

Duplicate File Finder - User Guide

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Introduction

What is Duplicate File Finder?

Duplicate File Finder is a powerful tool that helps you identify and remove duplicate images and videos from your computer. It saves disk space and helps organize your media collection by finding:

- **Exact duplicates** - Files with identical content
- **Visual duplicates** - Images/videos that look the same but may have been resized or edited
- **Similar files** - Files with similar names that might be copies

Key Features

Smart Detection

- Finds exact duplicate files using hash comparison
- Detects visually similar images (70-90% similarity threshold)
- Identifies files with similar naming patterns

✓ Safe & Reversible

- Files moved to quarantine folder (not permanently deleted)
- Complete deletion log for every session
- Easy file restoration if needed

✓ User-Friendly Interface

- Simple desktop application
- Interactive HTML reports with thumbnails
- Visual side-by-side comparison

✓ Comprehensive Format Support

- **Images:** JPG, JPEG, PNG, GIF, BMP, WebP, TIFF, ICO
 - **Videos:** MP4, AVI, MOV, MKV, WMV, FLV, WebM, M4V, MPG, MPEG
-

Installation

System Requirements

- **Operating System:** Windows 7 or later
- **RAM:** 4GB minimum (8GB recommended for large scans)
- **Disk Space:** 100MB for application + space for quarantine
- **Display:** 1024x768 minimum resolution

Installation Steps

1. Download the Installer

- Download `DuplicateFileFinder_Setup_v1.0.0.exe`
- Save to your Downloads folder

2. Run the Installer

- Double-click the installer file
- Click "Yes" if Windows asks for permission
- Follow the installation wizard

3. Choose Installation Location

- Default: `C:\Program Files\Duplicate File Finder`

- Or choose a custom location

4. Select Additional Options

- ☒ Create desktop shortcut (recommended)
- ☐ Create Quick Launch icon (optional)

5. Complete Installation

- Click "Install" to begin
- Wait for installation to complete
- Click "Finish" to launch the application

First Launch

When you first launch the application, you'll see:

- Main application window
 - Folder selection area
 - Scan button
 - Information about how the tool works
-

Getting Started

Quick Start Guide

5 Simple Steps to Clean Your Duplicates:

1. Launch Application

- Double-click the desktop icon, or
- Go to Start Menu → Duplicate File Finder

2. Select Folder

- Click the "Browse..." button
- Choose a folder to scan
- Example: `C:\Users\YourName\Pictures`

3. Start Scan

- Click "Scan for Duplicates"

- Wait while the application scans
- Progress bar shows current status

4. Review Results

- Report opens automatically in your browser
- Review duplicate groups
- Select files to delete

5. Delete Duplicates

- Check boxes next to duplicates
- Click "Delete Selected"
- Files move to quarantine folder

How It Works

Detection Methods

1. Exact Duplicate Detection

The application computes a unique "fingerprint" (MD5 hash) for each file:

File: photo.jpg → Hash: a3d5f8e9c2b1...

File: photo_copy.jpg → Hash: a3d5f8e9c2b1...

✓ Match! These are exact duplicates

What this catches:

- Exact copies made with Copy/Paste
- Downloaded files saved multiple times
- Backups with different names

2. Visual Similarity Detection

For images and videos, the application analyzes visual content:

Original: vacation.jpg (1920x1080)
Resized: vacation_thumb.jpg (800x600)
Similarity: 92%
✓ Visually similar! Likely the same image

What this catches:

- Resized images (thumbnails, web versions)
- Cropped photos
- Edited images with filters
- Different quality compressions

Similarity Thresholds:

- **High (85-90%):** Resized or cropped versions
- **Low (70-85%):** Edited or filtered versions

3. Filename Pattern Matching

The application recognizes common duplicate naming patterns:

photo.jpg
photo (1).jpg ← Copy pattern
photo_copy.jpg ← Copy suffix
photo - copy.jpg ← Copy variation
✓ Name match! Likely related files

Patterns detected:

- Windows copy suffixes: (1), (2), (3)
- Copy keywords: _copy, - copy, -copy
- Numbered versions: _1, _2

File Selection Priority

When grouping duplicates, the application selects the "original" based on:

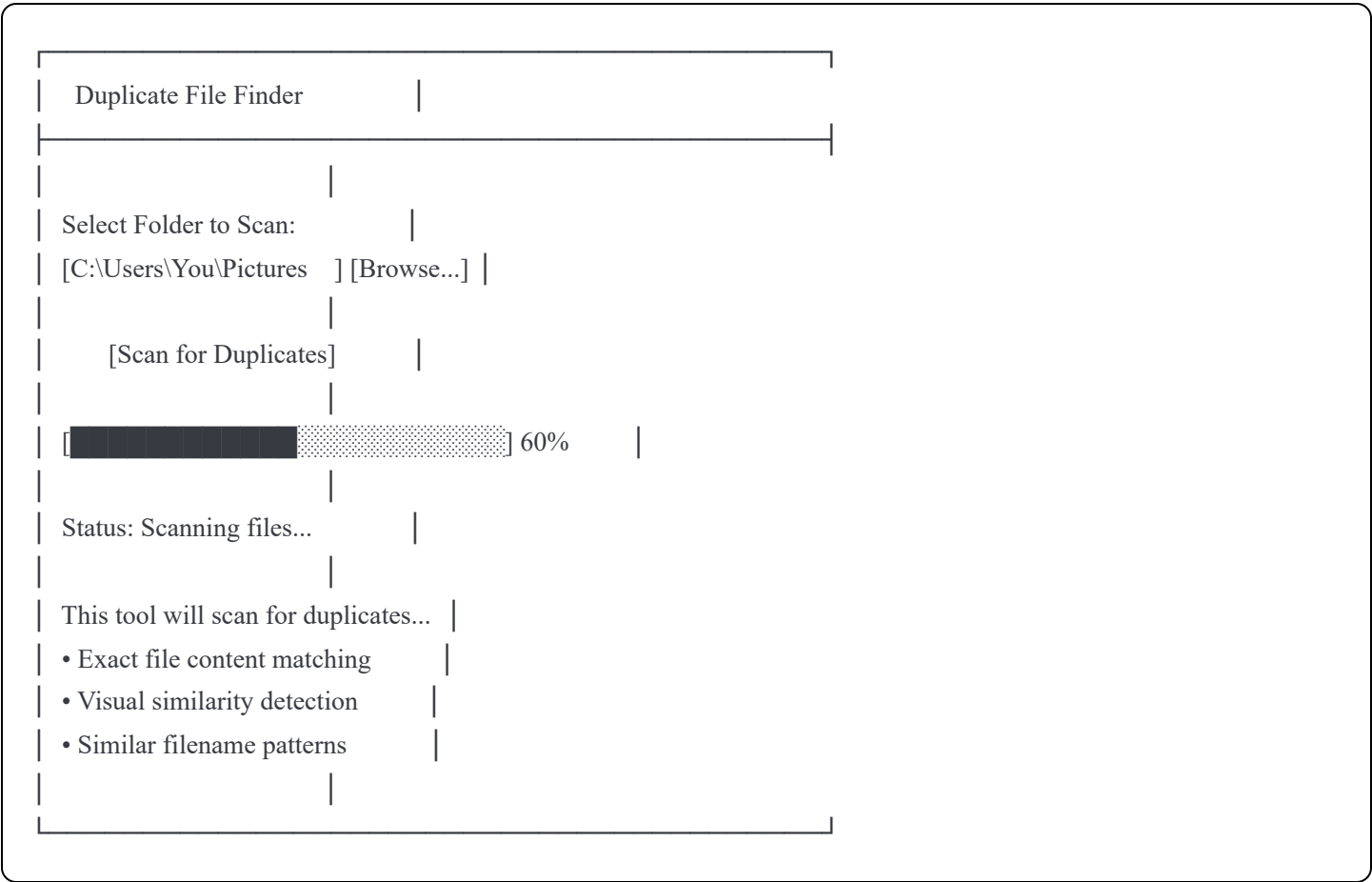
1. **Largest file size** (higher quality)
2. **Oldest modification date** (original creation)
3. **Oldest creation date** (first appearance)

Example:

File A: 2.5MB, created 2023-01-15 ← Original
File B: 1.8MB, created 2023-06-20 ← Duplicate
File C: 1.5MB, created 2023-09-10 ← Duplicate

Using the Application

Main Application Window



Scanning Process

Phase 1: Directory Scan

Status: Scanning directory...
Found 1,547 media files

- Searches all subfolders
- Counts total images and videos

- Displays file count

Phase 2: Hash Computation

Status: Phase 1: Computing file hashes...

Progress: [██████████░░░░] 756/1547 files

- Calculates unique fingerprint for each file
- Fastest phase (typically 1-2 seconds per 100 files)

Phase 3: Finding Exact Duplicates

Status: Phase 2: Finding exact duplicates...

- Groups files with identical hashes
- Very fast comparison

Phase 4: Visual Analysis

Status: Phase 3: Checking visual similarity...

Progress: [██████████░░░░] 1200/1547 files

- Analyzes image/video content
- Slowest phase (5-10 seconds per 100 files)
- CPU and RAM intensive

Scan Time Estimates

Files	Approximate Time
100	30 seconds
500	2-3 minutes
1,000	5-8 minutes
5,000	20-30 minutes
10,000	45-60 minutes

Factors affecting speed:

- File sizes

- Hard drive speed (SSD vs HDD)
- CPU performance
- RAM available

Understanding Results

HTML Report Overview

After scanning, a report opens in your browser:

Duplicate Files Report

Folder: C:\Users\You\Pictures

Generated: 2025-01-15 14:30:25

Groups Found: 15

[Delete Selected] [Select All] [Reset] 0 files

Group 1 [EXACT]

Original(Keep)

Duplicates (2)

☒ [IMG]

☐ [IMG] vacation_copy.jpg

☐ vacation.jpg

☐ [IMG] vacation (1).jpg

Report Sections

Header Information

- **Folder:** The scanned directory path
- **Generated:** Timestamp of the scan
- **Groups Found:** Number of duplicate sets

Control Buttons

Delete Selected

- Moves checked duplicates to quarantine
- Only enabled when files are selected

Right Column: Duplicates

<input type="checkbox"/> [Unchecked]	
[Thumbnail]	
vacation_copy.jpg	
C:\Pictures\backup\...	
2,458,624 bytes	

- Unchecked by default
- Check to delete
- Shows thumbnail preview
- Full file path
- File size in bytes

Match Type Badges

EXACT (Green)

- Files are byte-for-byte identical
- 100% confidence
- Safe to delete

SIMILAR (Orange)

- Files are visually similar
- 70-90% similarity
- Review before deleting

Managing Duplicates

Selecting Files to Delete

Method 1: Manual Selection

1. Review each duplicate group

2. Check thumbnails to verify
3. Click checkbox next to files to delete
4. Selected count updates automatically

Method 2: Select All

1. Click "Select All Duplicates" button
2. All duplicate files checked instantly
3. Review selections if needed
4. Uncheck any you want to keep

Method 3: Selective Selection

1. Use "Select All Duplicates"
2. Uncheck specific files you want to keep
3. Keep important versions

Verifying Before Deletion

Check These Details:

Thumbnail Preview

- Are the images identical?
- Is quality comparable?
- Any important differences?

File Size

- Keep the largest (best quality)
- Original is usually largest

File Path

- Where is the file located?
- Is it in an important folder?
- Is it backed up elsewhere?

File Name

- Does the name indicate purpose?
- Is it part of a sequence?
- Any special meaning?

Deletion Process

Step 1: Select Files

Selected: 12 files selected

Step 2: Click Delete

[Delete Selected] ← Click here

Step 3: Confirm

Are you sure you want to
delete 12 file(s)?
They will be moved to
quarantine.
[Yes] [No]

Step 4: Progress

Deleting Files...

75%

Step 5: Results

Deletion Complete!	
Successfully deleted: 12	
Failed: 0	
Total processed: 12	
[OK]	

After Deletion

- Deleted files removed from report
- Empty groups disappear
- Selected count resets to 0
- Can continue selecting and deleting

Quarantine System

What is Quarantine?

Instead of permanently deleting files, Duplicate File Finder moves them to a safe quarantine folder. This allows you to:

- Review deleted files
- Restore files if needed
- Permanently delete later when confident

Quarantine Location

Default Path:

C:\Users\YourName\DuplicateFiles_Quarantine\

Structure:

```
DuplicateFiles_Quarantine/
├── quarantine_20250115_143025/
│   ├── deletion_log.txt
│   ├── Pictures/
│   │   ├── vacation_copy.jpg
│   │   └── photo (1).jpg
│   └── Downloads/
│       └── image_copy.png
└── quarantine_20250115_151200/
    ├── deletion_log.txt
    └── ...
```

Quarantine Sessions

Each deletion creates a new timestamped folder:

- Format: `quarantine_YYYYMMDD_HHMMSS`
- Example: `quarantine_20250115_143025`
- Date: 2025-01-15
- Time: 14:30:25

Deletion Log

Each session includes `deletion_log.txt`:

```
Deletion Log - 2025-01-15 14:30:25
```

```
=====
```

```
MOVED: C:\Users\You\Pictures\vacation_copy.jpg
```

```
TO: C:\Users\You\DuplicateFiles_Quarantine\quarantine_20250115_143025\Users\You\Pictures\vacation_copy.jpg
```

```
MOVED: C:\Users\You\Pictures\photo (1).jpg
```

```
TO: C:\Users\You\DuplicateFiles_Quarantine\quarantine_20250115_143025\Users\You\Pictures\photo (1).jpg
```

```
FAILED: C:\Users\You\Pictures\locked_file.jpg
```

```
ERROR: PermissionError: [WinError 32] The process cannot access the file...
```

Restoring Files

Method 1: Manual Restoration

1. Open quarantine folder
2. Navigate to the session folder
3. Find your file in the directory structure
4. Copy or move back to original location

Method 2: Bulk Restoration

1. Open the session folder
2. Select all files and folders
3. Copy them
4. Paste to appropriate locations

Permanently Deleting Quarantine

When you're confident files aren't needed:

1. Open File Explorer
2. Navigate to `C:\Users\YourName\DuplicateFiles_Quarantine\`
3. Select old session folders
4. Press `Shift + Delete` for permanent deletion
5. Confirm deletion

Tip: Wait 30 days before permanently deleting to ensure you don't need any files.

Tips & Best Practices

Before Scanning

1. Start Small

- Test on a small folder first (100-500 files)
- Learn how the tool works
- Build confidence before large scans

2. Backup Important Files

- Create a backup of critical folders

- Use an external drive or cloud storage
- Better safe than sorry

3. Close Other Applications

- Free up RAM for faster scanning
- Reduce CPU competition
- Prevent file locking issues

4. Choose Appropriate Folders

Good Choices:

- Downloads folder
- Pictures libraries
- Video collections
- Camera uploads

Avoid:

- System folders (C:\Windows)
- Program Files
- Application data folders
- Currently open files

During Scanning

1. Be Patient

- Large scans take time
- Don't close the application
- Let it complete all phases

2. Monitor Progress

- Watch the status messages
- Note any error messages
- Progress bar shows completion

3. Don't Use Computer Heavily

- Scanning is resource-intensive
- Heavy multitasking slows progress
- Let it work in the background

Reviewing Results

1. Check SIMILAR Matches Carefully

- These may not be identical
- Verify thumbnails
- Consider keeping both if uncertain

2. Verify File Sizes

- Larger files are usually better quality
- Small differences might matter
- Check resolution if needed

3. Review File Paths

- Files in backup folders are safe to delete
- Files in working folders need review
- Consider folder purpose

4. Start Conservative

- Delete obvious duplicates first
- Run multiple small sessions
- Gain experience before aggressive deletion

After Deletion

1. Verify Quarantine

- Open quarantine folder
- Spot-check a few files
- Confirm they're actually duplicates

2. Test Applications

- Open programs that used those files
- Ensure nothing breaks
- Check photo viewers, editors, etc.

3. Wait Before Permanent Deletion

- Keep quarantine for 30 days
- Use your computer normally
- Delete permanently only when confident

Optimization Tips

For Faster Scans:

1. **Use SSD drives** instead of HDD
2. **Close browser tabs** to free RAM
3. **Scan during off-hours** for dedicated resources
4. **Split large collections** into smaller scans

For Better Results:

1. **Organize before scanning** - pre-sort obviously
2. **Remove obvious duplicates** manually first
3. **Scan by file type** - images separate from videos
4. **Regular maintenance** - scan monthly

Troubleshooting

Common Issues

Issue 1: "Server failed to start"

Symptoms:

- Error message on scan
- Application won't scan

- Port conflict mentioned

Solutions:

1. Close other applications

- Something might be using port 8765
- Close web servers, development tools

2. Check firewall

- Allow Duplicate File Finder
- Add exception if blocked

3. Run as administrator

- Right-click application
- Select "Run as administrator"

Issue 2: "Cannot create quarantine folder"

Symptoms:

- Deletion fails
- Permission error
- Cannot write to folder

Solutions:

1. Check disk space

- Ensure enough free space
- At least 2x size of files to delete

2. Verify permissions

- Ensure write access to user folder
- Check C:\Users\YourName permissions

3. Choose different quarantine location

- Edit the quarantine path
- Use a different drive

Issue 3: Scan is very slow

Symptoms:

- Hours for moderate folders
- Progress barely moves
- Computer freezes

Solutions:

1. Close other applications

- Free up RAM
- Reduce CPU usage

2. Scan smaller folders

- Split into multiple scans
- 1000 files at a time max

3. Upgrade hardware

- Add more RAM (8GB+)
- Use SSD instead of HDD
- Upgrade CPU if very old

Issue 4: "No duplicates found" but I know there are duplicates

Symptoms:

- Obvious duplicates missed
- Zero results unexpected

Possible Causes:

1. Different file formats

- photo.jpg vs photo.png
- Application only matches same format

2. Below similarity threshold

- Heavy editing
- Major cropping
- Increase threshold in settings

3. File corruption

- Cannot read file

- Skip corrupted files

Solutions:

- Convert files to same format
- Manually review low-similarity files
- Re-download or restore files

Issue 5: Wrong file selected as "original"**Symptoms:**

- Lower quality kept
- Newer file marked as original
- Unexpected selection

Explanation: Selection criteria: Size → Oldest Modified → Oldest Created

Solutions:**1. Manual review before deleting**

- Check file details
- Swap if needed

2. Edit files before scanning

- Rename preferred original
- Adjust file dates if necessary

Issue 6: Browser report won't load**Symptoms:**

- Blank page
- Error in browser
- Report doesn't open

Solutions:**1. Check default browser**

- Set Chrome, Firefox, or Edge as default

- Update browser to latest version

2. Manually open report

- Find HTML file in scan folder
- Right-click → Open with → Browser

3. Check file permissions

- Report might be blocked
- Unblock in file properties

Error Messages

"Error hashing file: [filename]"

- File is locked or in use
- Close applications using the file
- File might be corrupted

"Error creating thumbnail: [filename]"

- File format not supported
- File is corrupted
- Continues scanning other files

"Permission denied"

- Need administrator rights
- File/folder is read-only
- Run application as administrator

"Out of memory"

- Too many files for available RAM
- Close other applications
- Scan smaller folder
- Upgrade RAM

Getting Help

If problems persist:

1. Check the log

- Look for error details
- Note specific file paths

2. Try smaller test

- Scan a small folder
- Isolate the problem

3. Reinstall application

- Uninstall completely
- Download latest version
- Install fresh

4. Contact support

- Visit support website
 - Include error messages
 - Describe steps to reproduce
-

FAQ

General Questions

Q: Is this safe to use? A: Yes, files are moved to quarantine, not permanently deleted. You can always restore them.

Q: Do I need Python installed? A: No, the application is standalone and includes everything needed.

Q: How much disk space will I save? A: Depends on your collection. Users typically save 10-30% of their media storage.

Q: Can I scan multiple folders at once? A: No, scan one folder at a time. You can include subfolders though.

Q: Will this slow down my computer? A: During scanning, yes. Close the report and application when done.

Technical Questions

Q: What algorithm does it use? A: MD5 hashing for exact matches, perceptual hashing for visual similarity, and Levenshtein distance for names.

Q: Can it detect edited photos? A: Yes, if similarity is 70-90%. Heavy editing may fall below threshold.

Q: Does it work with RAW images? A: No, currently only supports JPG, PNG, GIF, BMP, WebP, TIFF, and ICO.

Q: Can it scan network drives? A: Yes, but it will be much slower than local drives.

Q: Is my data sent anywhere? A: No, everything runs locally. No internet connection used or required.

Usage Questions

Q: Can I undo deletions? A: Yes, restore files from the quarantine folder.

Q: How long should I keep quarantine files? A: Recommend 30 days, then permanently delete if confident.

Q: Can I change the quarantine location? A: Currently uses fixed location in user folder. Future versions may allow customization.

Q: Will it delete files I'm currently using? A: No, locked files cannot be moved and will show an error.

Q: Can I stop a scan in progress? A: Yes, close the application. No changes made until you delete files.

Results Questions

Q: Why are some matches marked SIMILAR instead of EXACT? A: They're visually similar but not byte-identical. May be resized, cropped, or edited.

Q: Should I delete SIMILAR matches? A: Review carefully. They might be different enough to keep both.

Q: Why doesn't it find my obvious duplicates? A: Check if they're different formats, below threshold, or in excluded folders.

Q: Can I adjust the similarity threshold? A: Not in UI currently. Would require editing the source code.

Q: Why keep the largest file? A: Larger usually means better quality/resolution.

Appendix

Keyboard Shortcuts

Shortcut	Action
Alt+F4	Close application
Tab	Navigate fields
Enter	Activate focused button
Space	Check/uncheck checkbox

Supported File Formats

Images

- **JPEG:** .jpg, .jpeg
- **PNG:** .png
- **GIF:** .gif
- **BMP:** .bmp
- **WebP:** .webp
- **TIFF:** .tiff, .tif
- **ICO:** .ico

Videos

- **MP4:** .mp4
- **AVI:** .avi
- **MOV:** .mov
- **MKV:** .mkv
- **WMV:** .wmv
- **FLV:** .flv
- **WebM:** .webm
- **M4V:** .m4v
- **MPEG:** .mpg, .mpeg

File Size Limits

- No specific limit
- Limited by system RAM
- Very large files (>1GB) may slow scanning

System Resources

Typical Usage:

- RAM: 200-500MB during scan
- CPU: 50-90% during visual analysis

- Disk: Minimal reads during scan

Peak Usage:

- RAM: Up to 2GB for large collections
 - CPU: 100% during intensive processing
 - Disk: Heavy I/O during file moves
-

Glossary

Exact Duplicate: Files with identical content (same hash)

Hash: Unique fingerprint calculated from file content

Perceptual Hash: Visual fingerprint for comparing image similarity

Quarantine: Temporary holding area for deleted files

Session: One complete scan and deletion cycle

Similarity Threshold: Percentage match required to group files

Thumbnail: Small preview image of file content

Visual Similarity: How closely two images appear alike

Contact & Support

Application Version: 1.0.0

Website: <https://yourwebsite.com>

Email Support: support@yourwebsite.com

Documentation: <https://yourwebsite.com/docs>

Report Bugs: <https://yourwebsite.com/support>

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End of User Guide

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