PhotoToolCM 2.0

What is PhotoToolCM ?

PhotoToolCM is a contextual menu plugin for Mac OS X. It helps you to manage/organize JPEG photo image created by digital cameras. Originally, I was going to add these features and functions to my QuickImageCM. However, I realized that due to some technical reasons, adding these features would increase the object size of QuickImageCM dramatically. So I decided to make it a separate CM plugin. This CM plugin can be a nice companion of the QuickImageCM and it has supplemental features you don't find in my QuickImageCM. So all the features that QuickImageCM has are not added to this CM plugin (e.g. adding/removing thumbnail icons, or batch renaming using numbering mode).
The main target of CM plugin is JPEG photo image created by digital cameras which contains special information called Exif, although some features still work with JPEG file that does not have Exif information.

I don't explain about Exif and lossless transformation of JPEG files here. Please find such information on the Internet if you are curious to know about it, otherwise, most probably you do not need to use this CM plugin. Again, this CM plugin is for those who already know about Exif and lossless transformation or those who deal with digital camara's photo images frequently.

Below is the summary of what this CM plugin can do. All of these features can be used right from the Finder without launching any applications.

• Displays Exif information (plus general JPEG file information) of a JPEG file quickly on the contextual menu.
• Copy Exif information of selected file(s) to the clipboard so that you can paste to other text documents.
• Batch rename selected file(s) using Exif date (the date pictures were taken).
• Change file dates (date created and date last modified) of selected file(s) to Exif date (the date pictures were taken).
• Transform (rotate/flp images) JPEG image witout decompress and compress the actual image data. (aka. lossless transform)
• Edit comment of selected JPEG files interactively, or all at once.
• Edit Exif date (date and time of the picture taken) of selected JPEG files using absolute or relative date and time interactively, or all at once.
• Clean up not important meta data and resource fork of selected JPEG files to make their file size smaller.
• Batch resize selected JPEG files using scale ratio or width or height as a base.
• You can easily add frames (with various shape and taste) to selected JPEG files interactively, or all at once.

Installation

For your convenience, simple AppleScript to install the PhotoToolCM is enclosed. Just run the 'Install PhotoToolCM' script to install and follow the direction on the screen.

You can manually install the PhotoToolCM by copying 'PhotoToolCM.plugin' package to either '/Library/Contextual Menu Items' folder or '~/Library/Contextual Menu Items' folder. If you don't have '~/Library/Contextual Menu Items' folder, simply create a new folder and copy it there. In this case, you need to either restart computer, or logout and login again, or restart the Finder to use the PhotoToolCM.
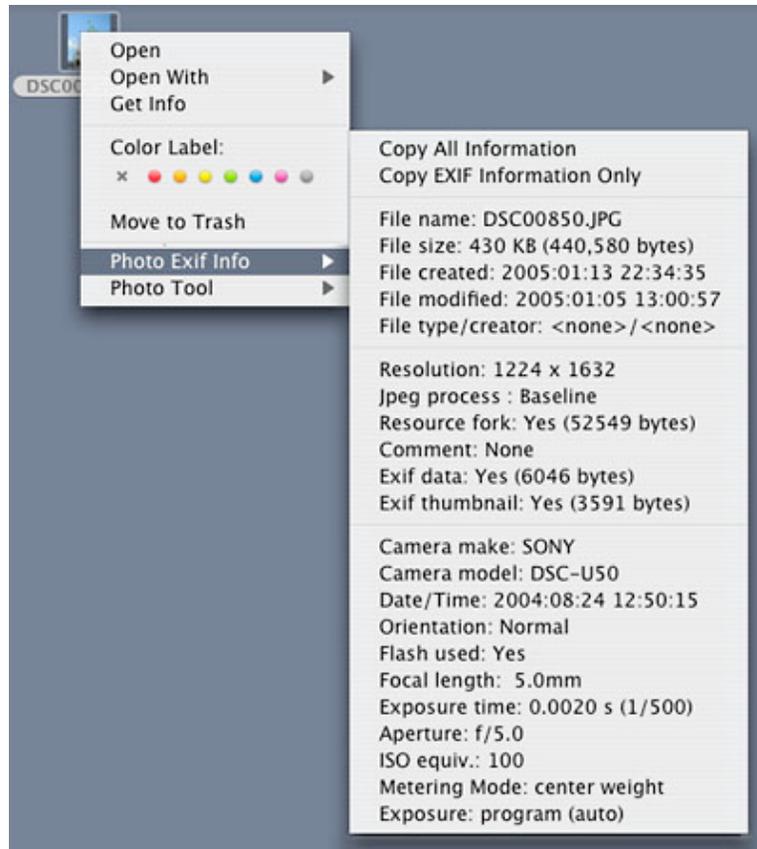
How to use?

Choose one or more JPEG files under the Finder and Control+Click the mouse to bring up the contextual menu. You will see **'Photo Exif Info'** and **'Photo Tool'** contextual menu items with sub menus. Below is the sample screenshot of Photo Tool cotextual menu and its sub menus. Then, choose the function you want to perform.

How to use (1) Display Exif information

When you select Photo Exif Info contextual menu, a sub menu appears and displays the selected file's Exif information. It also displays some generic file information at the top (file name, size, date...) If you select JPEG file that does not contain Exif information, you can still see the generic information of the file. When multiple files are selected, it displays the Exif information of the first file. So if your pupose is to see the Exif information, selecting multiple files is meaningless.
Exif information that is displayed varies depending on the digital camera and manufacturers. However, this CM plugin does not show Comments tag and its content to the contextual menu since it can be too long for displaying on a menu.

How to use (2) Copy All/Exif information

You can find these function at the top of the submenu of Photo Exif Info contextual menu (see the screenshot above). This function copies All information (generic file info + Exif info), or only Exif information of all the selected files to the clipboard as a text data. This includes Comments tag and its data which you won't see on the contextual menu. You can paste this Exif information to any text document using text editor or word processor applications.

How to use (3) Lossless Transformation (rotate/flip)

As you can see in the first sample screenshot of this document, currently following lossless tranformations are suppoted.

> **Lossless Rotate 90 CW**
> **Lossless Rotate 180**
> **Lossless Rotate 270 CW**
> **Lossless Flip Horizontal**
> **Lossless Flip Vertical**
> **Lossless Automatic Transform**

Before performing these functions for the first time, please take time and open the Preference dialog and check the default options for this lossless transformation. When **'Trim non-tranformable odd edge blocks'** option is ON, right/bottom edges of transformed images may be trimed if the image size is not multiple or 8 or 16. If you set this option OFF, then non-transformable right/bottom edges are left untouched so that you can reverse the transformation and get the original image back completely. Usually, JPEG images created by digital cameras does not have odd size so this option does not affect at all. It only affect if you transform images that has been scaled, trimmed by image processing application like PhotoShop.

'**Copy metadata from source file**' option determine which extra metadata to be retained during the transformation. If you select **None** or **Comment Only**, then all or most of the Exif information will be lost by the transformation. So if you do not want to loose Exif information, choose **All** for this option.
You can replace the original file with transformed file, or you can create new file using the original file name plus extra suffix/extention added. This can be selected also from the Preference dialog. The default behavior is create a new file with **.new** extra extension added to the original file name.

Lossless Automatic Transform examine the rotation(orientation) tag in Exif data and rotate image only if the rotation tag is not normal. Some digital camera (e.g. SONY DSC–U50) uses 180 degree rotation for self portrait pictures using lense rotation. So Lossless Automatic Transform function rotate only such rotated image and reset the rotate tag in Exif data to normal. This function does not touch pictures which has normal rotation tag.

<h1 style="text-align:center; color:blue;">How to use (4) Lossless Cleaning</h1>

When you select '**Lossless Cleaning (Reduce Size)**' menu, the following dialog appears on the screen and let you delete some metadata and resource fork from selected JPEG files interactively. When you first time use this function, please open 'Preferences...' first and select what you want to delete with this function.
What you can delete is Resource Fork, Exif data, Exif Thumbnail and JPEG comment. They are not actual image and deleting them will not affect the image itself. So if you want to make your JPEG files lighter (smaller), this is the function you might want to use.
WARNING: **This function deletes Resource fork or metadata permanently from the original JPEG file. So before using this function, make sure to understand what you are going to do with this function.**
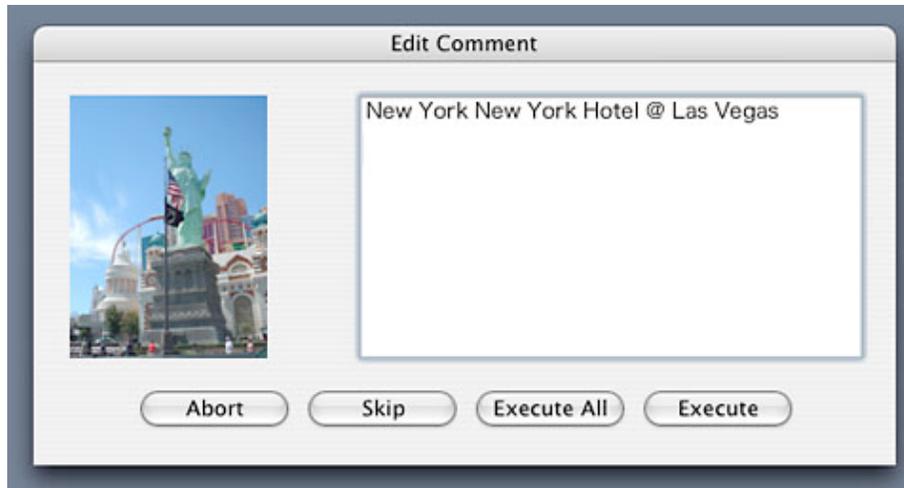

On the dialog, you will see the current file name and how much you can save by executing this function. However, as you can see on the dialog, it does not show the resource fork size even when you choose to delete the resource fork at the preferences dialog. So if the file has resource fork (e.g. custom icon data) and you choose to delete resource fork too, then the total file size would be much smaller than the size you see on this dialog.
The dialog will be displayed for each file unless you select 'Execute All'. If you want to execute this operation for all selected files without seeing the dialog, select 'Execute All' button. When you press 'Execute' button, it performs the cleaning to the current file and bring the dialog again for the next file. Skip button skips the current file and go to the next file, and Abort button abort the operation and returns to the Finder.

<h1 style="text-align:center; color:blue;">How to use (5) Edit Comment...</h1>

When you select '**Edit Comment...**' menu, the following dialog appears on the screen and let you edit comment of selected files interactively.
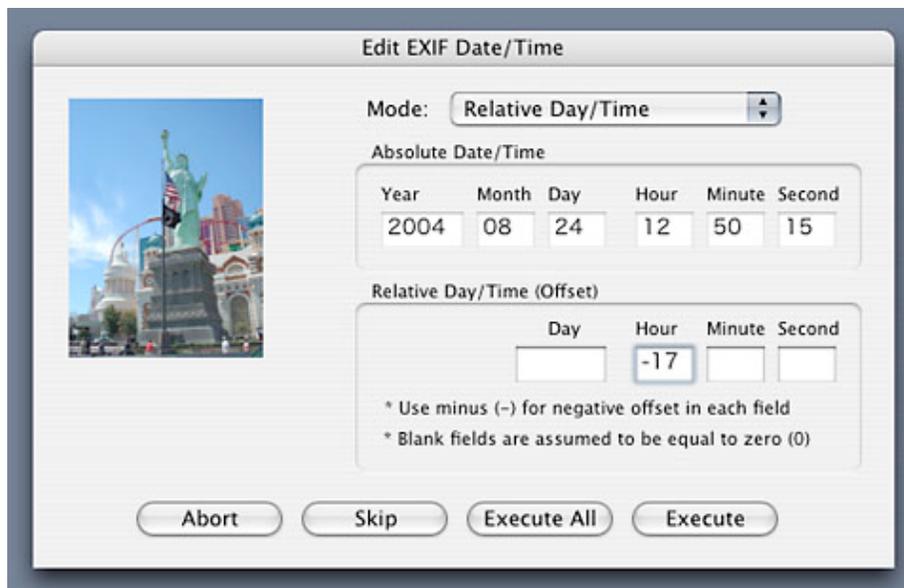
With this dialog you can edit comment of JPEG files one by one or all at once. If you want to apply the same comment to all selected files, press '**Execute All**' button. Otherwise, press '**Execute**' button. When you press 'Execute' button, it changed the comment of the current file and bring the dialog again with next picture on it. Skip button skips the current file and go to the next file, and Abort button abort the operation and returns to the Finder.

Currently, PhotoToolCM support up to 2000 bytes of comment. If the comment gets bigger than 2000 bytes, it will be truncated. I guess this limitation is not an issue since most comment would be less than 2000 bytes. This function edit the comment of the original file, but image itself and Exif data that are already in the original JPEG file won't be changed. **Use this function carefully since the original comment will be gone permanently once you make changes.**

How to use (6) Edit Exif Date...

When you select '**Edit Exif Date...**' menu, the following dialog appears on the screen and let you edit Exif date/time of selected files interactively. This function would be useful to adjust the Exif date of the pictures you took in a different time-zone area to your local time.

Note: This function works only with the JPEG file which has Exif Date metadata. If not, the files are skipped.

With this dialog you can specify either absolute date/time or relative day/time (offset value). First select the

mode (absolute or relative) using the popup menu at the top. Then, enter the date/time value you like to the corresponding fields. Original Exif date and time is shown on the absolute date/time field for your convenience.

For relative day/time mode, you can enter positive or negative value to each field. No year and month adjustment is available since days of month and year varies. However, you can use the value like '-365' to adjust the year to one year backward. You can combine negative and positive values like Day -1 Hour 6, which is same as Hour -18, but you can go either way. If you leave the fields blank, those fields are assumed to be zero (0), which means no change.

If you want to apply the same absolute or relative date/time to all selected files, press **'Execute All'** button. Otherwise, press **'Execute'** button. When you press 'Execute' button, it changed theExif date/time of the current file and bring the dialog again with next picture on it. Skip button skips the current file and go to the next file, and Abort button abort the operation and returns to the Finder.

This function edit the Exif data of the original file, but image itself that are already in the original JPEG file won't be changed. **Use this function carefully since the original Exif date/time will be gone permanently once you make changes.**

How to use (7) Change File Dates to Exif Date

When you select **'Change File Dates to Exif Date'** menu, the file created date and last modified date of all selected files are changed to their Exif date (the date that the picture was taken). This function is usuful if you want to see the files to be sorted nicely by the date picture taken under the Finder's list view. Usually, when you download (copy) pictures from your digital camera to your Mac, the file created date is the date you download and the file modified date is the date when the picture was taken. (iPhoto uses the date of picture imported from digital camera for both created and modified dates). In any case, once you modified the picture using software, the date picture was taken no longer remain in either file created and modified date. That's why this function might be usuful for your managing picture files under the Finder.

This function works only with the JPEG files with Exif information. This function skip the JPEG files that do not have Exif information.
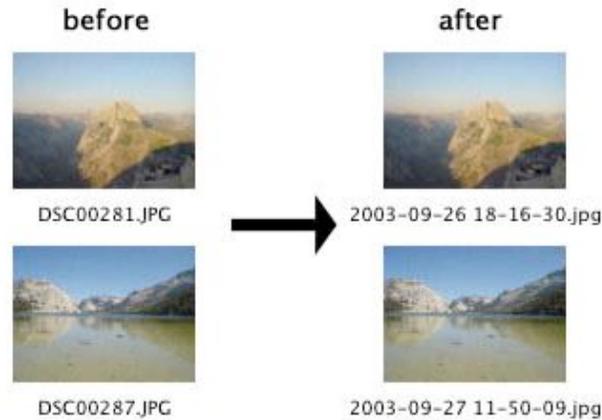

How to use (8) Batch Rename using Exif Date

When you select **'Batch Rename using Exif Date'** menu, the name of all selected files are renamed using corresponding Exif date (the date that the picture was taken). You can choose some options for the renaming rules in the Preference dialog.

The prefix of the new file name can be specified by entering format string into the text field. Reserved words **YY**, **YYYY**, **MM**, **DD**, **hh**, **mm**, **ss** will be replaced corresponding date and time elements of the Exif date. Only alphabets, numeric characters, space, hyphen and underscore are allowed to use for this format string.

The numbering option can be used for the suffix of the file name. This might be usuful when you do not want to use hour/minute/second for the file name to make the file name shorter and still want to avoid file name duplication error. Fore example, if you choose YYYY-MM-DD and 3 digits numbering on, the new file name would be something like **2004-05-30 001.jpg**, **2004-05-30 002.jpg**...
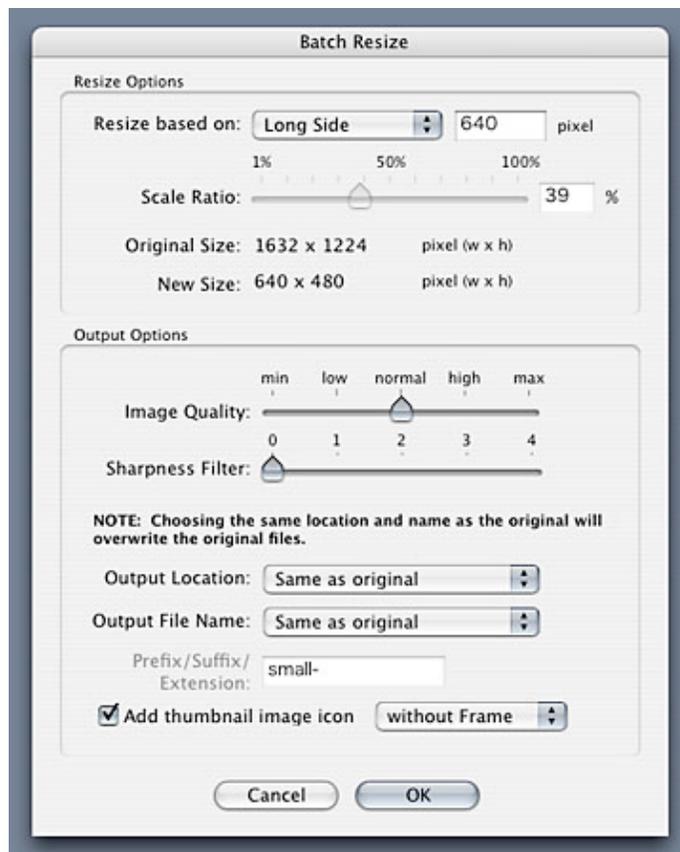
Numbering always starts from 1 and automatically increase when the same file name already exists. So as long as you use numbering option, there won't be any file name duplication error. Therefore, you do not have to use hour/minute/second for the file name prefix format with this numbering option. If the numbering option is used, all the selected files are sorted by their name before renaming. This is because of the fact that Finder does not always create the selected file's list by the file name order. Since file name of pictures which are created by digital cameras has sequential numbering, sorting by file name perfectory reorder the files by the date and time of creation. **As the conclusion, please use either 'hour/minute/second' for file name prefix format or numbering option to avoid file name duplication error.** Besides, in case of duplication error, the file won't be renamed and skipped to the next file.

The file name suffix (extension) can be choosen to either one of **.jpg**, **.jpeg**, **.JPG**, **.JPEG** or **no extension**. This function is designed for the JPEG files with Exif information. However, you can rename JPEG files that do not have Exif information using either one of file created date or file modified date by selecting options in the Preference dialog. As default, Batch Rename function skips JPEG files that do not have Exif information.

before		after
DSC00281.JPG	→	2003-09-26 18-16-30.jpg
DSC00287.JPG		2003-09-27 11-50-09.jpg

How to use (9) Batch Resize...

When you select '**Batch Rerize...**' menu, the following dialog appears on the screen and let you resize (scale) all selected JPEG files. This function might be usefull if you want to resize many pictures for sending them to your friends via email. This function is designed to reduce the image size (scale down) and therefore does not support enlarging image (scale up).

Batch Resize

Resize Options

Resize based on: [Long Side ▲▼] 640 pixel

1%   50%   100%

Scale Ratio: ——————○—————— 39 %

Original Size: 1632 x 1224 pixel (w x h)

New Size: 640 x 480 pixel (w x h)

Output Options

min   low   normal   high   max

Image Quality: ——————————○——————

0   1   2   3   4

Sharpness Filter: ○——————————————

NOTE: Choosing the same location and name as the original will overwrite the original files.

Output Location: [Same as original ▲▼]

Output File Name: [Same as original ▲▼]

Prefix/Suffix/Extension: small-

☑ Add thumbnail image icon [without Frame ▲▼]

(Cancel)   (OK)

First section (Resize Options) determines how to scale the select images, whether using scale ratio or using width or height or long side as a base of resizing. Based on the selection of the popup menu, the control you can use differs. For example, if you choose 'Scale Ratio' as the resizing base, you can select scale ratio using either slider control or edit text box. If you choose 'Width' or 'Height' for the resizing base, if will use the specified width or height for all selected images even if the image size of selected files vary.

Second section (Output Options) determines the quality of output JPEG image and output file name and location settings. As a default, it add '-small' suffix to the original file name and creates new files to the same location as the original files.

Sharpeness filter might be useful since the smaller image become, the more blur image gets. QuickImageCM's sharpen filter is about same as the level 3 of this sharpeness setting. This means you can get more fine sharpeness tuning than QuickImageCM's sharpen filter.

Since batch resize function woule be mainly used to make the pictures smaller in dimension and file size, output files won't have Exif data, comment. All such extra metadata in the original file won't be added to the output file because I thought that the popular purpose of using batch resize is to create smaller file for sending them via email. However, you can add custom thumbnail image icon by checking the 'Add thumbnail image icon' checkbox at the bottom. Usually, email software simply drop the resource fork of the file, so it won't affect the size of the image you send with email software.

This function touches the JPEG image itself. So if you choose to replace the original file as an output option, (same file name and same location as the original file) please make sure that the original JPEG image will be lost permanently (replaced by smaller image).

<p style="text-align:center">How to use (10) Add Frame...</p>

When you select '**Add Frame...**' menu, the following dialog appears on the screen and let you add frames to all the selected JPEG files interactively (one by one) or all at once.
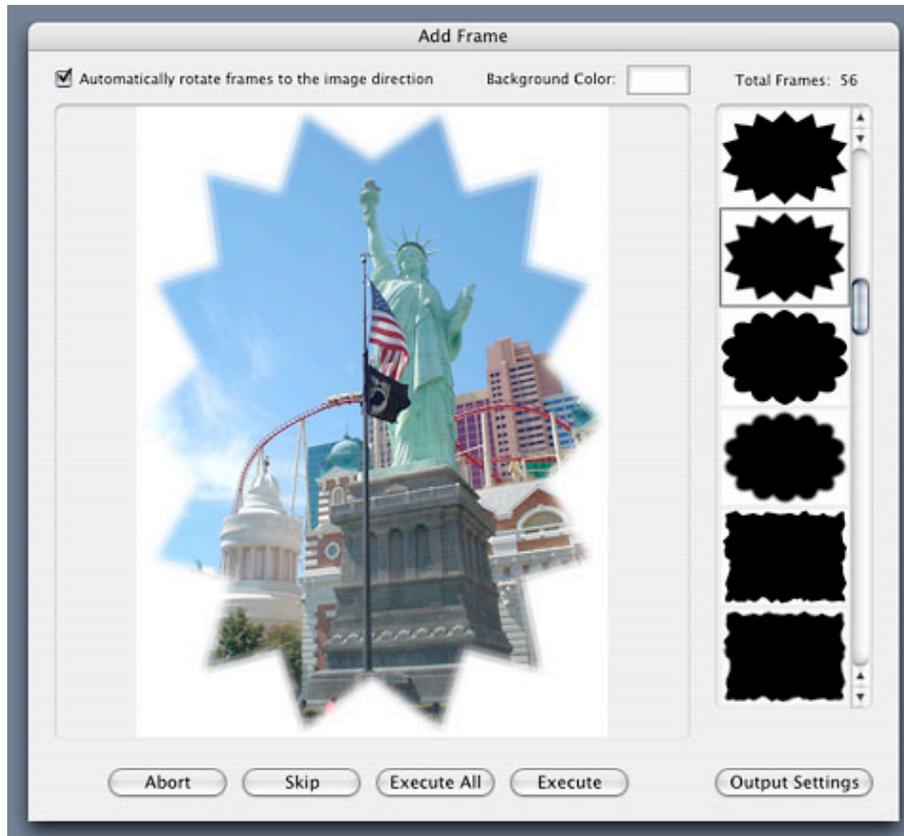Currently there are 56 frames are available to choose from. You can select your favorite one using mouse or keyboard (up/down arrow key). You can also change the background color (color of the masked area) by clicking the background color button and choosing a color from the standard color picker. The checkbox at the top of the image determine if PhotoToolCM rotate the frame when the direction of the image and frame are different. As you can see below, frames are all designed 4:3 (Width:Height) landscape orientation. So if the image is portrait orientation some frame may look funny without rotation.

There's no output optional settings on this dialog. All output options are in the Preference dialog, and you can access the output options at the Preference dialog by clicking the 'Output Settings' button.

When you select 'Add Frame...' from the context menu, a small dialog is displayed and says that 'Frame Image is being loaded...' and it may take some time until the dialog below is displayed. PhotoToolCM searchs the all frame images and load them and prepare them for being used at that time, so please be patient for seconds.

Technically, you can add your original custom frame image, or delete unnecessary frame images. But the current version of PhotoToolCM does not provide user interface to do this. You can just go to the 'FrameImages' folder under the Resource folder of the PhotoToolCM.plugin package (bundle) and add your own frame image as JPEG file (must be the name of xxxx.jpg), or delete unnecessary frame images from there. I am thinking of adding user interface for this in the future. So for the time being, please do such a manual operation if you want to customize frames. Besides, the more frames, the more loading time it requires. So please do not add too many frames :-)

If you have created really nice frames and OK for sharing your frame with other users for free of charge, please send yours to me <hide@pixture.com>. I will think about it and add some of the really nice frames with the future version of PhotoToolCM. Please make your frame file size less than 100KB (hopefully somewhere around 50KB per frame). The existing 56 frames are created by me and I am not really satisfied with them due to the limited time I was able to spend to make them. So please let me share your nice frame with everyone.

DSC00850.JPG   →   framed-DSC00850.JPG

DSC00781.JPG   →   framed-DSC00781.JPG

How to use (11) Preferences

When you select '**Preferences…**' menu, the Preference dialog appears on the screen and let you set some options for transform and batch rename operation. Please refer to the former corresponding sections of this document for each options.

Technical Information

If you are familiar with UNIX systems, you might have heard about **libjpeg**, **jpegtran** and **jhead** open source library and command line tools. Actually, PhotoToolCM uses these open source software as a part of the code. That's why the object size is somewhat big (especially, libjpeg is big). Since Mac OS X does not come with such open source software, I decided to use them inside of the CM plugin to avoid the situations where users have to download and install such software separatedly. Then I added interface and extra code (batch renaming, change file date, copy Exif info.., batch resize, edit comment) and made them as a CM plugin.

F. A. Q.

Q. Does PhotoToolCM TIFF images and other format like .mov, .wav… ?

A. No. Although some digital camera supports TIFF and .move (movie), and .wav (audio) file format, PhotoToolCM does not support them right now.

Q. Why PhotoToolCM and QuickImageCM can not be integrated into one CM plugin?

A. It's possible, but integrating these two plugin would ended up with a heavy CM plugin, which would be hard to maintain. Also, functions in PhotoToolCM is a bit niche ones and works only with JPEG files. That's the reason I decided to make them separated CM plugins.

Q. Does lossless rotation and flip differs from rotation and flip that QuickImageCM provide ?

A. Yes, lossless transform does not decompress and compress the actual image data but just rearrange the image data blocks. Therefore, the quality of image and color information in the transformed image is exactly same as the original image and file size won't be changed (changed only slightly). So the image would not lose the original quality no matter how many times you rotate/flip image back and forth. That's why it's called **lossless** transformation.

Q. It seems that not all detail Exif information is not displayed. Why?

A. Because PhotoToolCM uses public domain jhead-2.1 as a base code for extracting Exif information and this software does not cover every Exif information but most major Exif information you might need.
In addition, Comments tag and its content is not displayed on contextual menu because it can be very long text, while it is copied to clipboard using Copy Exif Info function.
If there's any critical or important Exif information you want to see and missing from this CM, please let me know and I will look into it.

Q. It seems like many strings are hard coded and not localizable. Why ?

A. Because I did not have much time to make them localizable. Maybe, in the future, I will make them localizable, but current focus of development is to make this CM plugin useful and powerful. I will think about localization later.

Version history

2.0   (1/13/2005)
        – Added 'Add Frame…' funtion!!
        – Fixed a major bug that may cause Finder crash when lossless transform is executed.
        – Added 'Long Edge' mode as a resizing base of the batch resize function.
        – Now it remember the last settings used for batch resize and use them for the next time.
        – Added 'Add Prefix' mode for output file name option. (for Lossless Transform, Batch Resize and Add Frame)
        – Added output file location option (for Lossless Transform, Batch Resize and Add Frame)
          (If you execute thesee function while shift-key is pressed, it temporary goes to the 'Choose on the fly' mode)
        – Now it displays a warning dialog when the operation overwrite the original file. This warning dialog can be
suppressed at the Preference dialog.
        – Increased the speed of adding thumbnail icon by attaching 128x128 icon only.
        – Now you can choose whether the thumbnail icon has border frame or not.

– Removed a debug routine which has been left over (which display 'Not JPEG (file name) to the console)
– Changed the file size information display to comma edited ones.
– Changed the order and layout of contextual menu display slightly for easier operation.
– Added a routine to bring the Finder to front so that the dialog that PhotoToolCM opens will be displayed on top of the current application's windows when Finder is not the frontmost process.

1.4   (5/10/2004)
– Added Edit Exif Date function
– Added sharpeness filter option to batch resize function to make reduced image better.
– Added numbering option to batch rename function
– Redesigned the preference dialog using three tabs
– The timing off problem of the progress dialog display (in batch resize and lossless transform) is fixed
– Batch Rename function now uses Exif digitized date or Exif created date if there's no Exif original (generated) date.

1.3   (5/3/2004)
– Added 'Add thumbnail image icon' option to batch resize and lossless transform.
– Fixed a memory leak bug in batch resize function.
– Batch resize and lossless transform function displays progress dialog and make it possible to cancel the operation in the middle.

1.2   (4/29/2004)
– Added Lossless Automatic Transform function
– Added Lossless Cleaning function (for reducing JPEG file size)
– Added Edit Comment function
– Added Batch Resize function
– Added 'add suffix' mode to lossless transform preference settings
– Shows more generic file information on the 'Photo Exif Info' context menu.
– Changed Copy Exif Info command into two commands, Copy All Info and Copy Exif Info only.
– Fixed some minor bugs

1.1   (4/19/2004)
– Fixed a bug that lossless transformation sometimes causes Finder crash under Panther.

1.0   (11/9/2003)
– Changed preference option for batch rename function. Now it's more flexible and customizable.

1.0b1 (11/3/2003)
– First public release. Since I would like to get people's option and idea for improvement, I decided to release it as a beta version. So although it's beta, all the features and functions are fully implemented and operational (I believe).

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libjpeg-6b   by Independent JPEG Group (IJG) – copyright (C) 1991–1998, Thomas G. Lane. All Rights Reserved.
http://www.ijg.org/

jpegtran   (same as above) – jpegtran is included in IJG's JPEG software-6b

jhead-2.1   public domain software by Matthias Wandel <mwandel@sentex.net>
http://www.sentex.net/~mwandel/jhead/

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