

02-split-images-based-on-type-V01

Photography Workflow Documentation

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Image File Organizer - Professional Image Management Tool

1. Purpose

The Image File Organizer is a specialized tool designed to automatically sort and organize image collections by file type. This professional-grade utility addresses the common challenge of managing mixed image formats in photography workflows, digital asset management, and content organization.

Primary Functions

- **Automatic Type-Based Sorting:** Intelligently categorizes images into format-specific folders (JPG, PNG, RAW, etc.)
- **Comprehensive Format Support:** Handles both standard image formats and professional RAW camera files
- **Non-Destructive Organization:** Creates organized copies while preserving original files untouched
- **Timestamped Archive Creation:** Generates uniquely named output folders to prevent overwrites
- **Professional Workflow Integration:** Supports photography studios, content creators, and digital asset managers

Ideal Use Cases

Photography Workflows

- **Mixed Format Shoots:** Separate RAW files from processed JPEGs for efficient editing workflows
- **Client Deliverables:** Organize final deliverables by format type for easy client access
- **Archive Management:** Sort historical photo collections by format for storage optimization
- **Backup Preparation:** Pre-organize files for format-specific backup strategies

Digital Asset Management

- **Content Libraries:** Sort web graphics, print materials, and source files into appropriate categories
- **Format-Specific Processing:** Group images for batch processing by format requirements
- **Storage Optimization:** Organize files for format-appropriate compression and storage solutions
- **Team Collaboration:** Create standardized folder structures for multi-user environments

Technical Applications

- **Quality Control:** Separate different quality levels and formats for review processes
- **Conversion Workflows:** Organize source files for batch format conversion operations
- **Platform Distribution:** Sort images for platform-specific requirements (web vs. print vs. social media)
- **Compliance Management:** Organize files according to format-specific retention policies

Key Benefits

- **Time Efficiency:** Eliminates manual sorting of hundreds or thousands of image files
- **Error Reduction:** Automated process prevents human sorting errors and missed files
- **Workflow Standardization:** Creates consistent folder structures across projects and teams
- **Original Preservation:** Maintains complete backup of source files during organization
- **Scalability:** Handles collections from dozens to thousands of images efficiently

2. Inputs

Required Input

- **Source Directory:** A folder containing mixed image files to be organized
 - **Single-Level Processing:** Organizes files from the selected folder only (does not process subfolders)
 - **Mixed Format Support:** Handles any combination of supported image formats
 - **File Preservation:** Original files remain completely unchanged in source location

Comprehensive Format Support

Standard Image Formats

- **JPEG:** `.jpg`, `.jpeg` (compressed photographic images)
- **PNG:** `.png` (lossless compression, transparency support)
- **GIF:** `.gif` (animated graphics, limited color palette)
- **BMP:** `.bmp` (Windows bitmap, uncompressed)
- **TIFF:** `.tiff`, `.tif` (high-quality, professional imaging)
- **WebP:** `.webp` (modern web format with superior compression)
- **SVG:** `.svg` (scalable vector graphics)
- **ICO:** `.ico` (icon files, multiple resolutions)

Professional RAW Camera Formats

- **Canon:** `.cr2`, `.cr3` (Canon Raw Version 2 and 3)
- **Nikon:** `.nef` (Nikon Electronic Format)
- **Sony:** `.arw`, `.srf`, `.sr2` (Sony's Alpha Raw format)
- **Fujifilm:** `.raf` (Raw Format from Fujifilm)
- **Adobe:** `.dng` (Digital Negative, open standard)
- **Olympus:** `.orf` (Olympus Raw Format)
- **Panasonic:** `.rw2` (Raw Format Version 2)
- **Pentax:** `.pef` (Pentax Electronic Format)
- **Samsung:** `.srw` (Samsung Raw format)
- **Sigma:** `.x3f` (Sigma's X3F Raw format)
- **Leica:** `.rwl`, `.dng` (Leica Raw formats)
- **Mamiya:** `.mef` (Mamiya Electronic Format)
- **Phase One:** `.iiq` (Intelligent Image Quality)
- **Hasselblad:** `.3fr` (3F Raw format)
- **Generic RAW:** `.raw`, `.dcr`, `.kdc`, `.erf`, `.mos`, `.ptx`, `.pxn`, `.r3d`, `.fff`, `.k25`, `.cap`, `.dcs`, `.drf`

File Extension Handling

- **Case Insensitive:** All extensions work regardless of case (.JPG, .jpg, .Jpg, etc.)
- **Automatic Detection:** File types determined by extension analysis
- **Unknown Format Handling:** Non-image files are ignored without error

System Requirements

Software Dependencies

- **Python 3.6+:** Modern Python installation required
- **Tkinter:** GUI framework (included with most Python installations)
- **Standard Libraries:** Built-in modules only (os, shutil, datetime, sys)

Hardware Requirements

- **Minimum:** 1GB RAM, sufficient disk space for copies
- **Recommended:** 2GB+ RAM for large collections
- **Storage:** Requires free space equal to source folder size for copies
- **Performance:** Processing speed approximately 100-500 files per minute

Operating System Compatibility

- **Windows:** 10, 11 (all editions) with UTF-8 encoding support
- **macOS:** 10.12+ (Sierra and newer)
- **Linux:** Any modern distribution with Python 3.6+

3. Steps

Step 1: Environment Preparation

Verify Python Installation

```
python --version  
# Expected output: Python 3.6.x or higher
```

Download and Prepare Script

1. Save `03-split-images-based-on-type-v01.py` to your preferred location
2. Ensure the script file has appropriate permissions
3. Navigate to the script directory in your terminal/command prompt

Step 2: Script Execution

Launch the Application

```
python 03-split-images-based-on-type-v01.py
```

Welcome Screen

The application displays: - Tool name and version information - Copyright and licensing details - Processing overview and step preview

Step 3: Interactive Folder Selection

Folder Selection Dialog

1. **GUI Dialog Appearance:** A file browser dialog opens automatically
2. **Navigation:** Browse to locate your source image folder
3. **Selection:** Click on the folder containing your mixed image files
4. **Confirmation:** Click “Select Folder” to proceed
5. **Validation:** The system confirms your selection and displays the folder path

Selection Criteria

- **Choose the Root Folder:** Select the main folder containing your images
- **Single-Level Processing:** The tool processes files in the selected folder only
- **Mixed Content Handling:** Non-image files in the folder are automatically ignored

Step 4: Automated Organization Process

The script performs five automated phases:

Phase 1: Folder Creation

- **Timestamp Generation:** Creates unique timestamp in format YYYY-MM-DD--HH-MM
- **Output Folder Creation:** Generates folder named [source-folder]-organized-[timestamp]
- **Location:** Created in the same directory as your source folder
- **Example:** Photos-organized-2025-07-10--14-30

Phase 2: File Discovery

- **Format Detection:** Scans all files in source folder for supported image formats
- **Type Categorization:** Groups files by format type (JPG, PNG, RAW, etc.)
- **Statistics Display:** Shows count of files found for each format type
- **Progress Reporting:** Real-time console output of discovery process

Phase 3: Subfolder Structure Creation

- **Type-Based Folders:** Creates subfolder for each image format found
- **Naming Convention:** Uses uppercase format names (JPG, PNG, RAF, etc.)
- **Dynamic Creation:** Only creates folders for formats actually present
- **Structure Validation:** Confirms successful folder creation for each type

Phase 4: File Copying Process

- **Preservation Copying:** Uses `shutil.copy2()` to preserve file metadata and timestamps
- **Duplicate Handling:** Automatically renames files with identical names using incremental numbering
- **Progress Tracking:** Real-time display of copying progress for each format
- **Error Handling:** Continues processing if individual files encounter issues

Phase 5: Completion Reporting

- **Statistics Summary:** Displays total files copied and any errors encountered

- **Output Location:** Provides full path to organized folder
- **GUI Confirmation:** Pop-up dialog confirms successful completion

Step 5: Result Verification

Immediate Verification

1. **Console Summary:** Review processing statistics in terminal output
2. **Folder Inspection:** Navigate to the timestamped output folder
3. **Structure Validation:** Confirm subfolder creation for each image type
4. **File Count Verification:** Spot-check that file counts match discovery phase

Quality Assurance

1. **Original Preservation:** Verify source folder remains unchanged
2. **Complete Transfer:** Confirm all image files have been copied
3. **Organization Accuracy:** Verify files are in correct format-specific folders
4. **Duplicate Resolution:** Check that renamed duplicates are properly handled

4. Outputs

Primary Output Structure

The tool creates a comprehensive, organized directory structure:

```
[Source-Folder-Name]-organized-YYYY-MM-DD--HH-MM/
├─ JPG/
│   ├── photo001.jpg
│   ├── photo002.jpg
│   └─ vacation_sunset.jpg
├─ RAF/
│   ├── DSCF1234.raf
│   ├── DSCF1235.raf
│   └─ portrait_session_01.raf
```



```
├─ PNG/
│   ├── logo_design.png
│   ├── screenshot_01.png
│   └── transparent_graphic.png
├─ CR2/
│   ├── IMG_5678.cr2
│   └── wedding_ceremony_001.cr2
└─ DNG/
    ├── edited_photo.dng
    └── converted_raw.dng
```

Naming Conventions and Structure

Timestamped Root Folder

- **Format:** [original-folder-name]-organized-YYYY-MM-DD--HH-MM
- **Example:** Summer_Photos-organized-2025-07-10--14-30
- **Purpose:** Prevents overwriting existing organized folders
- **Location:** Created at the same directory level as source folder

Format-Specific Subfolders

- **Naming:** Uppercase format extensions (JPG, PNG, RAF, CR2, etc.)
- **Dynamic Creation:** Only formats present in source folder get subfolders
- **Alphabetical Listing:** Folders appear in alphabetical order in file browsers
- **Consistent Structure:** Same organization pattern regardless of source content

File Naming and Duplicate Handling

- **Original Names Preserved:** Files maintain their original names when possible
- **Duplicate Resolution:** Automatic renaming for files with identical names
 - **First Instance:** photo.jpg → photo.jpg
 - **Second Instance:** photo.jpg → photo_1.jpg

- **Third Instance:** photo.jpg → photo_2.jpg
- **Pattern:** Continues with incremental numbering
- **Metadata Preservation:** File creation dates, modification dates, and other metadata preserved

Detailed Output Examples

Example 1: Photography Studio Organization

Source: Client_Session_2025/ (mixed RAW and JPEG files)

Output: Client_Session_2025-organized-2025-07-10--14-30/

```
|— CR2/           (34 files - Canon RAW files)
|— JPG/           (127 files - processed images)
└— DNG/           (8 files - converted files)
```

Example 2: Web Design Asset Organization

Source: Website_Graphics/ (mixed web formats)

Output: Website_Graphics-organized-2025-07-10--14-30/

```
|— PNG/           (45 files - logos and graphics with transparency)
|— JPG/           (78 files - photographic content)
|— SVG/           (23 files - scalable vector icons)
|— WEBP/          (12 files - optimized web images)
└— GIF/           (6 files - animated elements)
```

Example 3: Archive Digitization Project

Source: Historical_Photos/ (mixed vintage and modern formats)

Output: Historical_Photos-organized-2025-07-10--14-30/

```
|— JPG/           (567 files - digitized prints)
|— TIFF/          (89 files - high-resolution scans)
```

```
|— PNG/                (23 files - restored images)
|— BMP/                (12 files - legacy format images)
```

Processing Reports and Statistics

Console Output Summary

```
□ ORGANIZATION COMPLETE!
□ Successfully copied: 156 files
□ Organized folder: /Users/photographer/Photos-organized-2025-
07-10--14-30
```

File Type Distribution:

- JPG: 89 files
- RAF: 34 files
- PNG: 23 files
- CR2: 10 files

Success Metrics

- **Total Files Processed:** Complete count of successfully organized files
- **Format Distribution:** Breakdown showing count per image format
- **Error Reporting:** Details of any files that couldn't be processed
- **Processing Time:** Duration of organization process
- **Output Location:** Full path to organized results

Professional Applications

Workflow Integration Benefits

- **Editing Efficiency:** RAW files separated for processing, JPEGs ready for review
- **Storage Optimization:** Format-specific compression and archival strategies
- **Team Collaboration:** Standardized organization for multi-user access
- **Client Delivery:** Clean, professional folder structure for client handoffs

Quality Assurance Features

- **Original Preservation:** Source files remain completely untouched
- **Metadata Retention:** File timestamps and properties preserved during copying
- **Duplicate Safety:** Automatic handling prevents file loss from naming conflicts
- **Process Validation:** Comprehensive reporting enables verification of results

Scalability and Performance

- **Large Collection Handling:** Efficiently processes thousands of files
- **Memory Efficiency:** Processes files individually to minimize RAM usage
- **Cross-Platform Reliability:** Consistent results across operating systems
- **UTF-8 Support:** Proper handling of international characters in filenames

Next Steps After Organization

1. **Verify Results:** Confirm all files are properly organized and source folder is intact
2. **Format-Specific Processing:** Apply appropriate workflows to each format type
3. **Archive Strategy:** Implement backup procedures for organized structure
4. **Team Distribution:** Share organized folders with appropriate team members
5. **Future Organization:** Use same tool for consistent organization of new image collections““ {r setup-run-cmd, include=FALSE}

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: 0.0968120098114014 seconds"
```