

01-extract-exif-summary-V01.qmd

Photography Workflow Documentation

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Image Organizer with Metadata Captions

1. Purpose

The Image Organizer with Metadata Captions is a professional image management tool designed to:

- **Organize and backup image collections** from any folder structure
- **Extract comprehensive metadata** from image files including EXIF data (camera settings, date taken, etc.)
- **Generate detailed CSV reports** for each image with description-value pairs for easy analysis
- **Create timestamped output folders** to maintain organized archives
- **Handle duplicate filenames** automatically to prevent overwriting

This tool is particularly useful for photographers, digital asset managers, and anyone who needs to catalog and analyze image collections with their technical metadata.

2. Inputs

Required Input

- **Source Folder:** A folder containing images you want to organize and analyze
 - The folder can contain subfolders (the tool scans recursively)
 - Images can be in any supported format

Supported Image Formats

- `.jpg`, `.jpeg` (JPEG images)
- `.png` (PNG images)
- `.gif` (GIF images)
- `.bmp` (Bitmap images)
- `.tiff` (TIFF images)
- `.webp` (WebP images)

- **Note:** File extensions are case-insensitive (.JPG, .JPEG, .PNG, etc. are all supported)

System Requirements

- **Python 3.6+** installed on your system
- **Required libraries:**
 - pillow (for image processing)
 - tkinter (for GUI dialogs - usually included with Python)

3. Steps

Step 1: Installation and Setup

1. Ensure Python 3.6+ is installed on your system
2. Install required dependencies:

```
pip install Pillow
```

3. Download the script file 01-extract_exif_summary-v01.py

Step 2: Running the Script

1. Open a terminal/command prompt
2. Navigate to the directory containing the script
3. Run the script:

```
python 01-extract_exif_summary-v01.py
```

Step 3: Folder Selection

1. A dialog box will open asking you to select a folder
2. Browse and select the folder containing your images
3. Click “Select Folder” to confirm your choice

Step 4: Automated Processing

The script will automatically:

1. **Scan the selected folder** and all subfolders for images
2. **Create a timestamped output folder** in the same directory as your source folder
3. **Process each image** by:
 - Extracting metadata and EXIF data
 - Copying the image to the output folder
 - Creating a corresponding CSV metadata file
4. **Display progress** in the terminal showing:
 - Images found and processed
 - Metadata extraction details
 - Copy operations and CSV file creation

Step 5: Completion

1. A completion dialog will show the processing summary
2. The output folder will be opened/displayed for your review

4. Outputs

Output Folder Structure

The script creates a new folder with the naming convention:

`[original-folder-name]-YYYY-MM-DD--HH-MM`

Example: If your source folder is named “Vacation Photos”, the output might be:

`Vacation Photos-2025-07-10--14-30`

Contents of Output Folder

1. Image Files

- **All images** from the source folder and subfolders
- **Duplicate handling:** If files have the same name, they're renamed with a counter (e.g., photo_1.jpg, photo_2.jpg)
- **Preserved quality:** Images are copied without compression or modification

2. Metadata CSV Files

For each image, a corresponding CSV file is created with the naming convention:

[image-filename]_metadata.csv

Example: For IMG_1234.jpg, the metadata file would be IMG_1234_metadata.csv

CSV File Structure

Each CSV file contains two columns:

Description	Value
Filename	[Original filename]
Width	[Image width in pixels]
Height	[Image height in pixels]
Resolution	[Width x Height]
Format	[Image format: JPEG, PNG, etc.]
Camera Make	[Camera manufacturer]
Camera Model	[Camera model]
Camera	[Make + Model combined]
Date Taken	[Date and time photo was taken]
Focal Length	[Lens focal length in mm]
Aperture	[f-stop value]
ISO	[ISO sensitivity]
Exposure Time	[Shutter speed in readable format]
Flash	[Flash settings]
White Balance	[White balance mode]

Description	Value
Color Space	[Color space information]
Software	[Software used to process image]

Sample CSV Output

```

Description,Value
Filename,IMG_1234.jpg
Width,4000
Height,3000
Resolution,4000x3000
Format,JPEG
Camera Make,Canon
Camera Model,EOS 5D Mark IV
Camera,Canon EOS 5D Mark IV
Date Taken,2025:07:10 14:30:25
Focal Length,50mm
Aperture,f/2.8
ISO,400
Exposure Time,1/125s
Flash,Flash did not fire
White Balance,Auto
Color Space,sRGB
Software,Adobe Lightroom

```

Processing Summary

At completion, you'll receive:

- **Success count:** Number of images successfully processed
- **Error count:** Number of images that encountered errors

- **Output folder path:** Location of the organized images and metadata

Benefits of This Output Format

- **Easy analysis:** CSV format allows for easy import into spreadsheet applications
- **Searchable metadata:** Find images by camera settings, date, or other criteria
- **Backup with context:** Organized images retain their metadata information
- **Professional archiving:** Timestamped folders prevent accidental overwrites
- **Batch processing:** Handle hundreds or thousands of images automatically

Resources & Downloads

Download all Python scripts and resources from this book:

www.chatbizdb.com/python-book

All code examples, templates, and additional materials are available for download. Please do not share this link - Thank you.

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```
[1] "Time taken to run the Quarto document: 0.0966310501098633 seconds"
```