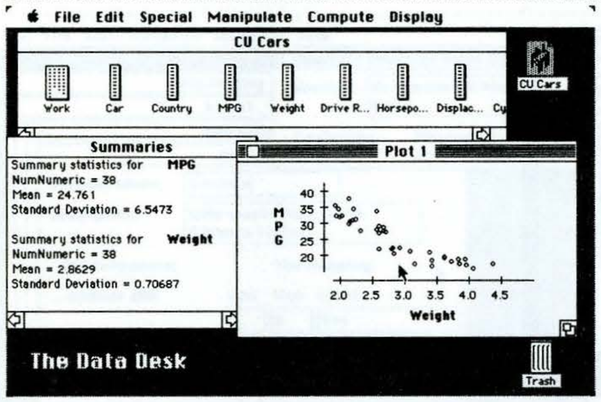
# The Data Desk—student version

Application / Tool
Version 1.11
Statistics, Social Science

Paul Velleman
Social Sciences
Cornell University

**System Requirements**
Macintosh computer, minimum 512K, with Finder, version 5.3.

**Description**
A full-function statistics package with a Finder-like desktop interface. Package includes example data sets and a complete tutorial workbook with exercises.




The Data Desk™ is a statistics package designed to be easy to learn yet powerful. Each variable appears as an icon on a desktop. Icons can be opened for viewing and editing or closed to keep the numbers out of the way so students can concentrate on statistics concepts. The Data Desk includes the statistics capabilities commonly taught in the first full year of statistics, and tools (such as random number generation) designed for teaching concepts of probability and statistics. A single lecture is sufficient to introduce even beginning students to the desktop environment. Students then learn each capability as they need it, using the tutorial examples in the workbook. The Data Desk can be used in courses in statistics, methodology, or in application courses that use statistics.

The package includes a tutorial handbook with more than 200 questions, organized into more than 100 systematic exercises on preformatted tear-out sheets. The exercise data sets are included on the disks. The exercise sheets teach fundamental concepts of statistics and ease the transition from mainframe computing for courses that once asked students to "hand in your output."

This student version of Data Desk is restricted to 15 real-data variables and about 1,000 total numbers.

**Price**
Single User: $38.00

Statistics



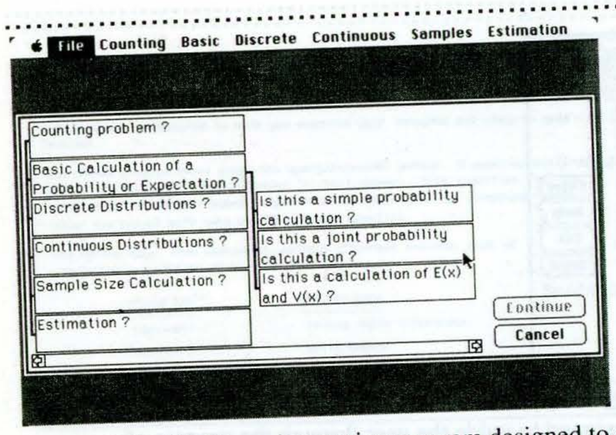
# STAT HELPER I

Application
Version 2.2
Business Statistics

Dennis Dunn and Mary Ann Atkinson
Quantitative Methods
Drexel University

**System Requirements**
Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

**Description**
An interactive program designed to guide the user through the process of statistical problem solving. The Instructor's version allows the user to create word problems that can be assigned to students.




STAT HELPER I is an interactive program designed to guide the user through the process of statistical problem solving. It differs from many other statistical software packages in that it does not allow the manipulation of raw data.

The basic concept behind this program is the notion that problem solving need not be a mysterious, intuitive process. Statisticians approach problems by asking a sequence of fairly simple questions and then identifying or classifying a problem. Once this process is completed, information that is hidden in the wording of the problem must be organized.

The heart of the software is the Decision Tree, which leads the user through the problem identification phase. The user is able to work through self-correcting word problems in the Decision Tree and is guided to the correct answers.

The goals of this program are to help students learn to structure the way they read problems, to identify key elements of problems, and to recognize the types of problems that arise in statistics.

**Price**
Instructor: $17.00
Student: $14.00

Statistics

# STAT HELPER II

Application
Version 1.11
Business Statistics

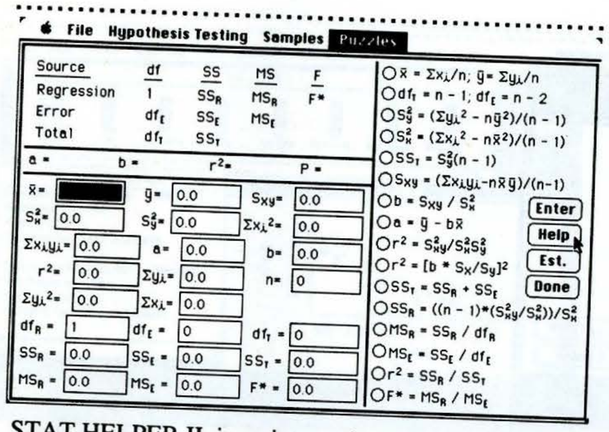
Dennis Dunn and Mary Ann Atkinson
Quantitative Methods
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, and one 800K disk drive.

### Description

An interactive tool used to guide students through the process of solving higher level statistics problems. The Instructor's version allows the user to create word problems that can be assigned to students.




STAT HELPER II is an interactive program designed to guide the user through the process of statistical problem solving. Unlike other statistics programs, this program does not calculate but guides students in how to do Anova, Simple Regression, Means, Proportions, and Hypothesis Testing. The sample problems are self-correcting, and a Decision Tree is used to guide students through the problem.

The basic concept behind this program is the notion that problem solving need not be a mysterious, intuitive process. Statisticians approach problems by asking a sequence of fairly simple questions and then identifying or classifying a problem. Once this process is completed, information that is hidden in the wording of the problem must be organized.

The heart of the software is the Decision Tree, which leads the user through the problem identification phase. The user is able to work through self-correcting word problems in the Decision Tree and is guided to the correct answers.

The goals of this program are to help students learn to structure the way they read problems, to identify key elements of problems, and to recognize the types of problems that arise in statistics.

### Price

Instructor: $17.00
Student: $14.00



# Create

Application
Version 1.0
English Composition

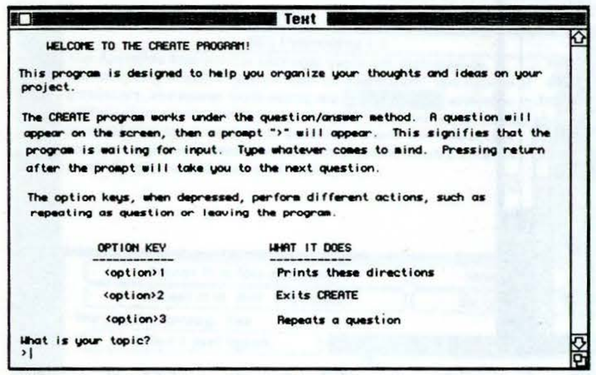
Valarie Arms
Humanities and Communications
Drexel University

### System Requirements

Macintosh computer, minimum 128K, with Finder, version 4.1 or 5.3.

### Description

Create is a pre-writing program designed to stimulate ideas about the direction a document should take to achieve its purpose. It is useful to narrow a topic, focus on a specific audience, and determine the purpose of the document.




Create is a writing program with two major components. The first is a pre-writing component designed to stimulate ideas about the direction of a document and to aid the writer in narrowing a topic and focusing on specifically what will be written about. In addition, the program asks the user to keep in mind the audience for which the document is being written and the purpose the writer has in mind for producing the piece.

The second component, Recreate, is used after the document is written—for revising and rewriting. The exercise aids the writer in analyzing his/her writing and determining if, in fact, the goals of the document were achieved and if the proper focus was maintained throughout the entire document.

The programs have a question-and-answer format and information generated may be printed out for closer or later analysis. The user responds to the screen prompts to complete either exercise. This writing program may be used by writers of any grade or skill level.

This program does not conform to the standard Macintosh interface guidelines yet it is very easy to use.

### Price

Single User: $8.00

# Idealiner Jr.

Application
Version 2.0
Writing

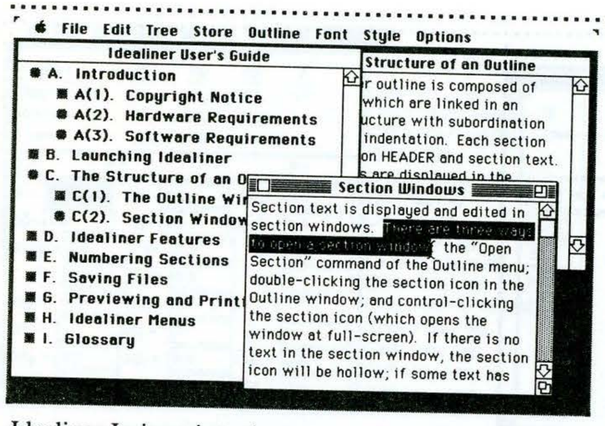
Clifford Story
Jimmy Mac Software

### System Requirements

Macintosh computer, minimum 128K.

### Description

A text outliner that can be used to organize and write term papers, legal briefs, or any kind of structured or unstructured document.




Idealiner Jr. is an introductory version of Idealiner. It provides most of the functions of Idealiner but omits some of the flexibility.

Idealiner replaces the skeleton outline and box of index cards that are so familiar to the authors of term papers. The skeleton outline now appears in an outline window. The user can add and delete topics in the outline window, cut and paste topics or groups of topics. Subtopics may be hidden or expanded to view the outline with whatever level of detail is desired.

The data on the cards goes in separate section windows. The usual Macintosh editing tools are available in the section windows, plus Textstores, which arbitrarily provide many editable Clipboards.

Idealiner Jr. also allows the user to open a plain text file and copy from it; to save an outline as an outline or as text, and to print in a variety of formats.

The Idealiner Jr. package includes an on-line tutorial.

### Price

Single User: $10.00



# Spelling Champion

Tool
Version 2.3
Writing

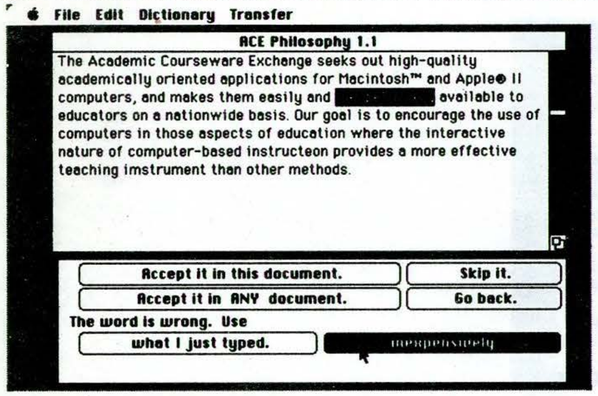
Champion Swiftware

### System Requirements

Macintosh computer, minimum 128K. Works with MacWrite, Microsoft Word (before version 3.0), and text files.

### Description

A fast spelling checker for MacWrite and Microsoft Word.




Spelling Champion is a very fast, easy-to-use spelling checker for MacWrite version 4.5 and Microsoft Word. Spelling Champion has a dictionary of 125,000 words to which the user can add a virtually unlimited number of words. Entries may also be deleted. Documents of any size can be checked. Large documents are automatically checked in sections. While checking documents, the user may edit the displayed text to make changes or correct typos. When spelling errors are found, the most likely correct spellings are presented.

### Price

Single User: $28.00

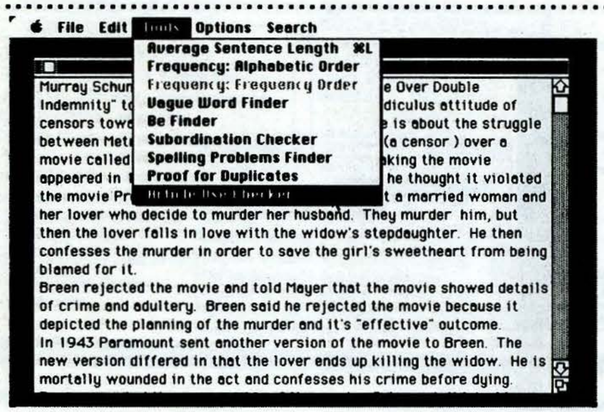
# Tools for Writers

Application
Version 1.50
English Composition

Eva M. Thury
English
Drexel University

**System Requirements**
Macintosh computer, minimum 128K.

**Description**
Allows students to perform checks and diagnostic tests on their own writing.




Tools for Writers™ allows students to perform checks and diagnostic tests on their own writing. It shows students' problems with spelling, grammar, and usage. In addition, it helps students with paragraphing, diction, subordination, and the use of the passive voice.

Tools for Writers is not a single drill or exercise. It can be used in a variety of ways to help writers develop and refine their writing. Students can use it with or without an instructor.

Tools for Writers includes a series of eight lessons: Writing Stronger Paragraphs; Focusing on Your Topic; Eliminating Weak Verbs; Avoiding Vague Words; Cleaning Your Writing of Extra, Empty Words; Using Strong Verbs; and Writing More Interesting Sentences. Each lesson explains a writing problem, shows how to use Tools for Writers to locate occurrences of that problem, and gives examples of problem sentences and revisions that improve them. The lessons can be assigned to students individually, or can form the basis of a composition course.

**Price**
Single User: $17.00

# Test and Questionnaire Construction Kit

Tool
Version 2.0
Testing

Scott T. Meier
Counseling and Educational Psychology
State University of New York at Buffalo

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3; two disk drives preferred. A printer is optional.

**Description**

A comprehensive program that enables faculty, students, and staff to create and score computer-generated tests.

Test and Questionnaire Construction Kit (T-Q Kit) is a comprehensive program that allows the user to create, revise, administer, score, and print tests and questionnaires. The program is useful to faculty, undergraduate students, and graduate students for testing courses or creating questionnaires and surveys. Other university professionals who administer and score tests, such as those in student affairs, will also find T-Q Kit useful.

T-Q Kit can handle up to 600 items and 30 subscales per test. True/false, Likert scales, multiple-choice, and short essay responses are possible. The user may design his or her own response format. Additional features include a password for test security, up to two display pages of instructions per test, and the ability to display all or individual test responses.

**Price**

Single User: $28.50
Site License: $360.00
Documentation: $5.50
(Doc. for Site License Only)

# Test Genie

Tool
Version 4.0
Test Construction

James D. Evans
Psychology
Lindenwood College

**System Requirements**

Apple II Computer, minimum 64k, with ProDOS. A printer and an 80-column text card are required. An Apple II and II Plus must have a Videx-compatible text card.

**Description**

Test Genie is a powerful test-item editor and test generation module that takes a dynamic data base approach to construction of classroom exams and quizzes.

Test Genie is a sophisticated software package that efficiently formats and prints both objective (for example, multiple-choice and true-false) and essay tests. During test printing, questions can be selected numerically, sequentially (with prompts), or randomly. The user has complete control over the number of items printed from each file, the spacing between essay-type questions, and the number of test versions generated. The program also prints instructions, answer keys, and answer sheets.

The test-item editor is a powerful word processor that enables the user to easily type, edit, delete, and add test questions and store them on disk as standard text files. These files are compatible with most spelling checker programs. Large test-item data bases can be conveniently created and managed; rather than retyping tests each term, the user simply selects items from the established data bases.

A utilities module enables the user to issue ProDOS® file commands, configure the programs to his or her system, and convert AppleWorks® files to the Test Genie format.

All of the software operates in the 80-column video mode, is menu driven, and includes error trapping and recovery. A 75-page manual contains step-by-step instructions.

**Price**
Single User: $23.00



# Trial Quiz

Tool
Version 1.0
General Use

Stephen L. Lowe
Chemistry
Minot State College

**System Requirements**

Apple II computer, minimum 64K, with Applesoft BASIC; two disk drives are needed for the instructor.

**Description**

Programs for creating practice quizzes for students to use as a study aid.

Instructors in any field can use Trial Quiz to create a practice multiple-choice quiz with wrong-answer help messages for their students. When the computer is turned on, the quiz runs automatically. The questions are displayed, the user attempts to answer them, and help messages are displayed when the questions are answered incorrectly. The system is designed to be user-friendly for students and for the instructor who creates the quizzes.

All programs necessary to create and run quizzes are included in this package.

**Price**
Single User: $23.00

# The Commodity Trader

Application
Version 1.0
Business, Economics, Finance, and Marketing

Adrian Vance
AV Systems, Inc.

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3, and two disk drives.

**Description**

A professional commodity future delivery trading program system with one year of real data files, including the 23 contracts known to trend in time.

This is a complete future delivery contract commodity trading system, including an accounting program to manage your funds. Based on the pioneering work of Frank Hockheimer of Merrill, Lynch, Pierce, Fenner and Smith, this system has gone beyond his studies, and explores how computers may be used advantageously. Designed to stand alone The Commodity Trader does not require an expensive wire service. The system includes a sample one-year data disk.

One of the great strengths of this system is its graphic displays. Not only is it able to handle massive amounts of data and perform complicated analyses, it also plots the results attractively. The various systems plot data in a variety of ways, generate and display moving averages, perform graphic math analyses, and make predictions. Complete data entry and editing programs are also included. The 125-page manual contains complete program instructions and listings, so the user can customize the system to meet specific requirements.

**Price**
Single User: $32.00
Site License: $500.00
Documentation: $13.00
(Doc. for Site License Only)

Business



# Financial Analysis Tools

Template
Version 2.0
Finance

Stephen M. Stern
Finance and Banking
Southeastern University

**System Requirements**

Apple IIe, IIc, or IIGS® computer, minimum 128K, with ProDOS® and AppleWorks®.

**Description**

A template for students who are interested in mastering applications of spreadsheets for financial analysis.

Financial Analysis Tools provides the student with a phased development of spreadsheet applications for financial analysis. Complete spreadsheets are provided to compute net present value with varying cash flows, eight common depreciation schedules, five-year financial statement analysis, and the tax liabilities of individuals and corporations under both the Tax Reform Act of 1986 and earlier tax legislation.

Additional spreadsheets are provided for application to specific financial analysis problems, including assessment of financial ratios, source and use of funds, breakeven analysis and operating leverage, bond valuation, capital budgeting, earnings per share, and capital structure and financial leverage. Application programs are provided to perform linear regression analysis, and calculate annuities and compound values.

Financial Analysis Tools follows a phased development pattern. For certain spreadsheets, the student merely enters data. As the student progresses, an increasingly larger proportion of the spreadsheet must be developed.

A 58 page manual provides step-by-step instructions. Highlights of the Tax Reform Act of 1986 are discussed. Each spreadsheet has on-screen instructions and is illustrated with a sample problem. The Financial Analysis spreadsheet provides a five-year income statement, balance sheet, ratio analyses, and indexed and common-sized financial statements—a good basis for a term paper. The spreadsheets are keyed to leading finance texts.

**Price**
Single User: $16.00

Business

# Simulating the Great Depression

Application
Version 1.0
Economics

William P. Yoke
Economics
Duke University

**System Requirements**

Apple II computer, minimum 128K, with DOS 3.1.

**Description**

A detailed model of the United States economy from 1929 to 1933, with simulation experiments corresponding to exogenous policy variables.

Simulating the Great Depression is a model of the economy from 1929 through 1933. Equations underlying the model are accessible, with explanation of log-linear regression. The model's fit for the period 1929 through 1933 are displayed graphically, with data tables for such variables as nominal GNP, price level, unemployment rate, M1 money stock, ratio of currency to demand deposits, and bank failure rate. Various simulation experiments are possible, allowing students to view the effect predicted by varying exogeneous policy variables in the model, such as the discount rate, the monetary base, federal expenditures, exports, and housing supply. A large quarterly data set is included.

The Anderson-Butkiewicz article, "Money, Spending, and the Great Depression," is reprinted in the manual with permission.

**Price**
Single User: $23.00
Site License: $400.00
Documentation: $6.50
(Doc. for Site License Only)



# BASIC RAM Database

Application
Version 1.0
Computer Science

Adrian Vance
AV Systems, Inc.

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3, and one disk drive.

**Description**

A teaching data base system that works entirely in random access memory (RAM) for simplicity, convenience, and speed. The manual includes full program listings and line-by-line explanations where necessary.

One of the largest classes of computer programs, data bases include all mailing list and inventory programs, some accounting programs, and many others. Data base programs allow the user to input and recall data. The manner in which data base programs recall data and how they search for data is variable, but the basic method is direct comparison. Such work is most easily and quickly done using random access memory (RAM). As well, it is most easily understood when done in BASIC rather than in the disk operating system. As a result, BASIC RAM Database is an ideal teaching program with program lines explained where necessary. The 72-page manual is comprehensive.

**Price**
Single User: $30.00
Site License: $500.00
Documentation: $8.50
(Doc. for Site License Only)

# The Big Apple

Application
Version 1.0
Compressed Data Systems and Computer Science

Adrian Vance
AV Systems, Inc.

**System Requirements**
Apple II computer, minimum 48K, with DOS 3.3, and one disk drive.

**Description**
A study of data-compression techniques in Applesoft BASIC.

"How to do big jobs in small computers" is the subtitle and most succinct summary of the objective of this program. The package displays a variety of methods to allow Apple II single disk systems to catalog up to 1,250 data files, with a 20-word description of each; build a data base with up to 16,000 magazine articles and 30,000 photographs; or create a mailing list with up to 6,000 entries.

The work begins with an overview of the eleven data-compression methods found in the literature. It then explains the T.A.P.I.T. Classified Data System used to put up to 30,000 records on a single Apple II disk. All of the programs developed for this package are found on the disk, and are fully explained in the 92-page manual.

The package then moves on to the RAM Word List systems, which use two-byte disk records to represent words stored in RAM. This technique allows a single Apple II data disk to store over 65,000 (in most applications, the disk will also carry the operating program and vocabulary list, so the number of words stored will be substantially fewer).

The final section deals with picture compression using a system first developed by David Lubar and subsequently improved upon by Kenneth M. Haley.

**Price**
Single User: $30.00
Site License: $500.00
Documentation: $10.00
(Doc. for Site License Only)



# Ceemac

Application / Tool
Version 1.6
Motion Graphics

Brooke W. Boering
Vagabondo Enterprises

**System Requirements**
Apple II computer, minimum 64K, with DOS 3.3.

**Description**
A visual composition system and language for creating dynamic, abstract entertainment graphics.

Ceemac is a visual composition system and programming language that generates abstract, animated video graphics. It teaches construction of iterative, algorithmic sequences, and provides immediate feedback to students.

The Ceemac programming language supports most graphic primitives (lines, rectangles, splines, dots, shapes, and so on), plus many unique features, such as built-in symmetry, following erase, rotations, and scaling. Editing protocol is easily learned, and work is instantly validated through execution of the "visual scores" by a fast, optimized interpreter. Working with Ceemac has been described as a "trial and WOW" experience, because of the rapid interaction between the editing and execution modes.

Since its appearance in 1982 as a commercial software package, Ceemac has gained cult-like status at colleges such as Northern Illinois, Virginia Commonwealth, and Franklin Pierce. Its unique approach to motion graphics demonstrates the complementary nature of computers and art.

**Price**
Single User: $13.00

# Curriculum Comparer

Application
Revised 1987
Curriculum Instruction and Education

Jim Kelly
Mathematics Information Systems

**System Requirements**
Apple II computer, minimum 48K, with DOS 3.3.

**Description**
Examination of eight top-selling mathematics textbook series (K–8th grade).

Curriculum Comparer provides information on 1,000 commonly used elementary and secondary school mathematics terms that are contained in eight K–8th grade mathematics textbook series. The data base contains over 40,000 pieces of information. The disk provides information on which textbooks contain the terms, what pages they are on, the grade level of the textbook, and how the terms are used. The reviewing criteria that are used are outlined in the documentation.

The information is displayed in an unabridged scope and sequence format, with all 72 textbooks displayed at the same time so that comparisons and content distribution patterns can be seen easily. The user can track individual content items very easily with Comparer. The information can be printed on most standard printers (and in total would yield 320 pages).

The eight textbook series used are the 1987 editions from: Silver Burdett; Scott, Foresman; Holt, Rinehart & Winston; Laidlaw Brothers; Macmillan; McGraw-Hill; Charles Merrill; and Open Court Publishing (1985 edition).

The Applesoft program is listable, and the information files are random-access text files.

**Price**
Single User: $12.50
Site License: $1,000.00
Documentation: $4.00
(Doc. for Site License Only)



# TouchType

Application
Version 1.0
Typing

J. Wood and A. Thompson
University of California, Berkeley

**System Requirements**
Apple II computer, minimum 64K, with DOS 3.3.

**Description**
A tool for beginning typists, and for typists who wish to improve their typing speed and accuracy.

TouchType is easy to use and gives the learner control over a variety of learning activities. It includes two programs: Beginning and Advanced TouchType. Both possess many special features, including percentage accuracy reports, custom lessons (specialized business applications, other languages, hardware-specific keys, bridges to word-processing software), lesson selector, speed testing, multilevel typing games, and variable on-screen help messages.

The screen displays a keyboard above a drawing of two hands. Both the keyboard and the hands are color-coded. The line of characters you are to type appears across the top of the screen. As you type, both the character to be typed and the correct finger to use flash. When you correctly type the character, the next character and finger flash. Thus, to type correctly, you look at the screen without looking down at the keyboard.

**Price**
Single User: $20.00
Site License: $800.00
Documentation: $5.50
(Doc. for Site License Only)

# Area Measurement & Runoff Computation

Application
Version 1.0
Landscape Architecture

Timothy R. Day
Landscape Architecture
California State Polytechnic University

**System Requirements**

Apple IIe computer, minimum 64K, with DOS 3.3, and a monochrome monitor.

**Description**

A tool to examine how land development affects the quantity of surface runoff from a vacant site using the rational formula Q = ACI.

The purpose of this program is to introduce the student to the concept of computer assisted grading design. Many professional engineering and landscape architecture offices use micro computers to help with routine tasks such as earth volume computation and cost estimating.

A common application of micro computers is the preparation of grading plans. Before such a plan can be prepared, a comprehensive drainage plan must be determined. The purpose of this tutorial is to assist the student in examining how development in any form affects the quantity of surface runoff from a vacant site.

With this program a problem can be completed all at once or in stages. At the beginning of each section, the user is asked if the pertinent calculation has already been done. If the answer is yes, then the user is asked to enter the number and is passed on to the next section.

This program should be used only by students and others who have been adequately introduced to the subject of drainage and earth grading.

**Price**
Single User: $11.00



# Contour Familiarization Tutorial

Application
Version 1.0
Landscape Architecture

Timothy R. Day
Landscape Architecture
California State Polytechnic University

**System Requirements**

Apple IIe computer, minimum 64K, with DOS 3.3, and a monochrome monitor.

**Description**

An interactive program that assists students in developing a good mental catalog of contour "signatures" as they relate to roads and associated structures such as curbs, sidewalks, and drainage swales.

The purpose of this program is to introduce the student to the concept of computer assisted grading design. Many professional engineering and landscape architecture offices use micro computers and programs to help with the routine tasks such as earth-volume computation and cost estimating.

Another application of micro computers is the preparation of grading plans. Two components related to the documentation of a grading plan are contours (isolines representing points of equal elevation above or below a given point) and spot elevations. This program is designed to allow the student to develop a good mental catalog through repetition of contour "signatures" as they relate to roads and associated structures such as curbs, sidewalks and drainage swales. It also allows for the calculation of spot elevations needed to manually construct contours across these surfaces.

This program should be used only by students and others who have been adequately introduced to the subject of contours and earth grading. The program has been tested and used in landscape architecture courses related to earth grading and site analysis.

**Price**
Single User: $11.00

# Apple Grader

Application
Version 3.0
Education

Adrian Vance
AV Systems, Inc.

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3 and one or two disk drives.

**Description**

A convenient gradebook system with a capacity of up to nine classes with 90 grades per class using a one-drive computer system or an unlimited capacity using a two-drive system.

The Apple Grader™ was designed to be the finest computerized gradebook available. The specifications of all other gradebook systems were compiled and summarized. By designing a faster and better method of handling and recording grades in the computer and on the disk, the developers were able to exceed all of the others' specifications significantly.

The Apple Grader produces excellent graphics on the screen and complete paper hard-copy records at any time. Scores may be input as percentages, letter grades, or the numerators of fractions. The statistical analyses are understandable and meaningful. The manual is clear and complete.

The first version was released in 1985 and was used by 300 teachers and 30 reviewers. Many of their suggestions were incorporated in versions 2.0 and 2.1. Version 3.0 has several new features, including an unlimited capacity. The original program was reviewed in Booklist Magazine's January 1, 1986 issue (a review in Booklist constitutes a recommendation by the American Library Association's professional staff).

**Price**

Single User: $20.00
Site License: $500.00
Documentation: $7.00
(Doc. for Site License Only)



# Gradebook II

Application
Version 6.1
Grade Analysis and Recording

Charles D. Brown
Colorado University

**System Requirements**

Apple II computer, minimum 64K, with DOS 3.3.

**Description**

A full-featured grade analysis and recording program designed for simplicity of use.

Gradebook II can process up to 60 sets of homework, 60 quizzes, and three major tests for as many as 200 students per class and any number of classes. Final course grades are calculated based on the weight given for homework, quizzes, and each major test. You can predict final course grades based on current performance, evaluate grades statistically, and rank students based on any major test grade or on the course grade. The software alphabetizes student rolls and handles course adds and drops. The option of password protection of grade files is also available. Grades can be changed at any time; Gradebook II will correct the averages automatically. Printable reports include individual performance summaries, class grade records, all homework grades, all quiz grades, student rosters, posting lists, and student rank lists.

**Price**

Single User: $38.00
Site License: $450.00
Documentation: $5.50
(Doc. for Site License Only)

# Drinking and Not Drinking

Application
Developed 1986
Substance Abuse Education

Barbara Thomas
Substance Abuse Education, Inc.

**System Requirements**

Apple II computer, minimum 64K, with one disk drive.

**Description**

First in a series of five computer-assisted instruction (CAI) programs designed to augment strategies for the prevention of substance abuse. This program includes facts about drinking and the effects of alcohol.

This program is menu-driven and consists of five sections. The first part, Facts About Drinking, is a self-test consisting of 20 true/false statements. Feedback for each question includes whether or not the answer was correct, the correct answer, and the rationale for it. The student's score is given at the end.

The second section invites students to type in questions about alcohol or other drugs. The teacher, school nurse, or counselor can print out these questions and plan ways of answering them.

The third section is a tutorial that relies heavily on graphics to portray alcohol as a depressant drug and to explain and illustrate physiological, psychological, and sociocultural aspects of alcohol use and abuse. Students also learn about the factors that promote the use of beverage alcohol and alternatives for meeting those needs.

The last section is a drill-and-practice lesson consisting of 18 key terms and definitions.

**Price**
Single User: $30.00
Site License: $1,000.00
Documentation: $3.50
(Doc. for Site License Only)



# Keep Off the Grass

Application
Developed 1984, updated 1986
Substance Abuse Education,
Sociology, and Health Science

Barbara Thomas
Substance Abuse Education, Inc.

**System Requirements**

Apple II computer, minimum 64K, with one disk drive.

**Description**

Second in a series of five computer-assisted instruction (CAI) programs designed to augment strategies for the prevention of substance abuse. This program provides information on the use and abuse of marijuana.

Marijuana use has increased 30-fold in the last 20 years, making it the most widely used illegal drug in America.

The first section is a brief (ten-question) self-test. Items cover the topics of what marijuana is, what it does to the human biological systems, and its potential for abuse.

The second section is a drill-and-practice session on key terms and definitions. Any or all of the 25 terms can be selected in any order. The third section, the tutorial, explains what marijuana is, how it differs from hashish and hash oil, and the reason for its variations in strength. Graphics are used heavily to describe the action of marijuana on the body. Reliable indicators of marijuana use are also identified and described. Tolerance, the development of dependence, and addiction are explained. The tutorial ends with exercises in decision making based on knowledge of alternatives and consequences.

Finally, a game, called "Fact or Fiction," can be played by two players or by one player against the computer.

**Price**
Single User: $30.00
Site License: $1,000.00
Documentation: $3.50
(Doc. for Site License Only)

# Introduction to Psychoactive Drugs

Application
Developed 1984, updated 1986
Substance Abuse Education,
Sociology, and Health Science

Barbara Thomas
Substance Abuse Education, Inc.

**System Requirements**

Apple II computer, minimum 64K, with one disk drive.

**Description**

Third in a series of five computer-assisted instruction (CAI) programs designed to augment strategies for the prevention of substance abuse. This program gives an introduction to psychoactive drugs, including cocaine.

This program consists of three tutorials and a self-test. Computer graphics illustrate concepts related to the use and effects of cocaine and other psychoactive drugs. The program requires the student to answer questions throughout the tutorials. These answers are judged, and positive reinforcement is given for both correct and incorrect answers. Results of the self-test help the learner decide whether to repeat certain sections.

**Price**
Single User: $30.00
Site License: $1,000.00
Documentation: $4.00
(Doc. for Site License Only)



# Six Classes of Psychoactive Drugs

Application
Developed 1984, updated 1986
Substance Abuse Education,
Sociology, and Health Science

Barbara Thomas
Substance Abuse Education, Inc.

**System Requirements**

Apple II computer, minimum 64K, with one disk drive.

**Description**

Fourth in a series of five computer-assisted instruction (CAI) programs designed to augment strategies for the prevention of substance abuse. This program covers the six classes of psychoactive drugs, including LSD and heroin.

This program consists of six tutorials about LSD, heroin, coca, amphetamines, barbiturates, hallucinogens, opiates, and volatile inhalants. Each one provides the user with glossaries of terms and definitions; information about the drug's class, structure, and route of absorption; physiological and psychological effects; and the major kinds of use or misuse of the drugs. The seventh section is a self-test that includes 15 short-answer questions.

The final section is a game called "Lights Out." The game may be played by two players or by one player against the computer. Each player starts with ten lights on, and must distribute ten questions among the six classes of psychoactive drugs. The questions in a category must be answered correctly before the player can move on to the next category. Each time a question is answered correctly, the light corresponding to that question starts blinking. When all of one player's lights are blinking, the opponent chooses a category for that player's next question. If this question is answered correctly, all of the player's lights go out, and he or she wins. If the question is missed, play continues with each player answering questions in turn until someone's lights go out. All questions are in true/false format.

**Price**
Single User: $30.00
Site License: $1,000.00
Documentation: $500.00
(Doc. for Site License Only)

# Substance Abuse Data Base

Application
Developed 1986
Substance Abuse Education, Sociology, and Health Science

Lee Willoughby
Substance Abuse Education, Inc.

**System Requirements**

Apple II computer, minimum 64K, with one disk drive.

**Description**

Fifth in a series of five computer-assisted instruction (CAI) programs designed to augment strategies for the prevention of substance abuse.

The Substance Abuse Data Base contains contact information on dozens of substance abuse organizations. The data base is designed so additional information and resources can be added—for example, names, addresses, and phone numbers of local support groups and other national organizations.

**Price**

Single User: $30.00
Site License: $1,000.00
Documentation: $3.50
(Doc. for Site License Only)



# 50 Questions About Cocaine

Application
Version 1.1
Health Science

Scott T. Meier and Jeffrey Bates
Counseling and Educational Psychology
State University of New York at Buffalo

**System Requirements**

Apple II computer series, minimum 48K, with DOS 3.3.

**Description**

A computer game that helps teach basic concepts and stimulate discussions about cocaine.

50 Questions About Cocaine is a microcomputer-based quiz that teaches basic concepts about cocaine. This program is intended as an instructional device and as a stimulus for discussion and counseling. Classrooms, health education fairs, and waiting rooms of clinics and counseling centers are all possible sites for use of this program. It combines traditional drug information with the innovative medium of the computer and presents drug information through the computer game approach. Individualized feedback is emphasized through such methods as game scores and explanation of all answers. The program can be employed with individuals or in small groups.

**Price**

Single User: $19.50

# American History Adventure

Application
Version 1.1
History

Carl K. Wogomon and M. P. Kay
Revised by G. David Garson

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.1.

**Description**

An entertaining way of reviewing facts based on ten periods (1513–1986) of American history.

The American History Adventure program is a game-format quiz on ten periods of American history. The user moves on a grid playing board, seeking both the door back to the present and the key that opens it. At various points, American history questions must be answered to proceed. Question formats are multiple choice, true/false, and fill-in-the-blank.

Questions can be modified and entirely new quizzes can be created by the instructor.

**Price**

Single User: $23.00
Site License: $300.00
Documentation: $5.50
(Doc. for Site License Only)



# Comma Sense

Application
Version 1.0
English Grammar

Richard L. Berkey
English
Mesa College

**System Requirements**

Apple II computer, minimum 64K, with one disk drive.

**Description**

Comma Sense focuses on the four comma rules that govern the placement of the four word groups, for a combination of 16 variables that account for the majority of experienced writers' punctuation problems.

A comma tutorial on the punctuation rules that govern the four movable word groups, Comma Sense has four sections of four units each, for a total of 16 units, generating 160 college-level sentences. Each unit focuses on only one punctuation rule and one word group, allowing the user to study one rule at a time in ten-sentence units.

While reviewing dependent clauses and prepositional, infinitive, and verb phrases, Comma Sense (1) lets the user punctuate sentences, then reports errors, (2) locks each unit after it has been punctuated so that data cannot be contaminated, (3) allows the user to check the analysis as often as he or she wishes, to keep track of progress, (4) offers a printout of the analysis, (5) encourages experimenting by allowing the user to work on the 16 units in any order, and (6) helps identify the user's strengths and weaknesses of comma usage by reporting which rules are troublesome and which are not.

**Price**

Single User: $15.00
Site License: $300.00
Documentation: $6.50
(Doc. for Site License Only)

# Comma Sense II

Application
Version 1.0
English Grammar

Richard L. Berkey
English
Mesa College

**System Requirements**

Apple II computer series, minimum 64K.

**Description**

A review of the rules for punctuating coordinate and adverbial conjunctions that are used to join two independent clauses. The operator inserts commas and semicolons in sentences according to specific rules. Comma Sense II then delivers an analysis of the operator's work.

Comma Sense II is a punctuation tutorial that teaches the methods used for correctly joining independent clauses with coordinate conjunctions, adverbial conjunctions, and semicolons. Comma Sense II offers:

- short lectures that analyze each rule,
- "error trap" lectures that explain where failure is likely to occur,
- practice sections called "experiments" where each experiment asks the operator to select correct sentences, analyzes the sentence chosen, and explains why the operator was either right or wrong,
- eight, ten-sentence units called Punctuation Challenges that ask the operator to insert commas and semicolons according to a specific rule, and
- an Analysis that reports and prints the data collected during each Punctuation Challenge, which helps students learn their strengths and weaknesses.

**Price**
Single User: $17.00

Humanities



# English Vocabulary Skills

Application
Version 1.0
Vocabulary

Robert L. Crist
Illinois State University

**System Requirements**

Apple II computer, minimum 64K, with DOS 3.3.

**Description**

English Vocabulary Skills is a program designed to improve adult reading and vocabulary skills through the extensive study of 320 college-level words.

English Vocabulary Skills is designed to improve adult vocabulary and reading skills. A specific objective is to help college students to improve their vocabulary scores on tests such as the Graduate Record Exam (GRE) and the Medical College Aptitude Test (MCAT).

There are a total of 320 words, such as arcane, ennui, apocryphal, and pertinacious. The 320 words are divided into 32 ten-item sets. There are two instructional phases. One is a definition phase, in which students learn a word's definition through a process of drill. The other is a problem-solving phase, in which students learn a word's conceptual meaning by seeing it in a variety of contexts. During the problem-solving phase, students are required to read 50 one-sentence contexts (five for each of the ten words), and to identify which of the ten words best fit the contexts. Time to complete a ten-item set varies between 18 and 42 minutes, with an average of 22 minutes. A multiple-choice exam covering all 320 words is also provided.

**Price**
Single User: $16.50
Site License: $300.00
Documentation: $5.50
(Doc. for Site License Only)

Humanities

# Pre-Writing

Application / Tool
Version 1.0
English Composition

Joan Hocking
English
Pennsylvania State University, Mont Alto

**System Requirements**

Apple II+ or IIe computer, minimum 64K, with DOS and two disk drives.

**Description**

Five programs on one disk designed to aid the pre-writing phase of composition.

The Pre-Writing package contains five programs to be used for teaching expository writing. Each program covers a different style of writing, including description, narration, process, comparison and contrast, and analysis. Each program is designed to help students with the initial stages of the composing process, before they actually start the first draft. Students are asked questions concerning the particular type of essay to be written. These questions help students define and narrow their topic, change a topic if they see it is not working, choose their audience, make decisions about how to approach the essay, such as an appropriate tone and point of view, organize their material, and begin an outline. Each response is stored and used in subsequent questions. At the end of the program, students can print out of their answers to use when they write their first drafts.

The programs are designed to be self-contained; each includes an explanation of the type of essay. Students can write essays just from these explanations, which follow accepted formats and considerations for each of the five expository methods. Similarly, the line of questioning is appropriate for each type of essay.

**Price**

Single User: $23.00
Site License: $400.00
Documentation: $4.00
(Doc. for Site License Only)



# Binomials and Trinomials

## In English and Spanish

Application
Version 1.0
Mathematics

Terence Brenner
Mathematics
Hostos Community College

**System Requirements**

Apple II computer series, minimum 48K.

**Description**

A bilingual aid to students in learning and practicing binomial multiplication and trinomial factoring (with leading coefficient of one and leading coefficient of not one). Instructions and explanations are in English or Spanish.

This program is designed to introduce students to binomial and trinomial mathematics. The program contains two sections:

1. "Multiplying Binomials" covers the multiplication of binomials using the FOIL method.

2. "Factoring Trinomials" covers trinomials with the leading coefficient equal to one and not equal to one.

Both programs reward correct answers and explain how to get to the correct answer when an incorrect answer is made. When the program is started, the user can choose for all instructions and explanations to be made in either Engish or Spanish.

**Price**

Single User: $22.00
Site License: $800.00
Documentation: $3.50
(Doc. for Site License Only)

# Factor ][: Exploratory Factor Analysis

Application
Version 27
Factor Analysis

Richard J. Hofmann
Educational Psychology
Miami University

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3.

**Description**

Provides interactive exploratory factor analysis algorithms with graphics and an extensive user manual.

Factor ][ is targeted for research students and scientists in the social and natural sciences who utilize exploratory factor analysis. Three exploratory factor analysis algorithms with substantial supplementary output are included: image analysis, component analysis, and principal factor analysis. Both orthogonal and oblique transformations are available, as well as high-resolution plots and associated factor scores. Simple structure solutions are defined by the oblique algorithm.

Up to 24 variables can be analyzed on a one-drive system, and up to 40 on a two-drive system. Multivariate data entry routines are included, as well as customized machine-language input/output routines, including the "matrix to formatted text" for word processors.

There are two modes of analysis: scientific and highly interactive. A 125-page manual accompanying the software provides details on the application, theory, and interpretation of exploratory factor analysis, as well as explanations of all menus and options in the programs.

**Price**
Single User: $25.00
Site License: $150.00
Documentation: $11.50
(Doc. for Site License Only)



# Linear Programming by Fractions

Application
Version 3.10
Linear Programming and Math

Paul E. Hodges
Economics, Finance, and Decision Science
University of Texas, Permian Basin

**System Requirements**

Apple IIe computer, minimum 64K, with CP/M® 2.23 (60K), and an 80-column text card. A printer is optional.

**Description**

This program aids students in learning the simplex method and solving linear programming problems in the familiar format of rational fractions.

"Distinguished Software"
EDUCOM/NCRIPTAL
Software Awards, 1987

Linear Programming by Fractions is intended for students and instructors of linear programming. The program allows users to apply the simplex method to solve problems that are larger than would be done by hand, while maintaining the format that is used by many instructors and textbooks. In addition to allowing fractions, "big M" is displayed and the program is consistent with either sign convention commonly used in textbooks. Under normal operation, the solution process is under the control of the student through the use of simple, intuitive commands; however, automatic solution procedures are also available. Optional sensitivity analysis can be performed, and initial tableaus may be modified in order to either verify calculated ranges or answer "what if" questions.

Teachers can use the program in a variety of ways: as a tutoring or laboratory tool; for the development of text banks, overheads, and solution manuals; for class demonstrations; or as a self-instruction device. The user can edit models with up to eight constraints and eleven decision variables, resulting in tableaus with nine rows and twenty columns. The fractional values have a numerator and denominator accuracy of eleven significant digits each. All outputs to the screen, including tableaus, sensitivity analyses, and displayed solutions, can also be printed or written to disk as ASCII files.

**Price**
Single User: $14.50
Site License: $300.00
Documentation: $4.50
(Doc. for Site License Only)

# Monomials and Sign Exponents
## in English or Spanish

Application
Version 1987
Mathematics

Terence Brenner
Mathematics
Hostos Community College

**System Requirements**

Apple II, II+, IIe, or IIc computer, with one disk drive.

**Description**

A program designed to teach students the five operations on monomials and the three operations on exponents. Instructions and rules are in both English and Spanish.

This program is designed to teach students the five operations on monomials (addition, subtraction, multiplication, division, and power to a power) and the three operations on sign exponents (multiplication, division, and power to a power). The program can give instructions and rules in English or in Spanish.

The user chooses the type of mathematical question he or she would like to answer. When the question is asked and the user answers correctly, he or she has the choice of going on to another question. If the user gives the wrong answer, the program provides the correct answer and explains how to derive it.

**Price**

Single User: $21.00
Site License: $800.00
Documentation: $4.00
(Doc. for Site License Only)



# Sign Numbers
## in English or Spanish

Application
Developed Fall 1986
Remedial Math

Terence Brenner
Mathematics
Hostos Community College

**System Requirements**

Apple II computer, minimum 48K, with one disk drive.

**Description**

Sign Numbers in English or Spanish is designed for students to learn and practice the four operations (addition, subtraction, division, and multiplication) on sign numbers; instructions and rules are in English and in Spanish.

This program is designed for students to learn and practice the four operations on sign numbers. The program can give instructions and rules in English or in Spanish. When the program is started, the user is asked three questions: (1) what language the instructions, rules, and explanations should be in (English or Spanish); (2) whether the problems should use integers or decimal numbers; and (3) what skill the user would like to work on (addition, subtraction, division, or multiplication). The multiplication option also allows users to choose whether they would like to work with two or more numbers at a time.

After all the selections have been made, a problem appears and the user types in an answer. At this point the program allows two options: the user can see the rules that apply to this problem, or change the answer. The program then tells the user whether the answer is correct or incorrect, and explains an incorrect answer. Next, the user can either go on to another problem or see a table of the total number of correct and incorrect answers for each skill. If the user looks at the table, the program is restarted; otherwise the user is asked whether the next question should use integer or decimal numbers. To end the program, the user can shut off the computer after looking at the table.

**Price**

Single User: $20.00
Site License: $800.00
Documentation: $3.50
(Doc. for Site License Only)

# Two Linear Equations
## in English or Spanish

Application
Version 1.0
Mathematics

Terence Brenner
Math
Hostos Community College

**System Requirements**

Apple II Computer, minimum 64K.

**Description**

Two Linear Equations in English or Spanish is a bilingual program designed for students to learn and practice the addition method and the substitution method for solving a system of two linear equations.

A bilingual program designed for students to learn and practice the addition method (eliminate x first or eliminate y first) and the substitution method (solve for x first or solve for y first) for solving a system of two linear equations. All instructions and explanations are in English or in Spanish.

The student is allowed to choose the type of problem to solve. After the student solves the problem the program will tell whether the answer is right or wrong. It will then take the student through the various steps of the problem and show how to solve the problem correctly.

The computer will then tell how many right and wrong answers the student gave.

**Price**
Single User: $20.00
Site License: $800.00
Documentation: $3.50
(Doc. for Site License Only)



# Computer-Assisted Menu Planning

Application
Version 2.0
Food Service Management and Nutrition

Arthur P. Tolve, C.E.C., C.C.E., R.D.
Hotel and Restaurant Management
Bergen Community College

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3 and two disk drives. Standardizing Recipe Characteristics Program System ( see next page) is also required.

**Description**

A system that offers the lateral correlation of stored individual menu item characteristics with user-defined repetition options to determine the most complementary menu item choices from the stored characteristics listings.

The Standardized Computer-Assisted Menu Planning System is one in a series of systems designed to help the student understand some of the processes that require standardization in the food service. This program offers the lateral correlation of stored individual menu item characteristics, and allows user-defined repetition options.

The method of determining which food items to choose when planning menus involves separating menu items (recipes) into categories. In the Standardized Computer-Assisted Menu Planning System, each menu item in each of seven categories has been assigned eleven individual characteristics, chosen from the more than 170 characteristics available through the use of the related Standardizing Recipe Characteristics for Menu Planning system. These individual characteristics, such as color, texture, flavor, service time, serving temperature, and preparation method, were provided to guide the planning of the menu by either automatic or manual means.

The primary Computer Assisted-Menu Planning Programs create the designated number of menus by allowing the user to define repetition options to plan from one to 14 consecutive menus; to designate the time of service (breakfast, lunch, dinner); to indicate the serving temperature of the menu item (warm, hot, cold); and to stipulate the inclusion or exclusion of soups or appetizers. In addition, an alternative menu planning choice allows a practical flexibility in planning noncyclical menus. Both the auxiliary Index Reader Program and the auxiliary Index Total Program allow quick access to menu-item indexes in order to pinpoint availability.

**Price**
Single User: $18.00

# Standardizing Recipe Characteristics

Application
Version 4.0
Food Service Management and Nutrition

Arthur P. Tolve, C.E.C., C.C.E., R.D.
Hotel and Restaurant Management
Bergen Community College

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3.

**Description**

A system of programs that addresses menu planning by allowing the user to develop and store characteristics for up to 1,500 specific menu items.

Standardizing Characteristics for Menu Planning, part of the Standardization for Quality and Efficiency Series, addresses the menu planning process, which requires standardization in food service. The system consists of two primary and five auxiliary programs concerned with developing characteristics for a specific menu item (recipe). Characteristics of menu items are easily formulated and retrieved from up to sixteen component characteristics, and from eleven basic characteristics categories in seven different menu item categories. Menu-item characteristics may be stored in one or more menu categories. Indexes and references are included. Source characteristics may be easily updated.

To plan menus, the user can select menu items that conform to specific desired characteristics, or that don't include specific unwanted characteristics. The program is especially useful to professionals in institutional settings who are responsible for menu planning based on desirable/undesirable characteristics.

Depending on the length of the menu-item names, each initialized menu-item characteristics storage disk (used in drive 2) allows storage of characteristics for about 1,500 menu items.

**Price**
Single User: $16.00



# Standardizing Recipes and Ingredients

Application
Version 4.0
Food Service Management and Nutrition

Arthur P. Tolve, C.E.C., C.C.E., R.D.
Hotel and Restaurant Management
Bergen Community College

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.3.

**Description**

This system of programs standardizes control of food-service processing; adjusts recipe yield; converts ingredients to weight units; creates, organizes, and manipulates an ingredient data base; and creates and manipulates recipe files.

Standardizing Recipes and Ingredients, part of the Standardization for Quality and Efficiency Series, consists of two main programs and three auxiliary programs.

The Recipe Modification program lets the user organize ingredient data of either stored or new recipes; recipe yield can be increased or reduced. The Total Yield program reads stored or new recipes and converts each ingredient to weight units, calculates the total yield of the recipe in weight units, and allows an ingredient-unit storage option. Additionally, both main programs allow conversions from metric to American units, from ingredients used individually to weight units, and from can and jar sizes to volume/measure units.

The Auxiliary Recipe File Management program allows recipes and methods to be retrieved and manipulated. Each initialized recipe storage disk can hold approximately 50 recipe and 50 recipe method files. Ingredient data base files containing over 350 ingredients may be manipulated with the auxiliary Ingredient File Management program. In addition, while both of these auxiliary programs allow removal or change of stored data, another auxiliary program allows creation of individual recipe method files.

Available options include checking other storage disks to retrieve stored information; printing results; and retrieving introductory information and unit abbreviation charts.

**Price**
Single User: $19.00

# Animated Waves and Particles

Application
Version 1.3
Science Education

Eric T. Lane
Physics
University of Tennessee at Chattanooga

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.0.

**Description**

Animated simulation of wave and pulse behavior and the motion of an ideal gas, particles, electrons, and electron waves.

Animated demonstrations include the following: standing waves, traveling pulses, group velocity, and Doppler effects for sound and light; kinetic theory of the effects of temperature, pressure, and gravity on an ideal gas; a simulation of Maxwell's demon; the diffusion of molecules through a small opening; free diffusion; electron motion in a wire and in a magnetic field; and electron waves around an atom. This program can be used in secondary and college science classes, as well as introductory and advanced physics classes. It can also be used as a demonstration, as a supplement to laboratory work, and as an extra activity for advanced individuals or small groups. No programming or special training is required.

**Price**
Single User: $7.00



# Light Microscopy

Application
Version 1.0
Biological Science

Roger D. Haight
Microbiology
San Jose State University

**System Requirements**

Apple IIe computer, minimum 64K, with two disk drives. A color monitor is recommended.

**Description**

A series of full-color interactive graphic simulations that functionally describe and compare the essentials of brightfield, darkfield, fluorescence, polarization, and phase contrast microscopes.

Common light microscopes can be invaluable to the student of natural science. This program addresses light microscopy through a study of light properties (wavelength, coherency, reinforcement, interference, polarization, and diffraction), through simulations of the various parts of light microscopes, and through a series of interactive routines that compare various light microscopes. Routines for focusing, calibrating, and particle counting are provided. For review, a five-question "rarely-the-same-twice" quiz is also included.

This full-color interactive graphics package contains two disks and 14 pages of documentation. The courseware can be used effectively as "interactive overheads" during lectures or for individualized instruction.

**Price**
Single User: $25.00
Site License: $300.00
Documentation: $4.50
(Doc. for Site License Only)

# ORBITS

Tool
Version 10.2
Orbital Mechanics

Charles D. Brown
Wren Software, Inc.

**System Requirements**

Apple II Computer, minimum 48K, with DOS 3.3. Applesoft BASIC and a printer are also required.

**Description**

Menu driven and easy to use software that defines the orbital path of spacecraft in our solar system.

ORBITS will design the orbit of a spacecraft about any planet or the sun. Given any two of the following orbital elements—periapsis altitude, apoapsis altitude, periapsis radius, apoapsis radius, eccentricity, semi-major axis, or orbit period—ORBITS will calculate the remaining elements. Having established the orbit, the software will then calculate the following conditions at any point on the orbit using the two body assumptions:

- spacecraft velocity
- flight path angle
- time since periapsis passage

The software also provides for calculation of cosine law solutions and plane changes, which are tedious and frequent orbital mechanics situations.

The manual is divided into four parts. Part I shows you how to use the software. Part II is a series of worked examples that improve your skill with the software. Appendix A tabulates the equations used. Appendix B tabulates the planetary constants used in the software and shows you how to change them if you should need to.

**Price**
Single User: $25.00

Science



# OSCILLATOR

Application
Version 1.0
Physics, Applied Mathematics, and Engineering

R. L. Enlow
Mathematics
University of Otago

**System Requirements**

Apple II computer, minimum 128K.

**Description**

An animated simulation of the linear oscillator (mass-spring-damper) system, with corresponding time-displacement trajectories demonstrating resonance, beating, and critical damping.

OSCILLATOR is designed to supplement the teaching of dynamics of simple systems in beginning and intermediate physics, applied mathematics, or engineering courses. At the lower levels it provides "black box" results for demonstrating important phenomena such as resonance and critical damping. At higher levels, it can be used to relate the observed system response to the governing differential equation and its associated solutions. All relevant transient and steady-state solutions are included in the appendix of the user's manual, along with brief discussions of the phenomena of resonance and beating.

The program provides a library of 32 precalculated cases that have been chosen to emphasize important system design features. The program also allows alteration of all system parameters and initial conditions, so that students can experiment with their own choices and observe the resulting trajectories. Actual physical systems may be crudely analyzed by supplying the appropriate parameter values.

The menu-driven program is very easy to use, and any screen display can be printed with a single key-stroke. The self-contained, interactive nature of the program and the hard-copy output provide a means of acquiring, at the student's own pace, a thorough understanding of this simple mechanical system and the related mathematical analysis.

**Price**
Single User: $20.00
Site License: $300.00
Documentation: $4.50
(Doc. for Site License Only)

Science

# ATTSIM

Application
Version 1.0
Research Methods

Malcom J. Grant
Memorial University of Newfoundland

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.1, and two disk drives.

**Description**

A computer simulation designed to give students experience in the decision-making processes involved in carrying out an attitude survey.

ATTSIM is a computer simulation designed to give students experience in the decision-making processes involved in carrying out an attitude survey. Students interact with a computer in making a series of decisions about the length and content of the attitude questionnaire to be used, the method of obtaining a list of the population, the size of sample to be drawn, the method of contacting respondents, and the number of "callbacks" to be made in cases where respondents are difficult to contact. The program then simulates the survey process and reports the data obtained.

The program is very easy to use, and the documentation contains information on customizing the program to suit the needs of a particular instructor.

**Price**

| | |
|---|---|
| Single User: | $23.00 |
| Site License: | $300.00 |
| Documentation: | $5.50 |
| (Doc. for Site License Only) | |



# Campaign!

Application
Version 2.0
Political Science

Joel J. Davis

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.1.

**Description**

A realistic simulation of a U.S. presidential election. The user directs the activities of a major political party, including selecting the candidate, conducting polls, providing counsel for debates, overseeing fundraising, and spending the funds.

Campaign! is a realistic simulation of a national presidential election. As you direct the activities of a major political party, you'll help select a candidate, conduct polls, provide counsel for debates, oversee fundraising, decide where to spend your funds, seek out support of other politicians, decide where and how to campaign, how to accept or reject bribes and ill-gotten information, and more. There are ten levels of difficulty and an unlimited number of scenarios.

The manual that accompanies the software is divided into two parts. The first section is the Candidate's Briefing Book, which contains confidential memos, interviews, correspondence, and consultants' reports. All of the information is relevant to the playing of Campaign! and will help users make informed decisions during the simulation. The materials are written so that not all insights are immediately apparent on the first or second reading. The second section of the manual contains a complete step-by-step guide to playing the simulation.

**Price**

| | |
|---|---|
| Single User: | $24.50 |
| Site License: | $300.00 |
| Documentation: | $6.50 |
| (Doc. for Site License Only) | |

# Electoral College Simulation

Application
Version 2.0
Political Science

G. David Garson
Humanities and Social Sciences
North Carolina State University

**System Requirements**

Apple II+ or IIe computer, minimum 48K, with DOS 3.3.

**Description**

A simulation of a U.S. presidential election using Monte Carlo simulation techniques.

Electoral College Simulation recreates a U.S. presidential election using Monte Carlo simulation techniques. The program displays month-by-month results of a simulated election on a color map. Printouts are available to show monthly state standings as the campaign progresses.

Electoral outcomes are determined by historical state voting propensities, historical month-by-month change trends, and by a random normal (Monte Carlo) chance factor. The historical data is taken from the 1980 election, but the user may substitute tendencies from other elections. The program can be used either to demonstrate the Electoral College and voting tendencies in previous elections, or to introduce Monte Carlo simulation techniques used in computer simulations.

The documentation includes a background section describing the simulation techniques and a teacher's guide suggesting ways to use and modify the program.

**Price**

Single User: $23.00
Site License: $300.00
Documentation: $4.50
(Doc. for Site License Only)



# International Affairs Programs

Application
Version 1.1
Political Science

G. David Garson
Humanities and Social Sciences
North Carolina State University

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.1.

**Description**

International Affairs Programs will help students to understand levels of cooperation and competition in world resource allocation.

International Affairs Programs is a set of three programs. The first program, World Food Simulation, is a computer implementation of the well-known Baldicer simulation. The player represents a nation, and the computer represents 14 other countries buying and selling food machines. Outcomes are determined by work period production, resource decisions and inflation, population growth, natural and social forces, and production costs. At critical points the user can determine the levels of world cooperation and competition to avoid overgrazing and ruin of common lands.

The second program, Commons Tragedy Simulation, is a resource game very similar to the World Food Simulation. The game requires cooperation to avoid overgrazing and ruin of common lands.

Finally, Coup d'Etat Tutorial is a decision-making game in which the student plays the role of an insurgent trying to overthrow an incumbent regime.

**Price**

Single User: $23.00
Site License: $300.00
Documentation: $6.00
(Doc. for Site License Only)

# SOCSTATSIM

Application
Version 1.0
Research Methods

Ellen Vasu, Michael L. Vasu,
Susan F. Babcock, and Paul Ridgeway
North Carolina State University

**System Requirements**

Apple II computer, minimum 48K, with DOS 3.1, and two disk drives.

**Description**

A program and simulated data set designed to teach multivariate analysis (elaboration model) to social science students.

SOCSTATSIM is designed for classes in either applied introductory statistics or research design courses in public administration, political science, sociology, or business. The purpose of this program is to teach the application of statistical concepts to students with varying levels of mathematical maturity and preparation.

The program uses a simulated data set containing over 300 observations and 13 variables. It is designed to illustrate specific statistical concepts and styles of analysis—for example, the introduction of a third variable that clearly eliminates an original bivariate relationship. The program has two analysis options: a cross-tabulation upon two dichotomous variables or a Pearson Product-Moment correlation on two continuous variables. The package includes a complete instructor's manual with information on the data set, and a student workbook.

**Price**

Single User: $23.00
Site License: $400.00
Documentation: $6.50
(Doc. for Site License Only)



# Correlated Samples

Application
Version 1.4
Statistics

Harold Ermey
HMS Software

**System Requirements**

Apple II computer series, minimum 48K, with DOS 3.3.

**Description**

Illustrates statistical fundamentals by simulating sampling of a correlated pair of user-specified normal populations.

Correlated Samples is a simulation program that enables students to explore the nature of statistical sampling and the ways in which samples differ from one another and from their parent populations. It generates up to 500 scores, as though sampled from a pair of normal populations whose means, standard deviations, and correlation are specified by the user. These scores may be displayed as a scatter diagram with the line of regression for Y on X; frequency polygons for X or Y with a superimposed population curve of equal area; or a summary comparison of parameters and statistics, including mean, standard deviation, r, and related and independent t-values with their significance levels. Sampling may be repeated from the same populations while viewing any of these displays.

Printing routines provide hard copy of summary comparisons of parameters and statistics as described above; multiple samples for problem data, with "answers" on separate pages, including intermediate calculations such as sums and sums of squares; and the current sample.

Correlated Samples is not in the form of a lesson series—it is a tool that is as unlimited as the instructor's imagination. For example, the instructor might hand out copies of summary parameters/statistics, each representing a different sample of the same pair of populations and investigate how many samples would have generated type I or type II errors. Several suggested exercises are included in the manual, covering the effects of sample size, the nature of the standard error of the mean, correlation, the t-distribution, and matched versus unmatched t-tests.

**Price**

Single User: $18.50

# Mastering Statistics with Spreadsheets

Template
Version 1.0
Research and Statistics

Jeffrey M. Jacques
Sociology
Florida A & M University

**System Requirements**

Apple II computer, minimum 64K, with DOS 3.3, or minimum 128K with ProDOS; two disk drives. Spreadsheet software is also required.

**Description**

A template for students, faculty, and staff interested in mastering electronic spreadsheets and statistics/data analysis.

Mastering Statistics with Spreadsheets is an 11-lesson series designed to help the user master two important academic tools: statistical techniques and spreadsheets. It will help the user master the basic analytic statistical techniques used most often by scientists, engineers, physicians, administrators, educators, and other professionals. It closely examines each of the major statistical concepts and procedures, including simple descriptive statistics, basic approaches to analyzing two or more variables, and conceptual, meaningful computational strategies for inferential statistics.

Emphasis, however, is placed on mastering one of the most important microcomputer software products: electronic spreadsheets. It shows how each statistical tool can be effectively implemented with an electronic-spreadsheet software package of the user's choice. It also points out some of the basic and advanced application techniques that may be developed when using such software. The computer does the arithmetic while the user concentrates on the meaning of statistical concepts, ways they can be used, and techniques for using them effectively.

**Price**
Single User: $17.50



# The Social Science Data System

Application
Version 2.0
Statistics

G. David Garson: Developer
M. Brown, R. Betancourt, and P. Daut: Manual

**System Requirements**

Apple II computer, minimum 64K, with DOS 3.1, and two disk drives.

**Description**

The Social Science Data System is a package of data base and statistical tools suitable for teaching students how to use a microcomputer to write a term paper based on small to medium-scale research projects.

The Social Science Data System (SSDS) is a complete data base system that provides unlimited cases on multiple data disks; 1,000 fields; numeric or alphanumeric sorting on any field; searching by up to five criteria simultaneously; restructurable files; and more. SSDS also supports frequencies, four-way crosstabs, scatterplots with regression line, multiple regression, and DIF interfacing.

While it is full-featured, the program is designed primarily for classroom projects. When combined with a word processor, the SSDS package enables students to complete a data base term paper. Since SSDS writes its files in Apple DOS, any word processor that supports this file structure can "pick up" the output from SSDS as documents. For example, a student could take tables output by the SSDS multivariate crosstabs option and put them directly into a term paper.

**Price**
Single User: $33.00
Site License: $400.00
Documentation: $8.00
(Doc. for Site License Only)

# Statistical Processing System S.P.S.

Application / Tool
Version 5.0
Statistics

Gregory Buyhoff, H. Michael Rauscher,
R. Bruce Hull IV, Edward McKenna,
Rodney C. Kirk, and Kenneth E. Hinze

**System Requirements**

Apple II+, IIe, or IIc computer, minimum 128K, with ProDOS, and one floppy disk drive and/or a hard disk drive.

**Description**

A comprehensive disk-based statistical analysis system for professional and research use.

Statistical Processing System S.P.S is a comprehensive disk-based statistical analysis system for professional and research use. All programs are written in Applesoft and run under the ProDOS operating system. The package can be used with a one-drive system, however, two drives are recommended. S.P.S. is contained on two disks. Prompts notify the user when to change disks on a one-drive system.

The options available in this package include descriptive statistics and plots, correlations, regression analysis, mean tests (t-test and Anova), test distributions (T, F, and X2), R x C contingency tables, Monte Carlo distributions, multivariate analysis, and Univar, Bivar, and Trivar analyses.

The authors of S.P.S. assume that the user is familiar with statistical procedures and theory. Program algorithms are cited for each applicable routine and keyed by number to Appendix B. S.P.S. is not recommended for large survey data bases (700 or more cases), because data base size is memory dependent and computational efficiency is lost for such large data sets.

**Price**

Single User: $36.00
Site License: $500.00
Documentation: $16.00
(Doc. for Site License Only)



# The Steinmetz Statistical Package

Application
Version 1.0
Statistics

J. Ben Feallock and Michael R. Snavely
Psychology
Ohio University

**System Requirements**

Apple II computer, minimum 128K, with DOS 3.1.

**Description**

A full-featured statistical software package that permits persons with no computer experience to conduct many different statistical analyses. Includes statistical software.

The first program of the Ohio University Psychology Department Series on Computer Applications, The Steinmetz Statistical Package gives students with no computer experience a step-by-step guide to conduct a variety of statistical procedures including analysis of variance for many different fixed-factor designs (including several three-way designs), a one-way analysis of covariance, Pearson and Spearman correlations, t-tests for independent and correlated data, a Mann-Whitney U-test, a Wilcoxon Matched-Pairs analysis, and descriptive statistics.

The software menu includes the following entries:

- Examples of one-way, two-way and three-way Anovas
- Correlation programs
- One-way Anova
- Two-way Anova with repeated measures (Kirk's SPF–P.Q)
- Three-way Anova with repeated measures (Kirk's SPF–PR.Q)
- Three-way Anova with two repeated measures (Kirk's SPF–P.QR)
- t-Test programs
- Nonparametric statistics
- Randomized Block Analysis
- One-way Analysis of Covariance
- Descriptive Statistics

**Price**

Single User: $12.00

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Kinko's Academic Courseware Exchange
255 West Stanley Avenue
P.O. Box 8000
Ventura, CA 93001-8000

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