

Renrot

version 1.0, 21 March 2008

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... Many things we do naturally become difficult only when we try to make them intellectual subjects ...

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Preface

This edition of the *Renrot Manual*, last updated 21 March 2008, documents renrot Version 1.0.

Short history of renrot.

Typographical conventions

This manual is written using Texinfo, the GNU documentation formatting language. The same set of Texinfo source files is used to produce both the printed and online versions of the documentation. Because of this, the typographical conventions may be slightly different than in other books you may have read.

Examples you would type at the command line are preceded by the common shell primary prompt, '\$'. The command itself is printed *in this font*, and the output it produces 'in this font', for example:

```
$ renrot --version
RenRot version 1.0
```

In the text, the command names are printed *like this*, command line options are displayed in 'this font'. Some notions are emphasized *like this*, and if a point needs to be made strongly, it is done **this way**. The first occurrence of a new term is usually its *definition* and appears in the same font as the previous occurrence of "definition" in this sentence. File names are indicated like this: '/path/to/ourfile'.

The variable names are represented *like this*, keywords and fragments of program text are written in **this font**.

Acknowledgments

Andy Shevchenko¹ contributes to the project, makes code design tuning. He is offering and implementing new ideas and helping with Linux related releases.

Phil Harvey (<http://www.sno.phy.queensu.ca/~phil/exiftool/>), whose code is the base of renrot EXIF processing code, had offered valued comments and suggestions.

ASPLinux company (<http://www.asplinux.ru>) had included renrot to their distribution.

Alex Zasytkin helped with documentation writing and Win32 tests.

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¹ coauthor

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sbrk() problem on FreeBSD-6.x

1 Description

RenRot is a program to rename and lossless rotate (for now only JPEG format) files according to their EXIF tags values.

To prevent incorrect associations, some explanation is needed here. The name of project is short form of ‘REName and ROTate’ and no other interpretation will be used.

Renrot is intended to work with a set of files containing EXIF data and can do two things to them: rename and rotate. A set of files can be given either explicitly or using the ‘`--extension`’ option, which select the files with the given suffix. Renrot operates on files in current working directory, unless given the ‘`--work-directory`’ option, which changes this default.

Renrot renames input files using a flexible name template (which, among others, uses `DateTimeOriginal` and `FileModifyDate` EXIF tags, if they exist, otherwise names the file according to the current timestamp). Further, renrot can aggregate files according to the shooting time period or to a given template.

Additionally, it rotates files and their thumbnails, as per `Orientation` EXIF tag. If that tag is absent, the program allows to set rotation parameters using ‘`--rotate-angle`’ and ‘`--rotate-thumb`’ command line options. This is currently implemented only for JPEG format.

The program can also place commentaries into the following locations:

- Commentary tag from file (see ‘`--comment-file`’ in see [Chapter 2 \[Renrot Configuration\]](#), page 5)
- UserComment tag from configuration variable (see see [Chapter 4 \[Tags\]](#), page 23)

Personal details may be specified via XMP tags defined in a configuration file, see see [Chapter 4 \[Tags\]](#), page 23.

In addition, renrot can aggregate all files in different directories, according to a given date/time pattern template, set with ‘`--aggr-template`’.

Why RenRot?

Several projects like RenRot are available in the net, but why to choose namely RenRot? Because:

- it does just what it would do - renames and rotates, nothing more than that;
- it is pure CLI with all it’s advantage (no need KDE or any other monster to run);
- it uses `Image::ExifTool` (the best open tool to work with EXIF data) and `libjpeg6` (the best open tool to operate JPEG format files, to correctly rotate both, the entire file and the thumbnail inside it);
- it has very much flex file naming and aggregation template engines;

- it uses original algorithm of smart Orientation tag rotation;
- it works in batch mode.

2 Configuring Renrot

In the simplest case you will be able to startup `renrot` without any additional command line options except `-e`

2.1 Command Line Options.

2.1.1 General Command Line Options.

```

'-c 'filename''
'--config-file 'filename''
    Path to the configuration file.

'-d directory'
'--work-directory directory'
    Define the working directory.

'--exclude 'filename''
    Specify files to exclude. Wildcards are not allowed. If a set of
    files is given, there must be as many occurrences of this option
    as there are files in the set.

'--sub-fileset 'filename''
    Get names of files to operate upon from FILE. The file must
    contain a file name per line. This option is useful when you
    need to process only a set of X from Y files in the directory. If
    specified, the rest of files given in the command line is ignored.

'-e extention'
'--extension extention'
    Process the files with given extention (JPG, jpeg, CRW, crw,
    etc). Depending on the operating system, the extension search
    might or might not be case-sensitive.

'-n template'
'--name-template template'
    A template to use for creating new file names while renaming.
    It can also be defined in the configuration file (variable Name
    Template). The default is '%Y%m%d%H%M%S'. For practical uses,
    see "TEMPLATE EXAMPLES" section.

    Interpreted sequences are:
    %%                a literal %
    %#               a literal #
  
```

%C	Numeric part of the original file name. Implemented for the sake of cameras, that do not supply FileNumber EXIF tag (currently all makes, except *Canon*). Such cameras generate file names starting with letters and ended with digits. No other symbols are allowed in file names, except “-”, “.” and “_”.
%c	Ordinal number of file in the processed file set (see also ‘--counter-fixed-field’ option).
%d	Day of month (01-31).
%E	The value of ExposureTime tag, if defined.
%e	Old file extension
%F	The value of FNumber tag, if defined.
%H	Hour (00-23).
%I	The value of ISO tag, if defined.
%i	FileNumber tag if exists (otherwise, it is replaced by string “NA”).
%M	Minute (00-59).
%m	Month (01-12).
%n	Previous filename (the one before renrot started processing).
%O	Base part of the original filename (see ‘%o’). In other words, the first part from the beginning to the last dot character.
%o	The name file had before it was processed by renrot for the first time. If the file was processed only once, the tag RenRotFileNameOriginal is set to the original file name.
%S	Second (00-59)
%W	The value of WhiteBalance tag, if defined.
%Y	Year with the century (1900, 1901, and so on)

`%y` Year without a century (00..99)

You can use value of any EXIF tag to be included as name part. To do that you need to embrace tag name with sign "#", while building name template (see "TEMPLATE EXAMPLES").

Be careful, since any binary EXIF (like ThumbnailImage) can produce totally unexpected results.

`'--no-rename'`

Do not rename files (default is to rename them to YYYYmmd-dHHMMSS.ext)

`'--counter-fixed-field'`

`'--no-counter-fixed-field'`

Set fixed length for file counter, used in file name templates (see `'%c'`). It is enabled by default. Use `--no-counter-fixed-field` to undo its effect.

`'--counter-start number'`

Initial value for the file counter (default is 1)

`'--counter-step number'`

Step to increment file counter with (default is 1)

`'-r angle'`

`'--rotate-angle angle'`

Define the angle to rotate files and thumbnails. Allowed values for *angle* are 90, 180 or 270. It is useful for files not having Orientation tag.

`'--rotate-thumb angle'`

Rotate only thumbnails. Allowed values for **ANGLE** are 90, 180 or 270 degrees. Use if the files which were already rotated, but their thumbnails were not.

`'--only-orientation'`

Rotate by changing the value of Orientation tag, no real rotation will be made. The sequence of values to rotate an image from normal (0 degrees) by 90 degrees clockwise is: 0 -> 90 -> 180 -> 270 -> 0. It means. set Orientation tag to 90cw after the first rotation, and increase that value by 90 each time the rotation is applied. For 270cw the rotation algorithm uses the reverted sequence. Rotation by 180cw triggers values in two pairs: 0 <-> 180 and 90 <-> 270. This option cannot be applied to mirror values of Orientation tag.

`'--trim'`

`'--no-trim'`

Pass the "-trim" option to `jpegtran(1)`, to trim if needed. By default, trimming is enabled. Use `--no-trim` to disable it.

`--no-rotate`
 Do not rotate images (default is to rotate according to EXIF data).

`--mtime`
`--no-mtime`
 Defines whether to set the file's mtime, using `DateTimeOriginal` tag value. Use `--no-mtime` to set it to current time stamp after processing.

`--no-ren-rot-tag-mtm`
`--nochg`
 Do not rename, rotate, tag and mtime images. It saves files from any changes while allows to do aggregation, contact sheet generation e.t.c.

`--keywordize`
`--no-keywordize`
 Whether to keywordize. Default is to not. Be careful, since with this option enabled, the existing keywords are rewritten. The keywords are taken from `.keywords` file or file specified with option `--keywords-file`.

`-k 'filename'`
`--keywords-file 'filename'`
 Path to the file with keywords. Its format is a keyword per line. The CR and LF symbols are removed. Empty (only whitespace) lines are ignored. Any leading and trailing whitespace is removed. For example, the line `"_Test_ CRLF"` is read as `"_Test_"`.

`--keywords-replace`
`--no-keywords-replace`
 Replace existing Keywords tag list rather than add new values to it. Default is not to replace.

`--comment-file 'filename'`
 File with commentaries. It is a low priority alias to `TagFile = Comment: 'filename'`.

`--user-comment string`
 A low priority alias to `--tag UserComment: string`

`-t tag`
`--tag tag`
 See the section "TAGS", for the detailed description

`--no-tags`
 No tags will be written. This is the default.

‘--use-color’
 ‘--no-use-color’
 Colorize output. This does NOT work under Win32.

‘--dry-run’
 Do not do anything, only print would have been done.

‘--use-ipc’
 ‘--no-use-ipc’
 Rotate thumbnails using pipe, rather than files. This does NOT work under Win32.

‘-v’
 Increase debugging level by 1. Debugging levels from 1 to 4 are internal levels, the levels from 5 till 9 are equivalent to levels 1-5 levels ExifTool with the maximum verbosity for renrot.

‘-?’
 ‘--help’
 Display short usage summary and exit.

‘--version’
 Output version information and exit.

2.1.2 Aggregation Options.

‘--aggr-mode *mode*’
 Run aggregation process in given *mode*. Possible values are: none, delta or template.

‘--aggr-delta *number*’
 Aggregation time delta, in seconds. Files with DateTime-Original and ones of the previous file delta, greater than ‘--aggr-delta’ are placed in the directory, with the name constructed by concatenating the value of the ‘--aggr-directory’ option and the directory name counter.

‘--aggr-directory *directory*’
 Aggregation directory name prefix (default is “Images”)

‘-a *template*’
 ‘--aggr-template *template*’
 File name template to use for file aggregation. Images are aggregated by date/time patterns. You may use combination of ‘%d’, ‘%H’, ‘%M’, ‘%m’, ‘%S’, ‘%Y’, and ‘%y’ meta-characters. The template can also be defined in the configuration file (see Aggregation Template variable). The default is ‘%Y%m%d’. For the detailed description, refer to ‘--name-template’ option. For practical uses, see see [Section 3.1 \[template examples\]](#), page 15 section.

'--aggr-virtual'

'--no-aggr-virtual'

Defines virtualization for existent aggregation modes. If set, resulting files are placed into the directory given by the command line option '--aggr-virtual-directory' or configuration file option aggregation virtual directory then any changes required by the current aggregation mode are applied. The main effect of '--aggr-virtual' is that any files to be aggregated remain untouched in their places, and symlinks pointing to them are stored in the directory tree created. Use '--no-aggr-virtual' to prevent virtualization.

'--aggr-virtual-directory *directory*'

Store virtual aggregation files in *directory*

2.1.3 Contact Sheet Options.

'--cs'

'--contact-sheet'

Create the contact sheet. Currently it works with Thumbnail-Image EXIFs and the files defined as thumbnails (see the option '--cs-thm', below)

'--cs-file *'filename''*

'--contact-sheet-file *'filename''*

Base file name for montage files.

'--cs-dir *directory*'

'--contact-sheet-dir *directory*'

Temporary directory for montage (created in the begining and deleted at the end of the process)

'--cs-thm'

'--contact-sheet-thm'

Files for the montage are already thumbnails

Options bellow are native ImageMagic montage options look ImageMagick documentation for montage options: `montage --help` and <http://www.imagemagick.org/>

Note please, for *color*¹ use RGB triplets only like '000' for the 'black' or 'F00' for the 'red'.

'--cs-tile *geometry*'

'--contact-sheet-tile *geometry*'

Tile $M \times N^2$.

¹ see <http://www.imagemagick.org/script/color.php>

² ImageMagick option '-tile'

```

'--cs-title string'
'--contact-sheet-title string'
    Set the title of the contact sheet3.

'--cs-bg color'
'--contact-sheet-bg color'
    Background color4.

'--cs-bd color'
'--contact-sheet-bd color'
    Border color5.

'--contact-sheet-mt color'
    Frame color6.

'--contact-sheet-fn string'
    Render text with this font7.

'--cs-fl color'
'--contact-sheet-fl color'
    Color to fill the text8.

'--cs-lb string'
'--contact-sheet-lb string'
    Assign a label to an image9.

'--cs-fr geometry'
'--contact-sheet-fr geometry'
    Surround image with an ornamental border in N pixels10.

'--cs-pntsz number'
'--contact-sheet-pntsz number'
    Font point size (IM: '-pointsize').

'--cs-shadow'
'--contact-sheet-shadow'
    Set the shadow beneath a tile to simulate depth11.

'--cs-thm-fl color'
'--contact-sheet-thm-fl color'
    Color to fill the text in generated thumbnail.

```

³ ImageMagick option '-title'

⁴ ImageMagick option '-background'

⁵ ImageMagick option '-bordercolor'

⁶ ImageMagick option '-mattecolor'

⁷ ImageMagick option '-font'

⁸ ImageMagick option '-fill'

⁹ ImageMagick option '-label'

¹⁰ ImageMagick option '-frame'

¹¹ ImageMagick option '-shadow'

```

'--cs-thm-fn string'
'--contact-sheet-thm-fn string'
    Render the generated thumbnail text with this font12.

'--cs-thm-grfr color'
'--contact-sheet-thm-grfr color'
    Generated thumbnail background gradient color-from

'--cs-thm-grto color'
'--contact-sheet-thm-grto color'
    Generated thumbnail background gradient color-to

'--cs-thm-text string'
'--contact-sheet-thm-text string'
    Generated thumbnail text

'--cs-rank'
'--contact-sheet-rank'
    Run ranking process according the ranks defined with
    '--cs-rank-file'
    The result is the colored frames of the thumbnails of contact
    sheets.

'--cs-rank-file 'filename''
'--contact-sheet-rank-file 'filename''
    Path to the file with ranks. Its format is a "file rankcolor" per
    line. Filename separated from the color by space or tabulation.
        01.file.jpg red
        04.file.JPG green
    Only the files found in the file will be ranked.

```

2.2 Configuration File

A configuration file can be used to set some variables. Renrot looks for its configuration file, named `renrot.conf`, in system configuration directories `/etc/renrot` and `</usr/local/etc/renrot>`, and in subdirectory `.renrot.` of the current user home directory. An alternate configuration file can also be explicitly given using the `'--config-file option'`.

The configuration file consists of a set of case-insensitive keywords and their values separated by equal sign. Each such keyword/value pair occupies a separate line. Boolean variables can have one of the following values: `'0'`, `'No'`, `'False'`, `'Off'` for `'false'`, and `'1'`, `'Yes'`, `'True'`, `'On'` for `'true'`.

The variables defined for use in configuration file are:

```

'use IPC'
    Use IPC for execution external command

```

¹² ImageMagick option `'-font'`

`'use color'`

Use colored output (not works under MS Windows) Default color setup for different facilities:

```
color = debug: 'green'  
color = error: 'magenta'  
color = fatal: 'red'  
color = info: 'bold'  
color = process: 'white'  
color = warning: 'cyan'
```

`'mtime'`

Set to `'Yes'` for synchronize mtime with tags, otherwise set it to `'No'`.

`'name template'`

File name template (see `'--name-template'`, for the description).

`'trim'`

Set to `'Yes'` to trim rotated images when using `jpegtran(1)`.

`'aggregation mode'`

Aggregation mode, possible values are: none, delta or template.

`'aggregation template'`

Aggregation template, which defines the file aggregation (see `'--aggr-template'`, for the description).

`'aggregation virtual'`

Defines virtualization for the existing aggregation modes (see the `'--aggr-virtual'` option).

`'aggregation virtual directory'`

Defines a directory for virtual aggregation (see `'--aggr-virtual-directory'` option).

`'Tag'`

`'TagFile'`

Refer to the section "TAGS", for the detailed description

`'include'`

Include the named file.

3 Examples

Different aspects examples

3.1 Template examples.

3.1.1 Filename Template Examples

The name template

```
'01.%c.%Y%m%d%H%M%S.%i.shtr-#ExposureTime#.f-#FNumber#.iso-#ISO#'
```

can produce the following names according existent EXIF tags:

```
01.01.20030414103656.NA.shtr-1_40.f-2.8.iso-160.jpg  
01.02.20040131230857.100-0078.shtr-1_320.f-2.8.iso-50.jpg  
01.03.20000820222108.NA.shtr-.f-.iso-jpg
```

3.1.2 Aggregation Template Examples

Look at Aggregation examples

3.2 Aggregation examples.

3.2.1 Aggregation Examples

The following command:

```
$ renrot --aggr-mode=template --aggr-template "%Y%m%d" -e jpg
```

produces the following aggregation:

these three files

```
01.11.20030414103656.NA.jpg
```

```
01.12.20030414103813.NA.jpg
```

```
01.13.20030414103959.NA.jpg
```

will be moved to the directory, named '20030414', and

```
01.14.20040131130857.100-0078.jpg
```

```
01.15.20040131131857.100-0079.jpg
```

```
01.16.20040131133019.100-0080.jpg
```

will be moved to the directory, named '20040131'.

3.2.2 Virtual Aggregation

If your file system supports links, than you can use virtual aggregation algorithm.

The following command:

```
$ renrot -e jpg --aggr-mode template --aggr-virtual \  
--aggr-virtual-directory VIRT_AGGR_DIR
```

produces the following aggregation:

for these three files

```
01.11.20030414103656.NA.jpg
```

```
01.12.20030414103813.NA.jpg
```

```
01.13.20030414103959.NA.jpg
```

links will be created in the directory, 'VIRT_AGGR_DIR/20030414', and for

```
01.14.20040131130857.100-0078.jpg
```

```
01.15.20040131131857.100-0079.jpg
```

```
01.16.20040131133019.100-0080.jpg
```

links will be created in the directory, named 'VIRT_AGGR_DIR/20040131'.

The very files will remain in the working directory.

3.3 Contact Sheet Generation Examples

Lets say we have these files we want to make contact sheet for:

```
$ ls -al
-rw-r--r-- 1 zeus  staff  1410248  3 jun  2006 060603.166-6630.JPG
-rw-r--r-- 1 zeus  staff  1119839 21 jun  2006 060621.166-6653.JPG
-rw-r--r-- 1 zeus  staff  1235431 20 jan  2007 070120.182-8287.JPG
-rw-r--r-- 1 zeus  staff  1307705  7 feb  2007 070207.183-8309.JPG
-rw-r--r-- 1 zeus  staff  1191954 14 feb  2007 070214.183-8322.JPG
-rw-r--r-- 1 zeus  staff   701277  9 jul  2007 070709.192-9265.JPG
-rw-r--r-- 1 zeus  staff  1056367 27 jul  2007 070727.192-9291.JPG
-rw-r--r-- 1 zeus  staff  1009504 22 aug  2007 070822.193-9342.JPG
-rw-r--r-- 1 zeus  staff   702855  1 sen  2007 070901.193-9366.JPG
```

3.3.1 Contact Sheet Examples

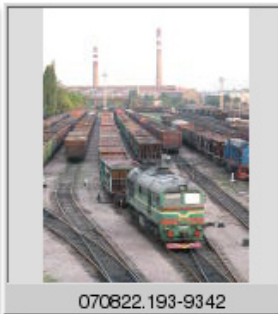
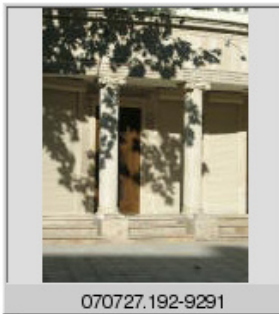
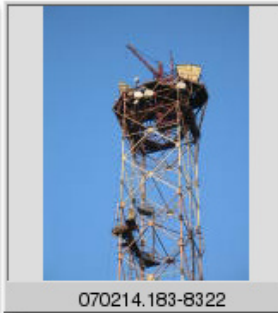
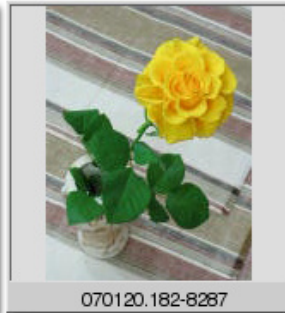
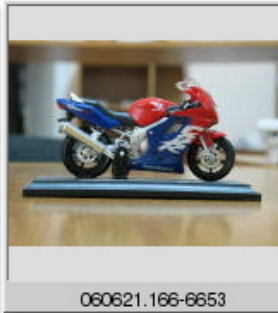
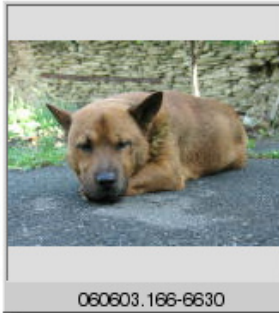
Simple and almost default variant is:

```
$ renrot -e JPG -n '%y%m%d.%i' --cs-title 'CS Sample' --cs-tile '3x3'
```

the result of the command can be such:

RenRot v.1.0
<https://ps.gsu.org.ua/projects/renrot/>

CS Sample



In case we need to make contact sheet file for the images on the file system we have no write access to (like the images written on the CD-ROM), than we have to set contact sheet directory and contact sheet file manually.

```
$ renrot -e JPG --cs-dir '/tmp/CS.TMP' --cs-file 'CS.file.jpg'
```

If in `renrot.rc` the option '`contact sheet dir = /tmp/CS.TMP`' was set globally, than you can say only:

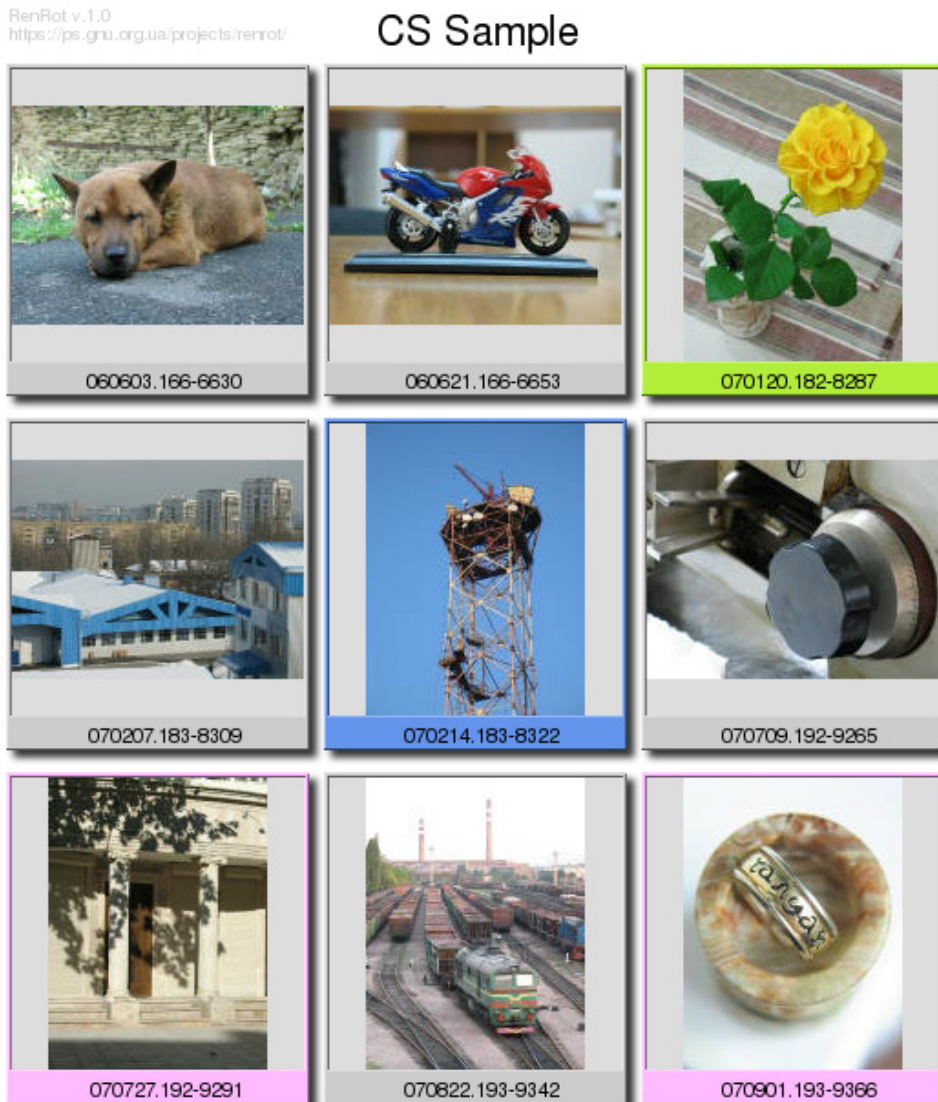
```
$ renrot -e JPG --cs-file 'CS.file.jpg'
```

3.3.2 Contact Sheet Ranking

Lets rank thumbnail images in contact sheet with colors

```
'070120.182-8287.JPG'      OliveDrab2
'070214.183-8322.JPG'      CornflowerBlue
'070727.192-9291.JPG'      plum1
'070901.193-9366.JPG'      plum1
$ renrot -e JPG -n '%y%m%d.%i' --cs-title 'CS Sample' --cs-tile '3x3'
--cs-rank-file .rank
```

the result of the command can be such:



3.4 Tag Examples

3.4.1 Personal Info Tags

Personal information is set to XMP tags. Defaults are undefined.

```
Tag = CreatorContactInfoCiAdrCity [XMP]: 'Donetsk'  
Tag = CreatorContactInfoCiAdrCtry [XMP]: 'UA'  
Tag = CreatorContactInfoCiAdrExtadr [XMP]: '1 bld., Some St.'  
Tag = CreatorContactInfoCiAdrPcode [XMP]: '12345'  
Tag = CreatorContactInfoCiAdrRegion [XMP]: 'Donetsk'  
Tag = CreatorContactInfoCiEmailWork [XMP]: 'email at some dot domain'  
Tag = CreatorContactInfoCiTelWork [XMP]: '+123456789'  
Tag = CreatorContactInfoCiUrlWork [XMP]: 'https://ps.gnu.org.ua/projects/  
renrot/'  
  
Tag = Artist [EXIF]: 'John Doe'  
Tag = ImageDescription [EXIF]: 'Just to put anything here.'
```

3.4.2 GPS Tags

For more info on GPS tags consult:

<http://www.sno.phy.queensu.ca/~phil/exiftool/TagNames/GPS.html>

Following sample is given for Donetsk, Ukraine:

```
Tag = GPSLatitudeRef [GPS]: 'N'           # N for Noth and S for South
Tag = GPSLatitude [GPS]: '47 59 06'       # in form "%d %.2f %.2f"
Tag = GPSLongitudeRef [GPS]: 'E'         # E for East and W for West
Tag = GPSLongitude [GPS]: '37 46 48'      # in form "%d %.2f %.2f"
Tag = GPSAltitudeRef [GPS]: 'above'      # above as Above, bellow as Bellow
Tag = GPSAltitude [GPS]: '225'           # in form "%d"
Tag = GPSTimeStamp [GPS]: ''              # in form "YYYY:MM:DD"
Tag = GPSTimeStamp [GPS]: ''              # in form "HH MM SS"
```

4 Tags

A *tag* is defined by the following combination: `TagName [Group]: 'value'`. The defined tags are selected to be set and written to the EXIF tree using the command line option `--tag` and/or configuration file options `Tag`.

The syntax of the command line option `--tag` is:

```
--tag *TagName [Group]: 'value'*
```

The syntax of the configuration file option `Tag`:

```
Tag = *TagName [Group]: 'value'*
```

The parameters `TagName` and `Group` are passed to `ExifTool` as is. The name of the group must be enclosed in square brackets. Its `value` (after the semicolon) can be enclosed in single quotes.

The `TagFile` keyword allows to set multi-line tags from a file. Its syntax is:

```
TagFile = *TagName [Group]:* 'filename'
```

The following table summarizes some tags that can be used, with the `--tag` option and `Tag` keyword:

<code>'Copyright'</code>	Copyright notes.
<code>'Comment'</code>	General comment.
<code>'UserComment'</code>	Anything you would like to put as a comment.
<code>'CreatorContactInfoCiAdrCity'</code>	A city tag.
<code>'CreatorContactInfoCiAdrCtry'</code>	A country tag.
<code>'CreatorContactInfoCiAdrExtadr'</code>	Extended address (usually includes street and apartment number).
<code>'CreatorContactInfoCiAdrPcode'</code>	Zip code.
<code>'CreatorContactInfoCiAdrRegion'</code>	Region.
<code>'CreatorContactInfoCiEmailWork'</code>	Email.
<code>'CreatorContactInfoCiTelWork'</code>	Phone number.
<code>'CreatorContactInfoCiUrlWork'</code>	URL.

Additionally, you can add any known tag here, using 'Tag' or 'TagFile' options as described above.

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