

Scanning

Saving Photos and Documents for Family History with Scanners and Cameras

Do You Find Yourself in This Situation?

- You have inherited boxes of old photos
 - This can be intimidating
- Maybe you got a computer or a hard disk with family files
- You are the designated family historian
- Maybe you actually chose to archive the family memories
- Now what? Where do I start? What do I need to know?

Class Roadmap (My best guess)

- Day 1
 - Organizing your stuff, your computer, and backups
 - All about computer files and folders
- Day 2
 - Pixels, image files, and the whys and wherefores of them
 - Resolution and how scanners and cameras work
- Day 3
 - Creating images with scanners and cameras
 - Problems and solutions
 - Pictures, frames, slides, and albums, oh my!
- Day 4
 - Software for editing, organizing, and sharing
 - Simple image restoration
 - Fixing common problems like colors, tears, and spots

Areas We Will Cover

- Collecting images and documents
 - Where is everything?
 - Backup, how to keep things safe
- Triage, what is most important
 - Borrowed, deteriorating, multiple copies, etc.
- Problems
 - Damage, fading, fungus, cracked, magnetic albums, glued albums, glass
- Scan or photograph
 - Which is better and when to use each method
 - Types of scanners
 - Scanner and photograph settings
- Repairing damaged photos and fixing other problems (editing)
- Organizing our materials
 - Photo editors, and genealogy programs to help

Do You Need Your Own Scanner?

- Family History Center has several
 - Photos and slides only, no negatives
- What kinds of scanning do you need to do?
- How many images to you need to do?
- Do you prefer working at home?
 - Do you work weird hours?
- How much does your budget allow?

Organizing A Flood of Images

It used to be we only got double prints, today we are flooded with images.
And this does not include all the old photos and docs in shoeboxes!

Digital has multiplied volume

- Film limited numbers of pictures
- With digital we are taking huge numbers of images that need to be managed
- How do we find things now?
 - Named shoeboxes?
 - Thumb drives?

So Many Digital Images!

- This has resulted in a shorter life for many images, they aren't cherished as long as they used to be
- Don't be afraid to cull your images, they aren't all equally important
- Decide which ones will be important in the future
 - This can be tricky of course, what about all those flower pictures?

Do You Know Where Your Images and Related Things Are?

- Phones
- Cameras
- Shoeboxes
- Photo albums
- Computers
- Journals
- Letters/Documents

Computer Files and Folders

- Files, images and documents, have names and are stored in folders
 - There is a name and in many cases an extension, like .jpg that tells what kind of information the file contains
 - Mac does not require the extension, but it is still a useful concept
 - Windows Explorer can be set to display or not display the extension
 - Long names are now allowed, but don't get too crazy
 - In the old days the limits were 31 for Mac and 8.3 for Windows
 - Really long names get confusing and the chance of mistyping increases
- Folders can contain sub-folders to create a hierarchical structure
 - This can be used to organize things, but it can also get confusing
 - Try to keep it simple
 - Dates and topic names are commonly used

Duplicate Files?

- One program is “Easy Duplicate Finder”
- For Adobe Lightroom there is a plug-in that find duplicate files
- Mostly only filenames are checked, not the actual content
- I think the tools for this will get better soon

How to Collect Digital Things

- Challenges:
 - Phones, cameras, and computers keep images in different places
 - Connect with USB or put the memory card in a reader
 - Not always easy drag and drop from your phone, but getting better
 - Often the phone shows up in Windows Explorer and you can drag and drop
 - Scanners, you can specify file location

Where to keep Digital Things

- It is best to keep things in one place
 - Windows has 'pictures', 'documents', etc.
 - Mac is similar
- We can call this the master collection or working files or main files or library or whatever you decide to call it
 - It should be something connected to your main working computer
 - Local drive or cloud is fine
 - Internal drive is ok, but for laptops it is often too small
 - External drive is often preferable on laptops due the small size and fragility of laptop drives

Why Keep Stuff in One Place?

- Easier to backup/archive
- Don't have to look all over to find things
- A good (simple) folder system can help
 - Something you and others can understand
- When (not if) you get a new computer it is easier to migrate your collection
 - Drives wear out, and so do computers, and you never know when

Internal, External, or Cloud

- Internal advantages:
 - Files are always on your computer
 - Laptop, easy to move
- External advantages:
 - Easy to add more, just plug in (USB drives)
- Cloud advantage
 - Can be accessed from anywhere with internet

My Environment

- I keep my main library on an internal drive
- I have an NAS drive, backups are made twice daily
- I often use BeyondCompare to make backups to another external drive after I have done some work
 - I hate losing work!
- I have another drive that lives in a safe place that I back up to periodically
- Software: Mac Time Machine or Windows Backup are free
 - I also use Acronis for incremental backups that run automatically
- When I have files that I know I need to access from other locations I put them in a cloud drive

How Much Space Do You Need?

- It depends...
- No matter how much you have today, tomorrow you will need more!
- That's why I like external drives, easy to upgrade
- Cloud? You might end up paying more, but \$10/month will buy a lot of space

Getting Organized

- Decide how to organize your files
- Try using this with new or test files
- Make changes if it doesn't work for you
- If it works, start adding old images
 - This might be new scans as well as files

File Names

- Include the date in the filename along with other information
 - 17May2019-JohnBirthday.jpg
- Try to come up with a naming standard that makes sense to you and use it consistently
 - Try it with a few files first, and if it doesn't work for you then change it

Filename Suggestions

- Short
- Unique
- No special characters except -, _
 - Especially no spaces or @\$%^&*^/|:;<>.'"[{}]+=
- Consistent date formats
 - YYYY_MM_DD, or DDMONYYYY (15MAY2011 as genealogy often uses)
 - I prefer YYYYMMDD order since it will sort correctly
 - But remember that files also sort by create or modify dates which have nothing to do with the actual name of the file

Filename Examples

- 1950_Martin_bday.jpg
- Jones_Family_research.jpg
- Hansen_Family_Timeline.jpg
- Shoebox_3_img_87.jpg
- Of course, the names can be anything you find useful or convenient

Folder Names

- Many people use date for folder names
 - Example: 2018_12_24
 - Or even nested date folders like: 2018\12\24 (2018:12:24 on classic Mac, now /)
- Another way is using names for content
 - For example, folders named trees, lakes, Smith family, uncle Bill, aunt Mary, etc.
 - This quickly gets complicated

Folders

- You have a folder for Bill and one for Mary
- What if Bill and Mary are both in the same photo?
 - You could just copy the picture to both folders but this duplicates the image and then what happens when there are three people in the picture, or 4, or 5?
 - Links/shortcuts could be used to avoid duplications, but this method gets complicated

Finding Files

- Just remember the date!
- Or remember the subject, trees
- Does this work well?
 - How about files with Bill and Mary?

Possible Organizing Methods

- By date
 - Date named folders, date names for files
 - Maybe folders using years, months, days
- By topic
 - Trees, flowers, lakes, rivers, waterfalls, etc.
- By content, Fred, George, Smiths, etc.
- Date folders containing the above
- Or topic or content containing dates

Possible Tree

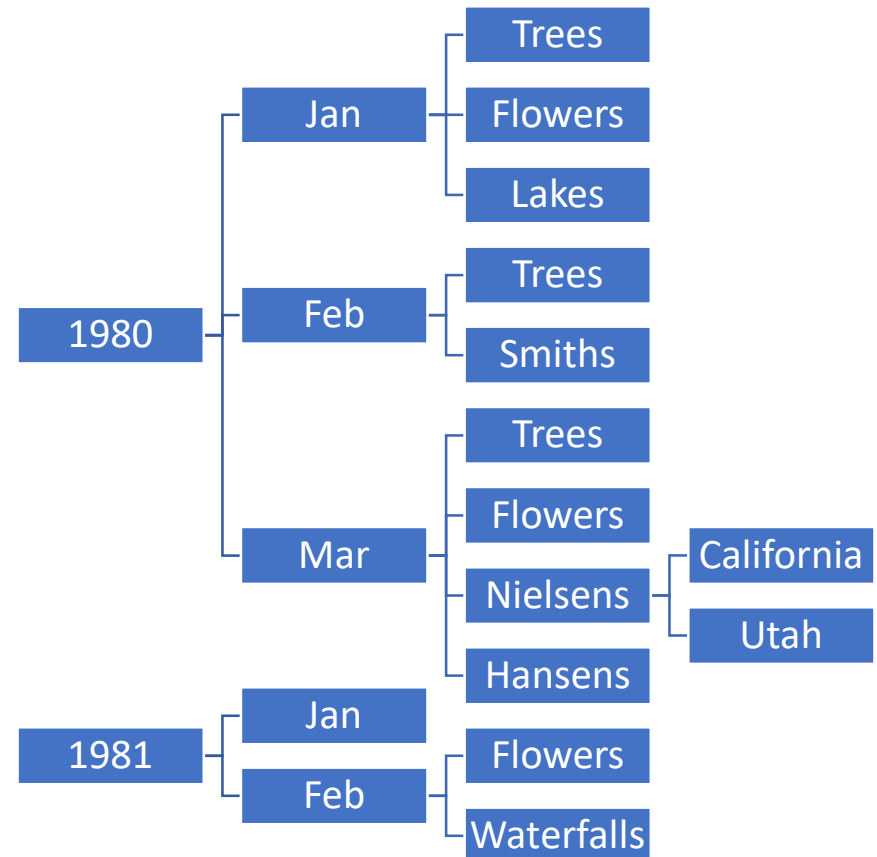
These are folders with each folder containing images that match the folder path.

So this is pretty cool! It's easy to find what I want just by walking down the tree. Or is it? What if I want to find all the "Trees" pictures? Wait a minute! They are found 3 (or more of course) different places.

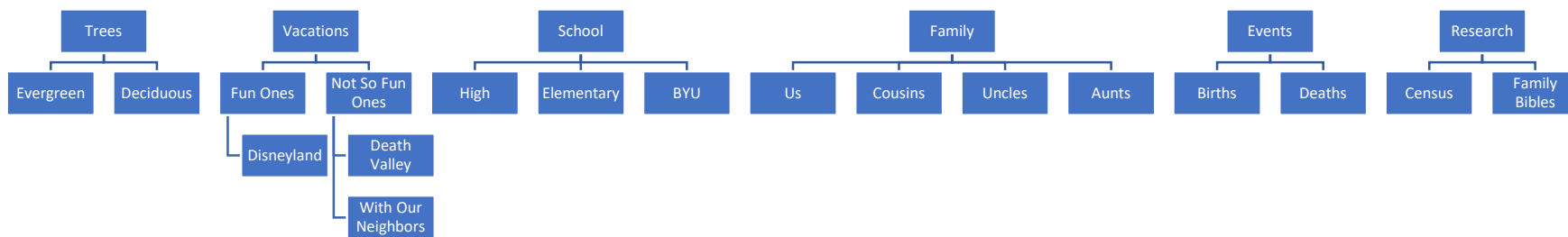
Oh yeah, and where do I put pictures of waterfalls with trees and flowers at the Niensens in Utah? Duplicates?

Triplicates? Quads?

You could use "symbolic links" so at least the files aren't duplicated, but this still gets kind of crazy real fast.



Or This Tree



Stop and Think for a Moment



What is the real problem I'm trying to solve?

Hmmmm, what I want is to be able to find pictures based on some description of the picture. It might be date, it might be names, it might be contents, actually it might be just about anything that describes the image.



If I could attach the information to each image file then I wouldn't really care what folder the file is in, I could simply search through the descriptions for what I am looking for. This is easily done on a computer with the magic of metadata and a database catalog.

Organizing

- Original way
 - Sort in named folders like date, trees, lakes, flowers
 - This breaks down if you have a picture of trees and flowers in front of a lake
- Better way
 - metadata tags
 - Index using trees, flowers, and lakes
 - Easy to find using any tag word

What is Metadata?

- Information that describes the image
 - Date, time, title, keywords, camera information, GPS, and much more
- It is used by file manager programs to find things (Lightroom etc)
- Unfortunately not well supported by Windows

The Better Way - metadata

- Use keyword tags
- Add Bill and Mary keywords to files
 - You can search for either or both
- You can still sort and search by date
- For digital camera images you can even search by camera model and lens or anything else in the metadata

Windows and Metadata

- Note that Windows will display tags but won't search them
- You can find the metadata under r-click properties
- You can also change explorer to show some of the metadata

How am I Organized?

- I started with named folders and files, some dates, some places, and some things
 - It got messy!
- When I started using Lightroom I just left the folders in place, Lightroom doesn't care where things are
- I started adding tags (keywords) to new and old photos
- I now have Lightroom automatically create folder trees using dates and I add tags to help find things
- NOTE: what works for me may not be ideal for you, so feel free to create your own system!

MN Photos

Home Share View

Clipboard: Pin to Quick access, Copy, Paste, Copy path, Paste shortcut

Organize: Move to, Copy to, Delete, Rename

New: New folder, New item, Easy access

Open: Properties, Open, Edit, History

Select: Select all, Select none, Invert selection

This PC > WORKING (D:) > MN Photos

Search MN Photos

Name	Date modified	Type
2008		File folder
2009		File folder
2010	11/14/2017 1:10 PM	File folder
2011	12/10/2012 11:39 AM	File folder
2012	12/22/2012 12:02 PM	File folder
2013	8/28/2017 10:16 AM	File folder
2014	8/28/2017 10:53 AM	File folder
2015	8/28/2017 11:14 AM	File folder
2016	8/28/2017 11:36 AM	File folder
2017	12/16/2017 12:23 PM	File folder
Abstract	11/14/2017 9:54 AM	File folder
Alberta	12/10/2012 11:39 AM	File folder
Alberta2001	11/14/2017 9:58 AM	File folder
Andrew Hill	11/14/2017 10:05 AM	File folder
Animations	12/10/2012 3:19 PM	File folder
Art	11/14/2017 10:05 AM	File folder
Automotive AC	10/7/2010 2:30 PM	File folder
Barnstormers Football	11/14/2017 10:05 AM	File folder
Birds	11/14/2017 1:10 PM	File folder
books	12/10/2012 11:40 AM	File folder
Bridges	12/10/2012 3:18 PM	File folder
BunkBeds	11/14/2017 10:07 AM	File folder
ByeByeBirdie	10/16/2010 10:58 AM	File folder

255 items | 1 item selected

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Thoughts on Naming Files

- If you rely on metadata, filenames and locations don't matter as much
- But it is comforting to give files meaningful names, and it can be useful
- Create your standard and follow it

More Thoughts on File and Folder Names

- Named folders for organizing are useless if the files are moved
- File names can help identify the contents
 - Come up with a standard and stick to it
 - Don't let names get too large
 - Easy to make spelling errors
 - Too much typing
 - May not display correctly

Summary Thoughts

- There is nothing wrong with using named folders and carefully crafted filenames
- Just be aware of the limitations
- You don't have to use tools like Lightroom
 - It is better for large collections, but if your file count isn't too large just use Windows Explorer or Mac Finder

Summary Summary

- If your collection is small, a few hundred files, organizing isn't so important
- If your collection is many thousands then it is important to get and stay organized or you will not be able to find things again

Backup

Safety for your images

Where & How to Archive (Backup)

Cloud

Internal/External drives

Where do we keep things?

LOCKSS (lots of copies keep stuff safe)

Where to Keep Image Files

- Camera
- Hard disc on computer
 - It will fail someday
- External network drives
- USB hard and flash drives
 - Flash has 10 year life average
- Cloud
 - Trust others to not lose images
 - Reputable cloud storage providers keep multiple copies and are safe
 - But I still like to have physical control of at least one backup
- Optical – CD, DVD, BD
 - I like optical but it has fallen out of favor and writers are becoming less common

Apps to Backup to USB

- PhotoStick and Picture Keeper
 - USB memory with app to save images
 - Read the reviews carefully!
- OSX TimeMachine and Windows Backup
 - Both work reliably
- Beyond Compare or similar
 - Compares folders

Storing Location

Local

- Buy more drives as you need space
- You have control
- Should also store offsite

Cloud

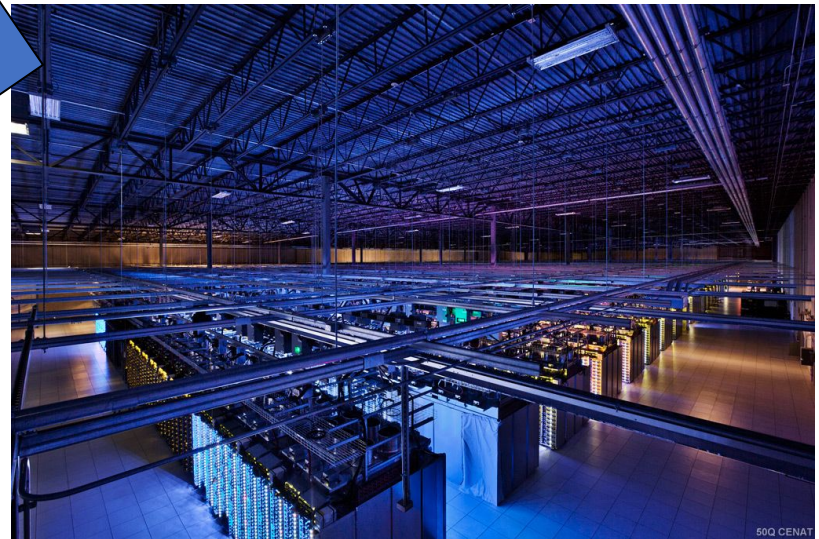
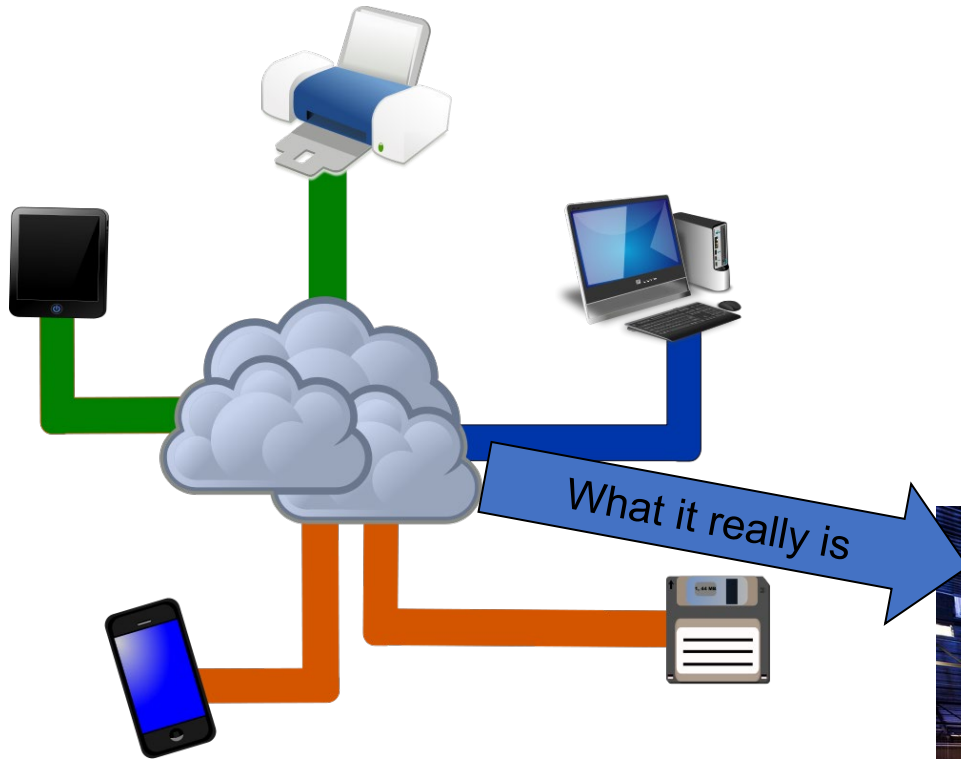
- Free until you hit limit, then monthly
- You trust them
- You should also keep a copy locally

Fun History, 1956 5MB Drive



How the Cloud Works (simplified)

- Files are stored in huge service centers
- Copies in multiple places
- Local copy on your drive is synched
 - If you edit with no internet, the changed file will be copied when you connect again



Cloud or Remote Backup

- Many excellent cloud services
 - Often free up to a certain size limit
- Carbonite and other remote backup solutions
 - More expensive, but can provide peace of mind

Cloud Concerns

- You are trusting a company
 - Stick with well established companies
- They might get bought
- They might go out of business
- They might change pricing
- Cost increases as you store more

Local Backup

- Don't just keep one copy on your main drive, hard drives will fail
- USB hard drives
 - Drives wear out
 - Bearings can seize if not used periodically
- USB thumb drives
 - Note that flash memory does not last forever, ~10 years safely

Local Computer Drives

- Desktop
 - Usually bigger drives and longer lasting
 - Use either internal or external drive
- Laptop/Notebook
 - Smaller capacity drives
 - Shorter lifetimes (fail more often)
 - Easily Stolen
 - Best to use an external drive

Local Drive Concerns

- They do fail eventually
 - Often without warning
- Theft
- Accidental erasure
- Run out of space
 - Buy more!

Advanced Storage

- RAID/NAS
 - Use with offsite replication for the ultimate in safety
- All of these take more setup work than simple external drives

Laptop/Notebook Concerns

- Internal drives not usually large
- Drives not as reliable
- Theft
- Use an external drive for library

Recommendations

- Cloud is good
 - Stick with large reputable companies
- Local is good
 - Buy new drives and refresh your copies
- Do both, keep your valuables safe

Cloud Fees – Monthly unless noted yearly

Google Drive

FREE	\$1.99	\$9.99	<small>starting at</small> \$99.99
15GB	100GB	1TB	10TB+

Microsoft OneDrive

Office 365 Home with Premium OneDrive Features 1 TB 5 users \$99.99/year	Office 365 Personal with Premium OneDrive Features 1 TB \$69.99/year	Storage only OneDrive 50 GB \$?	Storage only OneDrive Basic 5 GB Free
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Apple iCloud

50GB: \$0.99

200GB: \$2.99

2TB: \$9.99

In Case of Disaster

- www.datarecovery.com
- www.drivesavers.com
- Others
- Be prepared to spend \$\$\$

My Favorite Tools

- Mac – Time Machine
 - Keeps different versions in time
- Windows – Backup
 - Keeps different versions in time
- Beyond Compare (there are several other similar apps)
 - A tool to compare and reconcile folders
 - Great for figuring out what was changed
 - Does not keep time versions, it replaces

www to shared drive - Folder Compare - Beyond Compare

Session Actions Edit Search View Tools Help

Home Sessions **All** Diffs Same Structure Minor Rules Copy Update Right Update Left Update Both Mirror Right Mirror Left

Expand Collapse Select Files Refresh Swap Stop Filters: *.* Filters Peek

D:\wamp64\www L:\wamp64\www

Name	Size	Modified	Name	Size	Modified
css	152,767	9/11/2017 8:54:50 AM	css	152,767	9/5/2017 8:48:46 AM
fonts	106,983	9/11/2017 8:54:50 AM	fonts	106,983	9/5/2017 8:48:46 AM
GEOSapitest	2,514	9/11/2017 8:53:09 AM	GEOSapitest	2,514	9/5/2017 8:48:46 AM
GetPhoneNumbers	3,893,003	9/11/2017 8:53:15 AM	GetPhoneNumbers	3,893,003	9/5/2017 8:48:46 AM
images	535,729	9/11/2017 8:55:02 AM	images	535,729	9/5/2017 8:49:13 AM
js	168,046	9/11/2017 8:55:02 AM	js	168,046	9/5/2017 8:49:13 AM
mysite	24,649,475	9/11/2017 8:55:27 AM	mysite	24,649,475	9/5/2017 8:49:38 AM
sos	1,319	9/11/2017 8:53:26 AM	sos	1,319	9/5/2017 8:50:07 AM
testGEOS	9,002	9/11/2017 8:53:31 AM	testGEOS	9,002	9/5/2017 8:50:07 AM
testPlivo	688,829	9/11/2017 12:48:28 PM	testPlivo	688,532	9/5/2017 8:50:07 AM
vendor	660,596	9/11/2017 8:53:22 AM	vendor	660,596	9/5/2017 8:50:11 AM
composer.json	61	7/24/2017 11:57:43 AM	composer.json	61	7/24/2017 11:57:43 AM
composer.lock	9,882	7/24/2017 11:58:03 AM	composer.lock	9,882	7/24/2017 11:58:03 AM
index.php	16,155	9/22/2017 11:28:11 PM	index.php	15,858	9/22/2017 11:15:40 PM
Receive_SMS.php	1,016	9/18/2017 4:55:09 PM	Receive_SMS.php	1,016	9/18/2017 4:55:09 PM
testreceivesms.html	1,119	7/27/2017 7:48:38 AM	testreceivesms.html	1,119	7/27/2017 7:48:38 AM
testtw	3,975,116	9/11/2017 8:53:48 AM	testtw	3,975,116	9/5/2017 8:50:11 AM
wamplangues	28,183	9/5/2017 8:11:30 AM	wamplangues	28,183	9/5/2017 8:50:42 AM
wampthemes	620,396	9/5/2017 8:11:30 AM	wampthemes	620,396	9/5/2017 8:50:43 AM
add_vhost.php	18,009	8/16/2016 6:02:48 PM	add_vhost.php	18,009	8/16/2016 6:02:48 PM
favicon.ico	202,575	12/31/2010 9:40:06 AM	favicon.ico	202,575	12/31/2010 9:40:06 AM
imagecontainer.php	177	7/10/2017 11:48:57 AM	imagecontainer.php	177	7/10/2017 11:48:57 AM
index.html	7,477	7/10/2017 11:32:03 AM	index.html	7,477	7/10/2017 11:32:03 AM
index.php	30,117	8/16/2016 6:03:50 PM	index.php	30,117	8/16/2016 6:03:50 PM
test.php	20	7/27/2017 8:07:19 AM	test.php	20	7/27/2017 8:07:19 AM
test_sockets.php	742	9/21/2015 5:30:52 PM	test_sockets.php	742	9/21/2015 5:30:52 PM
testmysql.php	528	5/17/2016 3:58:18 PM	testmysql.php	528	5/17/2016 3:58:18 PM

9/23/2017 10:25:28 PM Username: DESKTOP-R24BR2K\marti

9/23/2017 10:25:28 PM Load comparison: D:\wamp64\www <-> L:\wamp64\www

13 file(s), 281 KB 198 GB free on D:\ 13 file(s), 281 KB 2.77 TB free on L:\

Commercial Backup Software

- Windows
 - Acronis
 - NovaBack
- Mac
 - Carbon Copy Disc Copy
 - Etc.
- idrive.com
 - Solved the slow upload problem, they send you a drive to load, you send it back
- Many others

Recommendations

- It does depend on the size of your collection, but in general...
 - Internal or external for your main working collection
 - Keep another external drive to make frequent copies of the main one
 - Also good to keep another copy in safe or offsite
 - Cloud storage is also excellent, free if you collection isn't too big
 - Note that upload times can be slow
 - Remember that you are trusting somebody else, the backups are not under your control
 - If you have the skills and money, NAS drives are great

Types of Files

What is in that file anyway?

File Types

- Regardless of how you scan, the image data will get saved in some kind of computer file
- Need to understand file types
- Some files contain text, others images, some both
- Some are compressed, some are not
 - Lossy, and non-lossy

File Formats, Container Files

- BMP, uncompressed, very large files
- GIF, websites, poor color performance
- PNG, used on websites
- DOCX, Word, Open Office, Google, etc.
- **JPG**, images
- **TIFF**, images
- **PSD/PSB**, Photoshop images
- **PDF**, text and images
- Many others

Image Compression

- Size reduced by eliminating redundant information
- Lossy
 - Some “less visual” data is removed during compression
- Non-Lossy
 - Nothing is lost

Best File Types

- JPG for email and sharing
- TIFF (or PSD for Photoshop) for editing
- PDF for mixed text and photos
- Note that Roots Magic and other packages have special DataBase files that contain their “stuff”, these must be archived also

Metadata

- Data that is attached to the image file
 - Contains date and other things
- Add keywords, copyright, etc.
- Either stored in image file or as “sidecar”
 - Jpeg and tiff/psd store in file
 - Some formats use a sidecar file (xmp)
- Save names and places and events
 - Copy the stuff written on or by the picture

Metadata Dates

- When you scan the image will have the current date and time
- This can be changed to reflect the actual date and time of the photo

Preparing Images for Scanning

Out of the shoe box

Cleaned up and separated as necessary

Into the scanner or camera

First: Get Organized

- Collect photos, clipping, negatives etc.
- Sort by whatever you think is best
 - By family
 - By date
 - By importance
 - By Type
 - By Event
 - By location

Individual Photo Challenges

- Old and brittle
- In fancy cardboard frames
- Damaged from careless handling/storage
- Mold, liquid stains
- Faded from sunlight
- Stuffed in boxes or paper envelopes

Photo Albums

- Corner mounts
- Glued in
- Double sided tape
- “Magnetic”, plastic sheets
- Inserted into plastic protective envelopes

Framed

- Behind glass
- No glass
- Oval glass, sometimes not flat
- Sometimes held with nails or tacks

Dealing With Reflections

- Difficult glass or surface issues
 - Use camera from angle to avoid reflections and correct perspective in photo editor later
 - A polarizing filter can reduce the glare and reflections

Avoiding Reflections



original



tilted



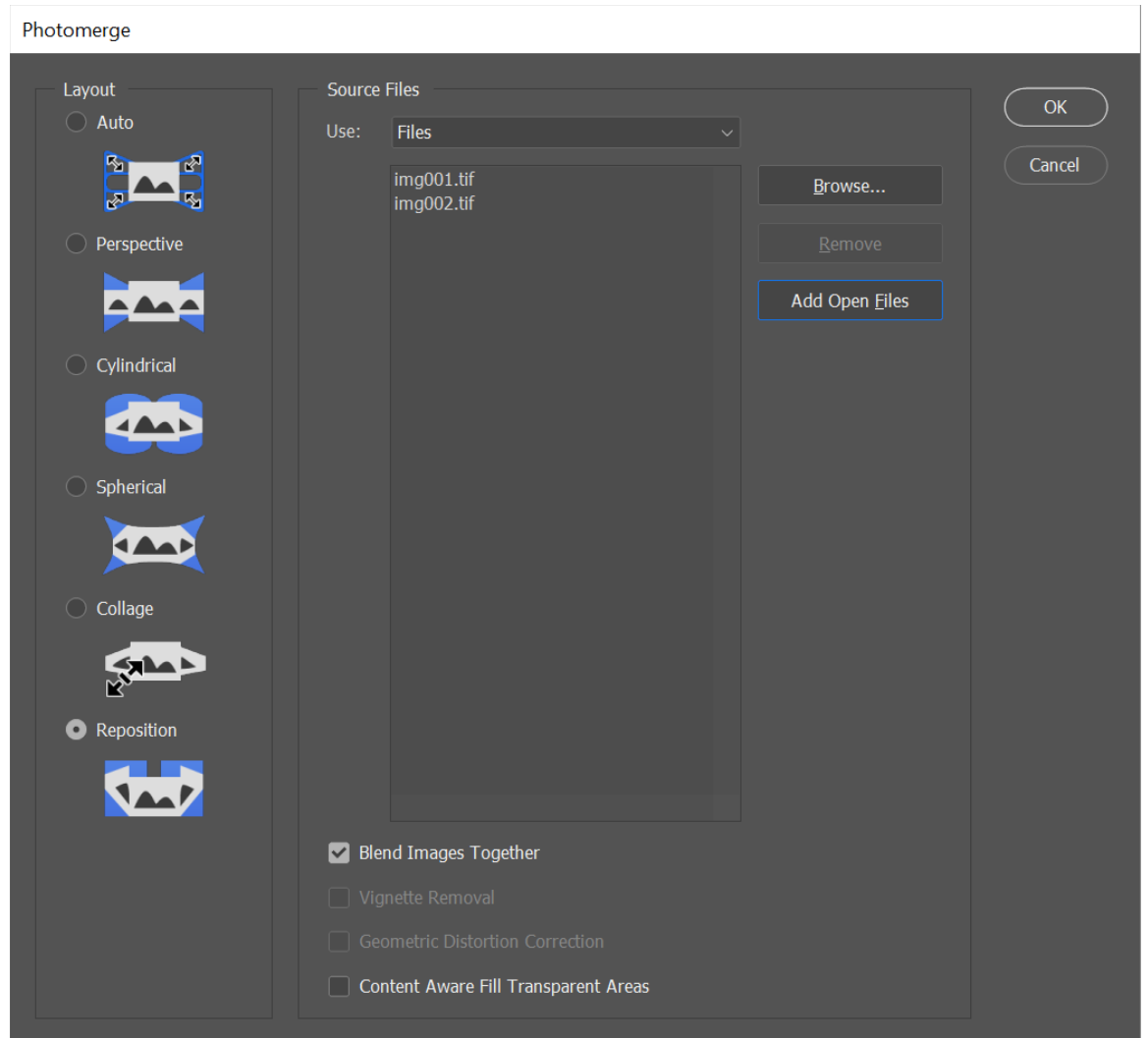
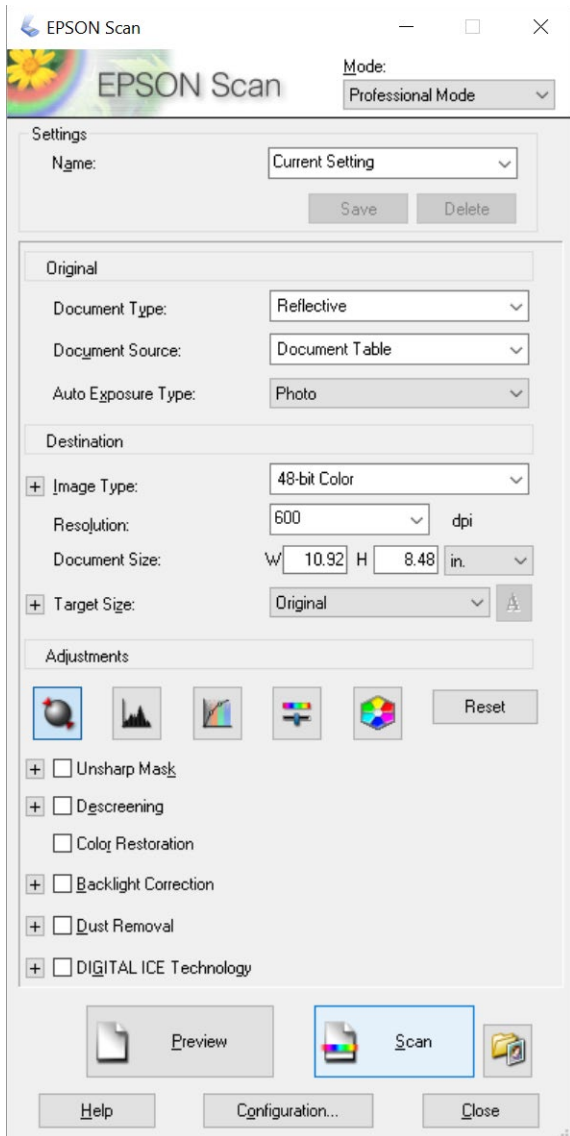
Straightened in editor

For Scanning

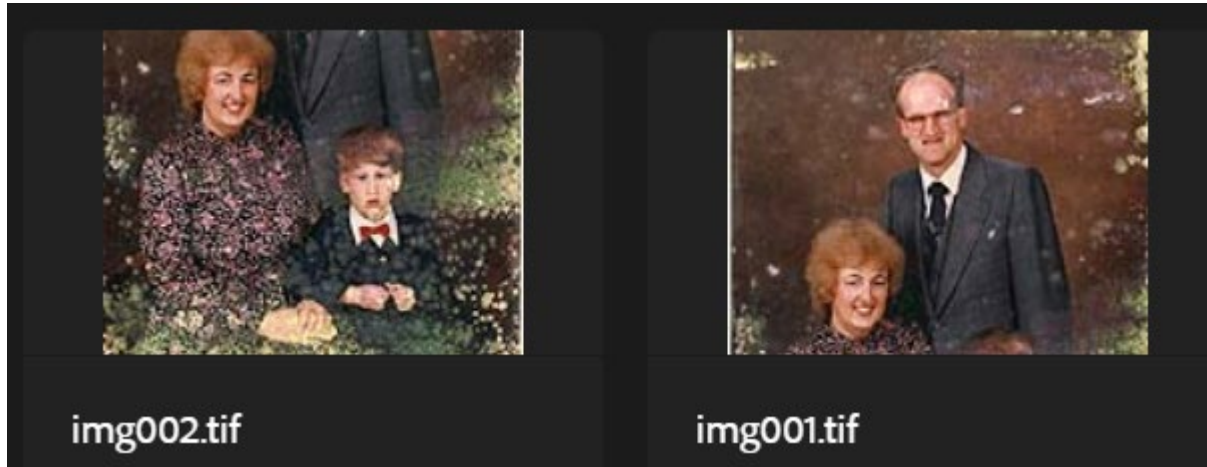
- Best if photo removed from frame/album
 - Not always possible
- Sometimes a camera is easier when you can't get the photo out

Scanning Large Photos

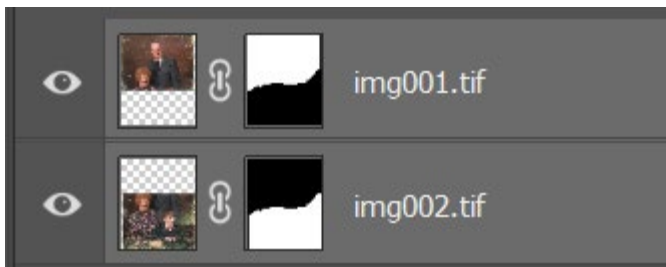
- Using a camera is often best choice
- If picture is curled, then flatbed is better
 - Have to scan multiple parts and combine
 - Turn off auto color corrections
 - It will likely give different colors on each part
 - Combine parts in Photoshop using File | Automate | Photomerge
 - Choose the Reposition type



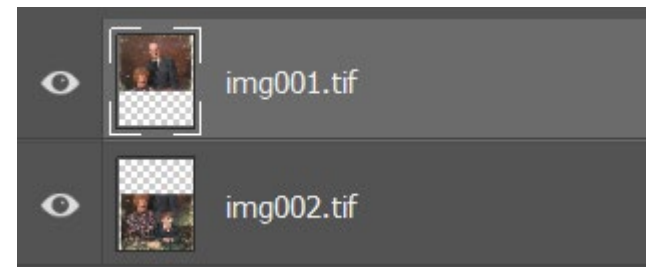
Blend Option Layer Result



Blend on



Blend off



This picture (16"x 20") was stored rolled up in a drawer in Hawaii. It was badly curled and has major mold damage. It also has cracks and missing pieces of the emulsion. The color has faded somewhat.

The two scans have now been merged and the image is awaiting the magic touch of the image restoration artist!



Use Care With Photos

- Glued and “magnetic” are sometimes very difficult to remove, just scan the sheet
- Old frames can be fragile
 - If you can't get photo out, just use a camera to take a picture
 - Polarizer can get rid of glare from glass
- Handle pictures carefully

Photo Paper

- Brittle
- Warped
- Cracked
- Weird surface reflections

Negatives and Slides

- Sometimes in protective sleeves
- Can be better than prints
- Negatives are often lost
- Kodachrome's do not fade!
- Other slides will fade over time

Negatives

- Not meant to be touched!
- Best kept in plastic or special paper sleeves
- Allows for better restoration than printed photo, negatives often lost

Slides

- The mount helps keep fingers off
- The mounts are sometimes bent or the glue has dried up and separated
- Some mounts have glass, which is often dirty or sometimes broken
- You may need to remove the slide from the mount

Scanned Image Problems

- Dust and scratches
- Staining
- Cracks
- Tears and missing pieces
- Fading, lack of color or contrast
- Color shifts
- Moiré patterns from newspaper clippings

Scanners and Scanning

How does a scanner work

How does a digital camera work

Which one should I use for what kind of pictures

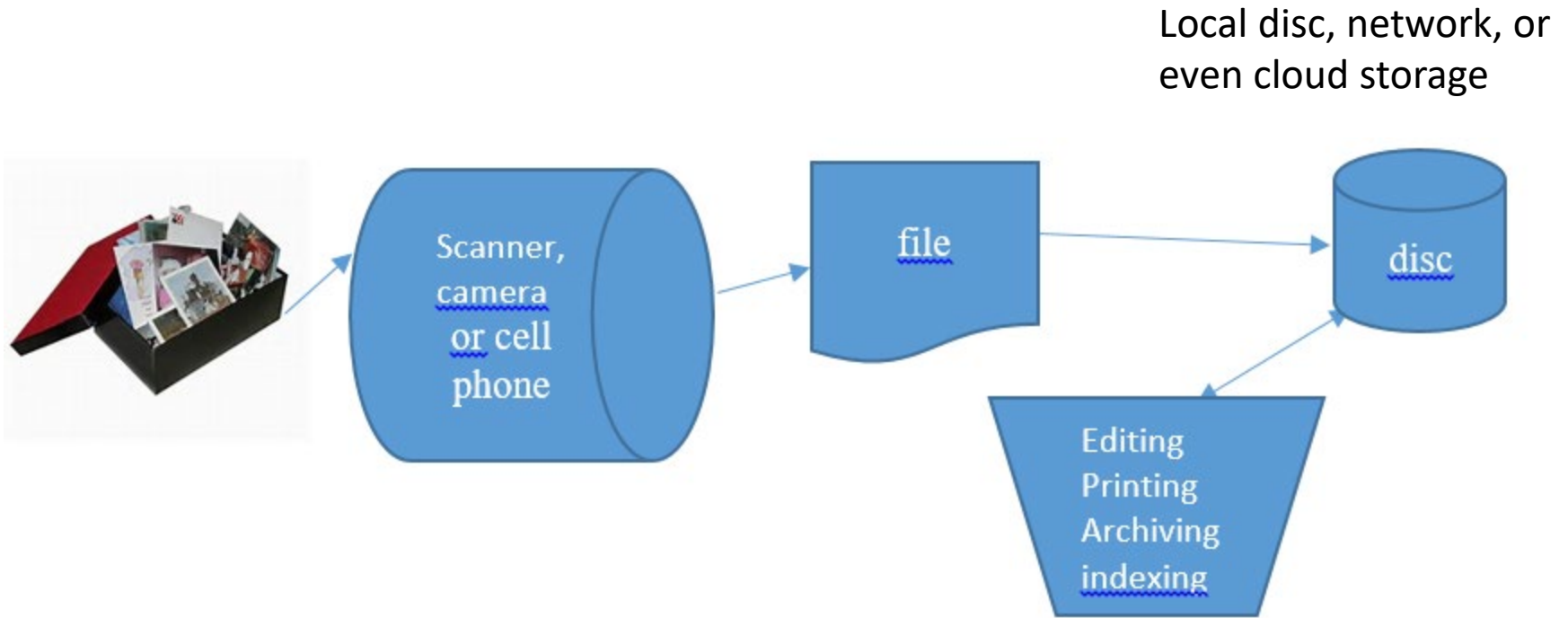
Do you need a scanner?

- Save money and space, the LDS Family History Center has scanners, including slides (no negatives though)
- You might want your own if you have many items to scan and you like working from home

Which Scanner Brand

- Canon
- HP
- Epson
- Fujitsu
- Others
- Competition has ensured that you get about the same quality for a given price

From Box to File



This might also be a Family history program.

Things to Scan or Save

- Old photos
- Negatives
- Slides
- Newspaper clippings
- Journals
- Movie film
 - Gets old and brittle
- VHS tapes
 - Deteriorate with age
- DVD movies
- Microfilm

Types of Scanners

- Flatbed
 - Has a moving sensor bar and light
- Document scanners
 - The paper moves through the scanner
 - Often do both sides at once
 - Handle a stack of documents
- Slide and negative scanners
 - Some flatbeds have light in lid for transparency
 - Others use a lens system with no flatbed

Inexpensive Slide/Negative “Scanners”

- Many of these use webcams and are not great quality, but they are fast

Drum Scanners

- Finest quality
- Very expensive, used ones can be found

All-In-One

- Combined printer/scanner is convenient
- Dedicated scanners generally produce better scans and higher resolution
 - Need at least 1200 dpi for slides/negatives
 - 2400 dpi is recommended
- No negative/slide ability that I have seen

Do-it-all Scanners 9000f mkii

* getting harder to find



In Stock

Order **now** to ship **tomorrow**

Free Expedited Shipping

PRODUCT HIGHLIGHTS

- Optical Resolution: 9600dpi (Film)
- Optical Resolution: 4800dpi (Documents)
- Color Depth: 48/24-Bit Internal/External
- Scan Film, Slides, Documents, Photos

Show more

★★★★★ Reviews 214 | Q&A 48

Epson V600

Excellent do-it-all



Slide/Negative Scanners

Pacific Image PowerSlide 5000 CCD Slides Scanner



In Stock

Free Expedited Shipping

PRODUCT HIGHLIGHTS

- Batch Scan 50x50mm Mounted Slide
- Nonstop Scanning - 50 Slides at a Time
- 48-bit, 5000dpi
- Magic Touch Dust & Scratch Removal

Show more

★★★★☆ Reviews 74 | Q&A 21



Pacific Image Prime Film XE Film Scanner

B&H # PAPFXE ▪ MFR # PRIMEFILM XE

- 35mm Slide and Negative Film
 - 48-Bit Color Depth
 - Optical Resolution: 10,000 x 10,000 dpi
 - Dynamic Range of 3.9
 - Output at Up to 16-Bit
 - One-Touch Scanning
 - Digital Noise Reduction
 - Magic Touch Technology
 - Multiple Exposure and Sampling Functions
 - Silverfast SE Scanning Software
-



Pacific Image PrimeFilm 7200 35mm Slide/Film Scanner

B&H # PAPF7200U ▪ MFR # PRIMEFILM 7200U

- Digitize 35mm Negatives & Slides
 - 7200dpi Optical Resolution
 - Automatic Dust & Scratch Removal
-



Plustek OpticFilm 8200i Ai Film Scanner

B&H # PLOF8200IAI ▪ MFR # 783064365338

- 7200dpi
 - 48-bit Color Depth
 - Integrated Infrared Dust/Scratch Removal
 - Built-In Color Calibration
 - Programmable 1-Touch Scan Buttons
 - Includes SilverFast Ai Studio 8
-





Braun NovoScan 3-in-1 Film and Photo Scanner

B&H # BRN311 ▪ MFR # 34521

- Scan 35mm Strip and Slide Film
 - Scan 3.5 x 5", 4 x 6", & 5 x 7" Photos
 - 5.1MP CMOS Sensor
 - Optical Resolution: 1800 x 1800 dpi
 - Color Depth: 24-Bit
 - Scan Speed: 2 Seconds
 - 2.4" Color LCD Screen
 - Auto Exposure and Color Balance
 - Saves Scans as Memory Card
 - Powered over USB 2.0 Interface
-



Braun MULTIMAG SlideScan 6000

B&H # BR6000S ▪ MFR # 034515

- 5000 dpi
 - Batch Scan 50 Slides
 - Preview Scan in 15 Seconds
 - Backlit Window For Slide Viewing
 - 48-Bit Color Depth
 - Magic Touch Dust & Scratch Removal
-

Cheapest for slides/negatives
uses your cell phone



Dedicated slide/negative, somewhat better
There are many of these from \$50 to \$160
They advertise 22MP or 14/22MP
This means they are a 14MP sensor and
interpolate to 22MP
Image is about 3200 x 4800 pixels (3200DPI)





Wolverine Data F2D Titan 8-in-1 High-Definition Film to Digital Converter

B&H # WOF2DTITAN ▪ MFR # F2DTITAN

- Scan 35mm, 110, 127, 126, and APS Film
 - Works with 8mm & Super 8 Movies
 - 20MP Scan Resolution: 5472 x 3648
 - Scan Speed: 3 Seconds
 - 4.3" Color LCD Screen
 - Auto & Manual Brightness & Color Balance
 - Speed-Load Adapters for Slides/Negatives
 - Saves Images as JPEGs
 - Internal Memory & SD/SDHC Card Slot
 - Mini-USB and HDMI Ports; AC or USB Power
-



Lomography Smartphone Film Scanner

B&H # LOSFC ▪ MFR # Z100SCAN

- Direct Scanning of Film with Smartphone
 - Accepts All 35mm Film Types
 - Supports Panoramic & Movie Film Formats
 - Simple Method for Sharing Film Photos
 - Lomoscanner App for iOS and Android
-



Wolverine Data Film2Digital MovieMaker-PRO 8mm and Super 8 Converter

B&H # WOF2DMMPRO ▪ MFR # F2DMMPRO

- Scan 8mm and Super 8 Film
 - 3.53MP 1/3" CMOS Sensor
 - Creates Full HD 1080p Video at 20 fps
 - Works with Reels up to 9"
 - Automatic or Manual Exposure Control
 - Supports SD/SDHC Card up to 32GB
 - TV-Out Cable for TV Playback
 - USB 2.0 Connectivity
-

< \$400 (HD), worth it if you have a few hours of film to scan
~\$229 for DVD resolution version

Book scanners

CZUR ET16 Plus Advanced
Book&Document Scanner



A Gift for the person who has everything



Hasselblad Flextight X5 Scanner

B&H # HASFX5 ▪ MFR # H-70380301

- Virtual Drum, Vertical Loading
- Scan 35mm to 4 x 5" Film & Prints
- Optical Resolution: 8000 dpi
- 4.9 Dmax
- Color Depth: 16-bit
- Scan Speed: 300 MB per Minute
- Reflective Scanning up to A4
- Batch & Slide Feeding Capability
- Active Cooling & FlexTouch Dust Removal
- Firewire Interface

You Pay: **\$25,695.00**

1

Add to

Add to Wis

Best Choices

	Flatbed	Document	Slides/Negatives
Many documents		Y	
A few documents	Y	Y	
Pictures	Y		
Slides/Negatives	Maybe*		Y
Many slides			Maybe**
Old documents	Y		

* The scanner must have a transparency adapter. Even with that the quality is not as good as a dedicated slide scanner, but is often more than adequate.

** The scanner should have a slide stack loader. You can also have Costco, Legacy, Walmart or somebody else do it for you. \$\$

Resolution

- PPI, pixels per inch
 - Also called DPI, dots per inch
- The optical resolution is the important one
 - Some scanners show interpolated pixels on the box, it is a useless marketing number
 - You will want at least 300 PPI for paper, 1200 if you want to enlarge
 - 2400 or better for slides and negatives

How Many Pixels to Scan

- Newspaper should be twice LPI
 - Typically about 144/inch
 - Mismatch will give moiré patterns
 - Scanner software usually has a setting to fix this
- Photos vary depending on use
 - For monitor display 300 DPI is fine
 - For printing larger, you need 300 DPI * enlargement, to double size use 600
- Documents need 300 DPI
- Slides/Negatives need at least 2400 DPI

Examples (common)

- Newsprint
 - 144 dpi
- Weekly magazine
 - 266 dpi
- Glossy magazine or book
 - 300 dpi
- Photos
 - 300 or more for enlargement

Enlargement Example

- A 4" x 6" you want to print as 8" x 10"
- 4 -> 8, so you are doubling
- Since you want to print at 300 PPI you must scan at $300 \times 2 = 600$ PPI





50dpi

100dpi





300dpi



600dpi



1200dpi

24 or 48 bit scans

- Many scanners can set the bit depth
- 24 (8 bits per color) is normally enough
- 48 (16 bits per color) is better if you need to make major image adjustments, but the files will be twice as big
- Some software says 24 and 48, others say 8 and 16. 8=>24 and 16=>48

Hardware & Software

How scanner is connected and what runs it

Connecting the Scanner

- Today:
 - WiFi, gaining popularity
 - USB, most common
 - Others used in the past, SCSI, Parallel

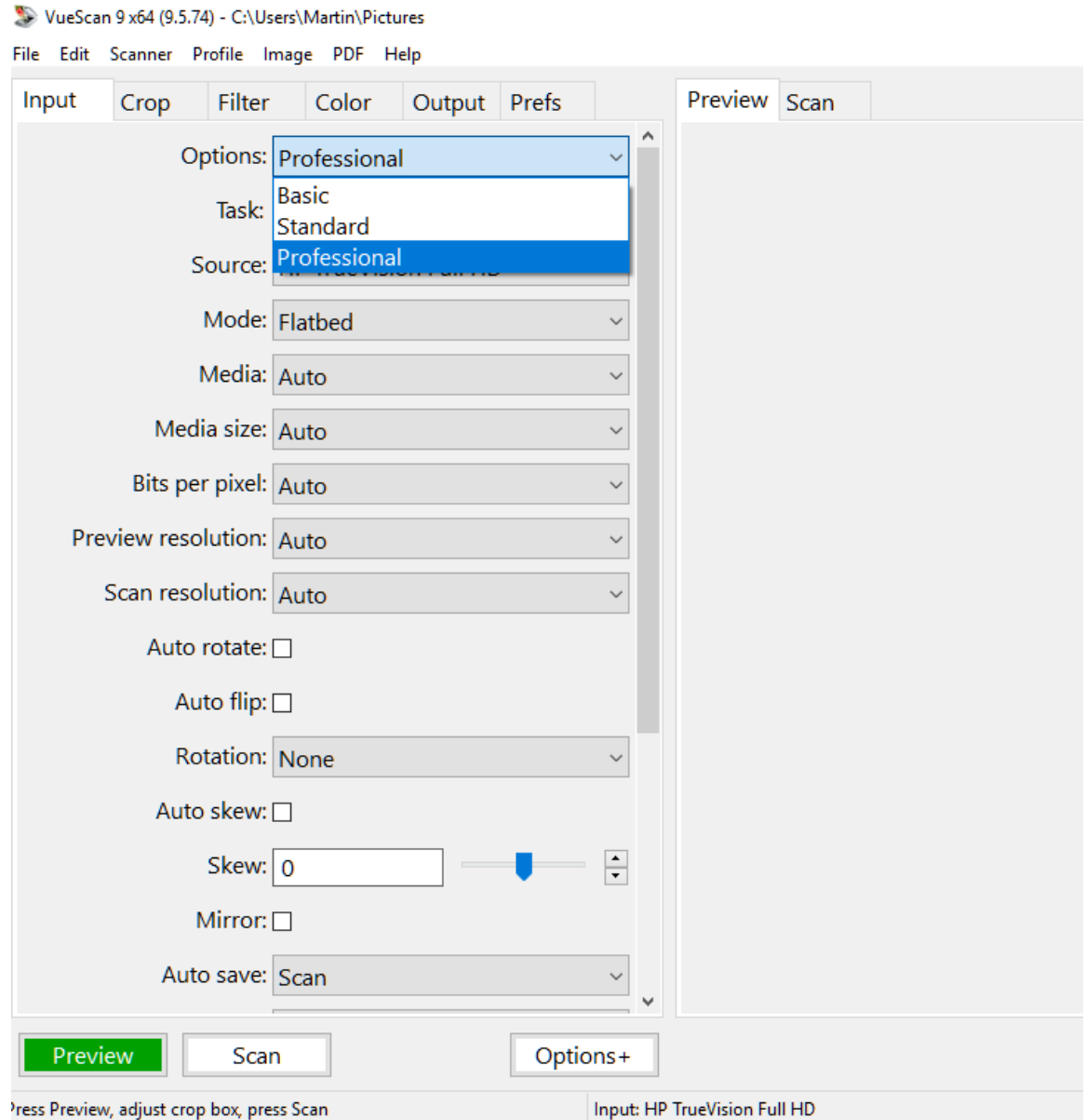
Software Drivers

- Twain
 - Most scanners come with TWAIN drivers
 - This works with most software programs
- Some scanners from Fujitsu do not
 - You can only use Fujitsu software to scan
- Only rarely will you need to know about this, it gets installed automatically

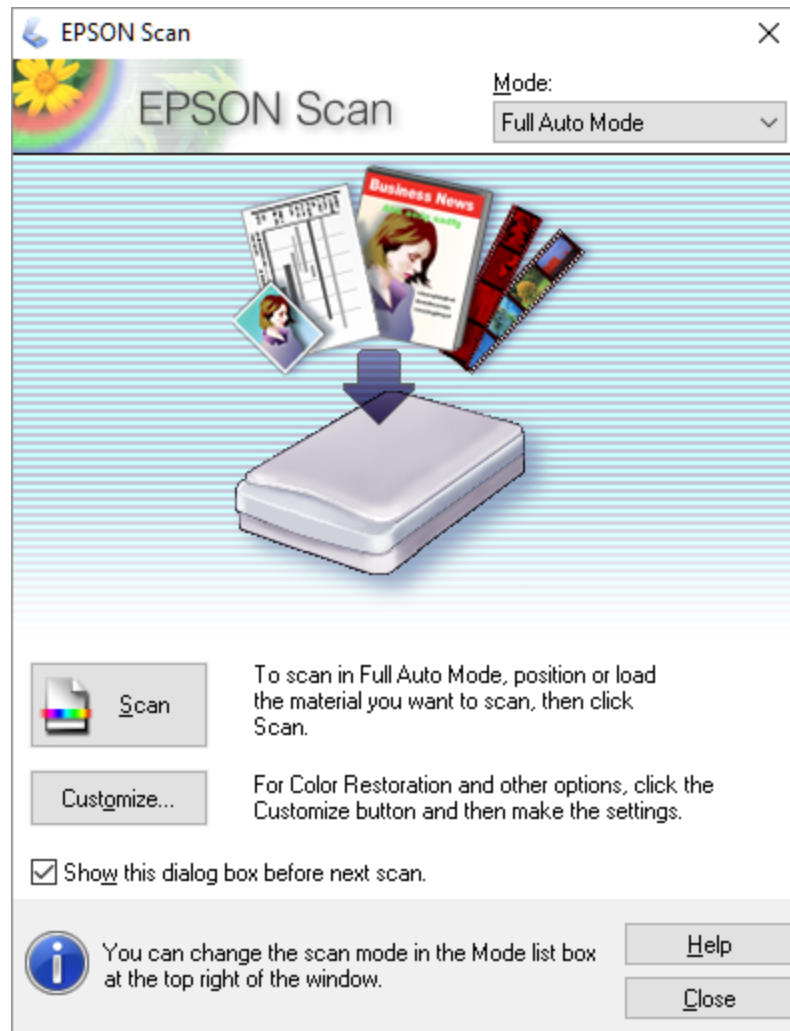
Scanning Software

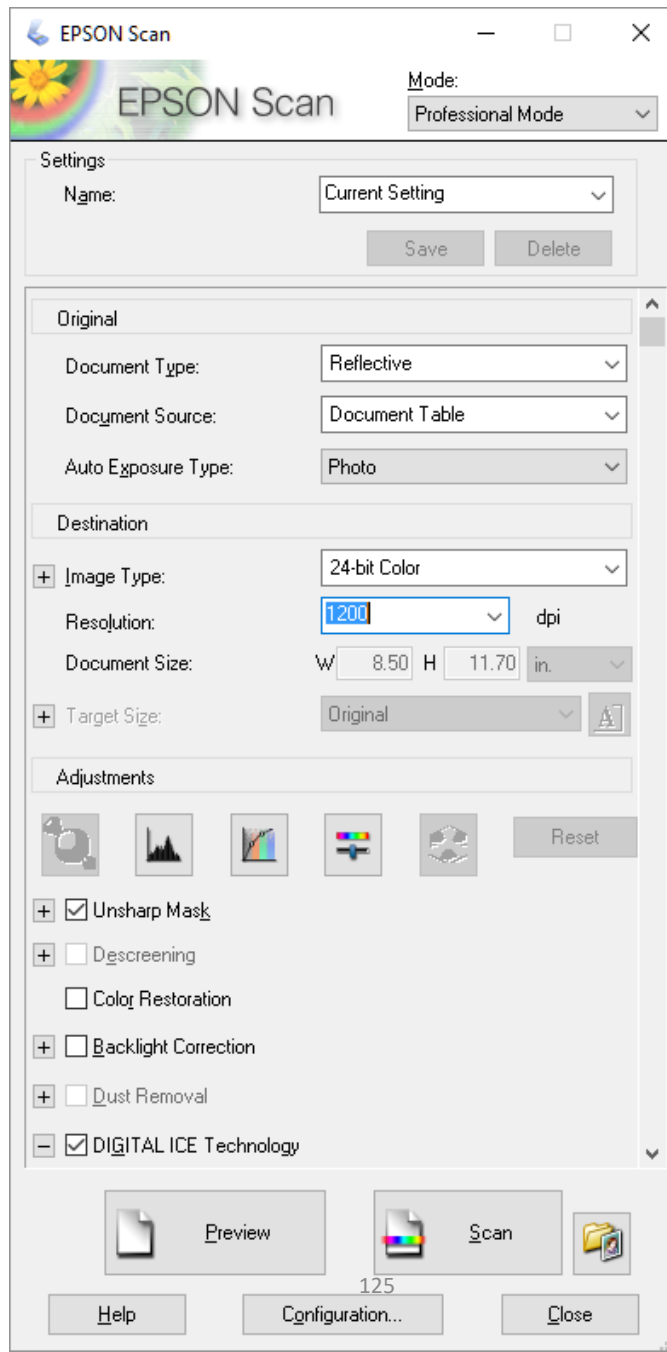
- The user interface that you see when scanning
- I recommend using the one that comes with the scanner
- There are universal scanning packages
 - VueScan is one of the best, it supports many makes and models, especially useful for older models that don't work on Windows 10!
- Some programs have built-in scanning

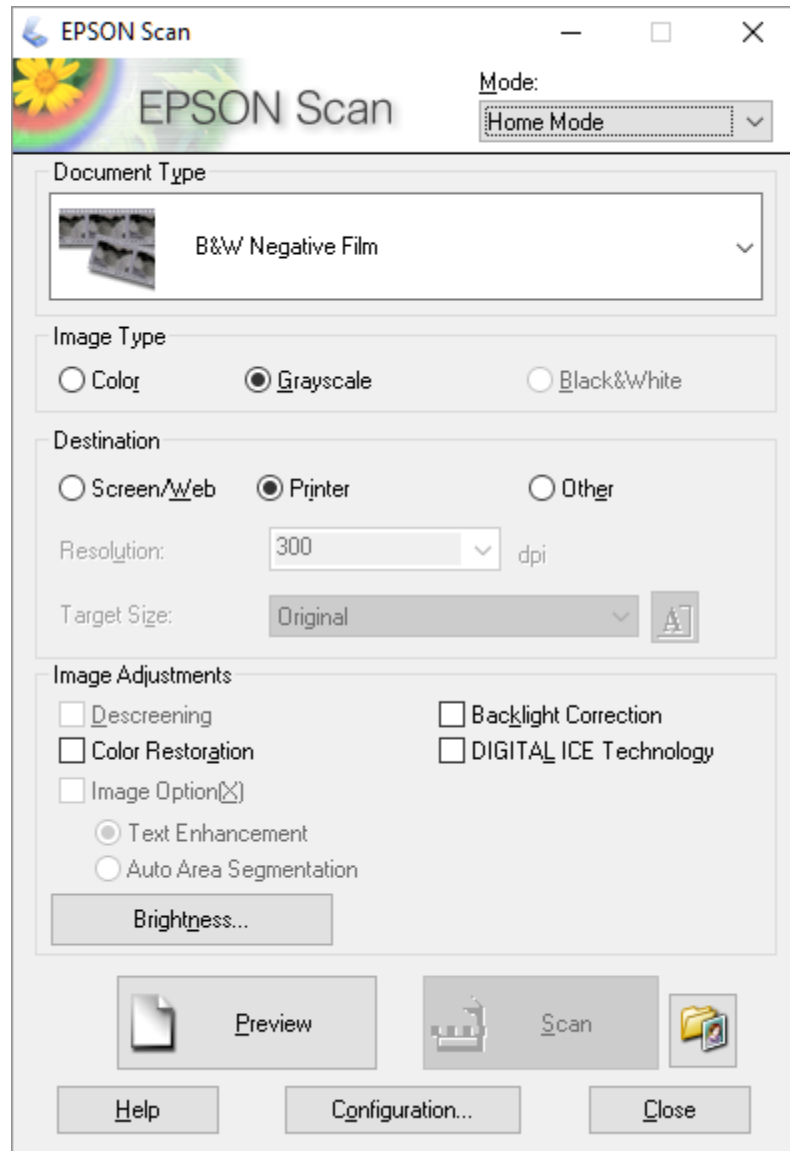
VueScan

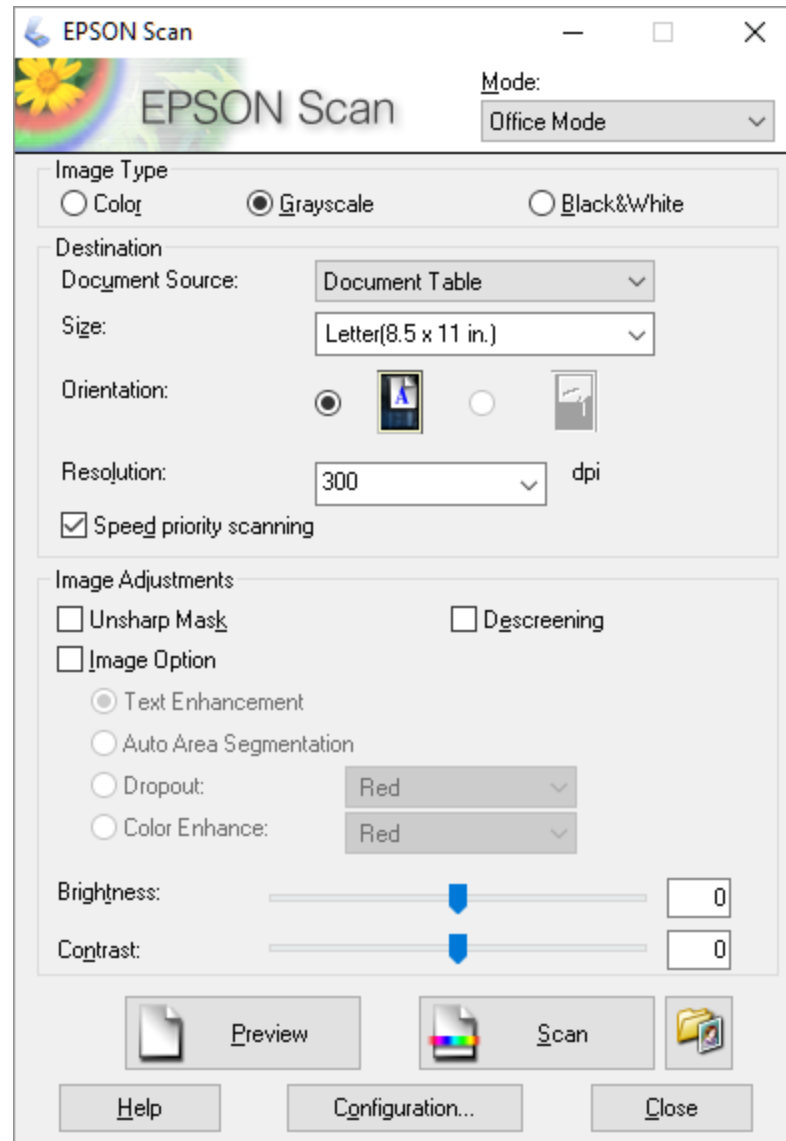


Epson Scanner Software

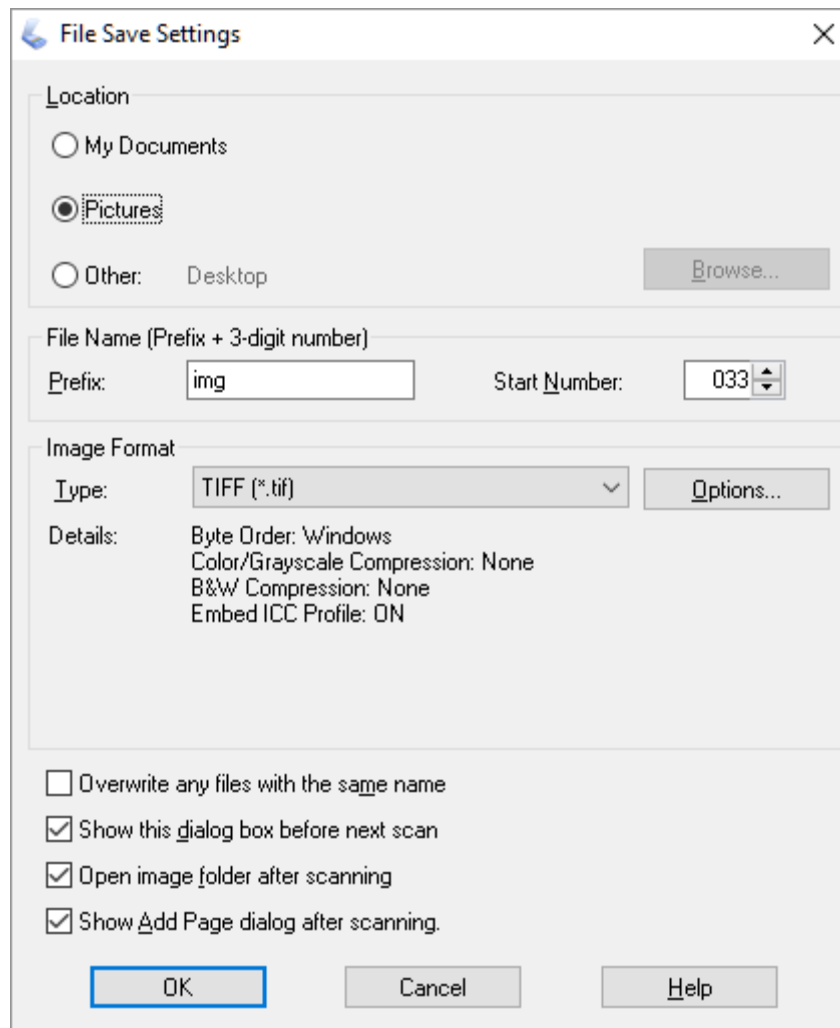






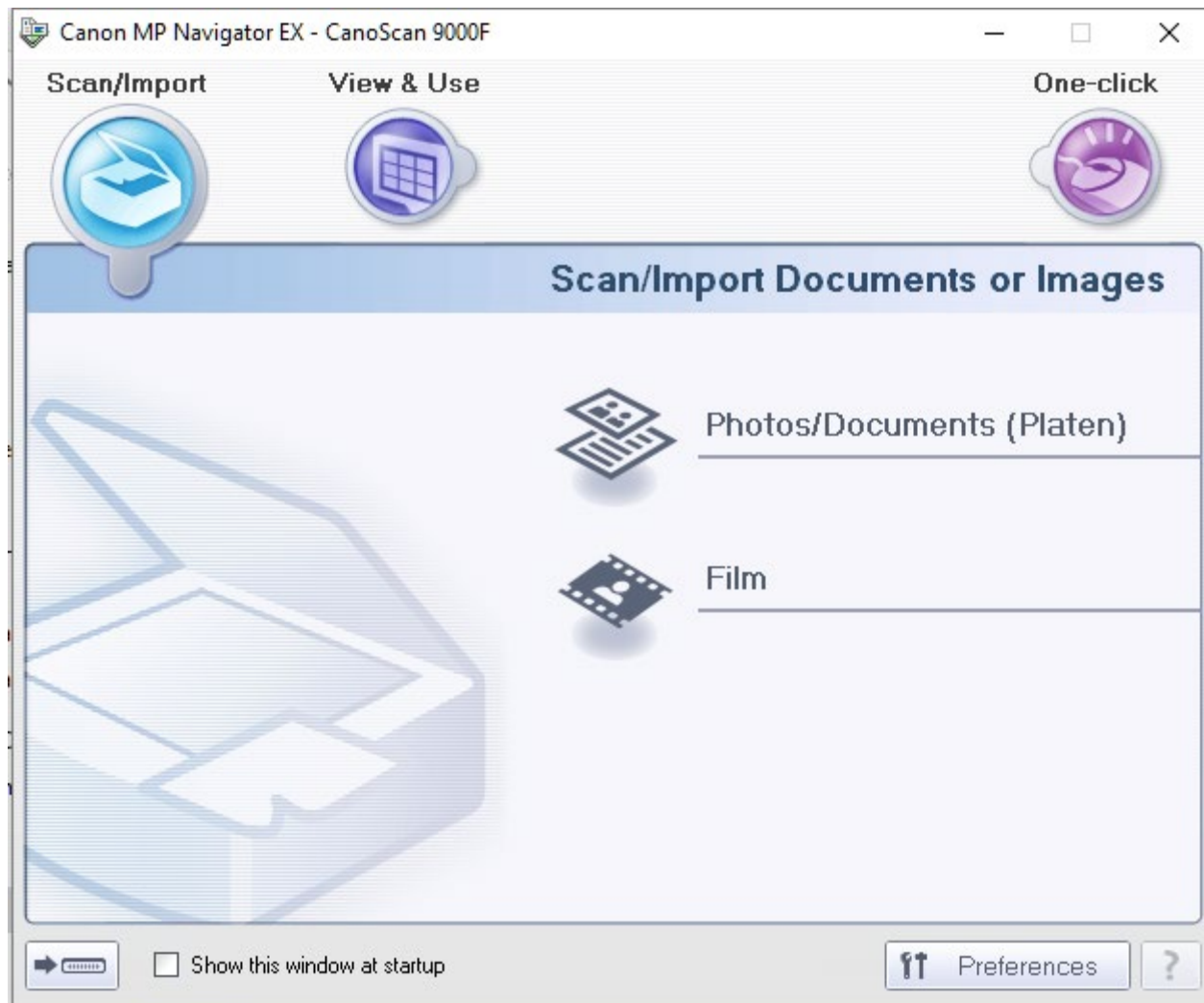






Canon Scanner Software

Canon MP Navigator



Canon MP Navigator EX - CanoScan 9000F

Scan/Import

Photos/Documents (Platen)

Film

Document Type:
Color Photo

Document Size:
Auto Detect (Multiple Documents)

Resolution:
600 dpi Specify...

Use the scanner driver

Scan

Clear


Jump to Main Menu

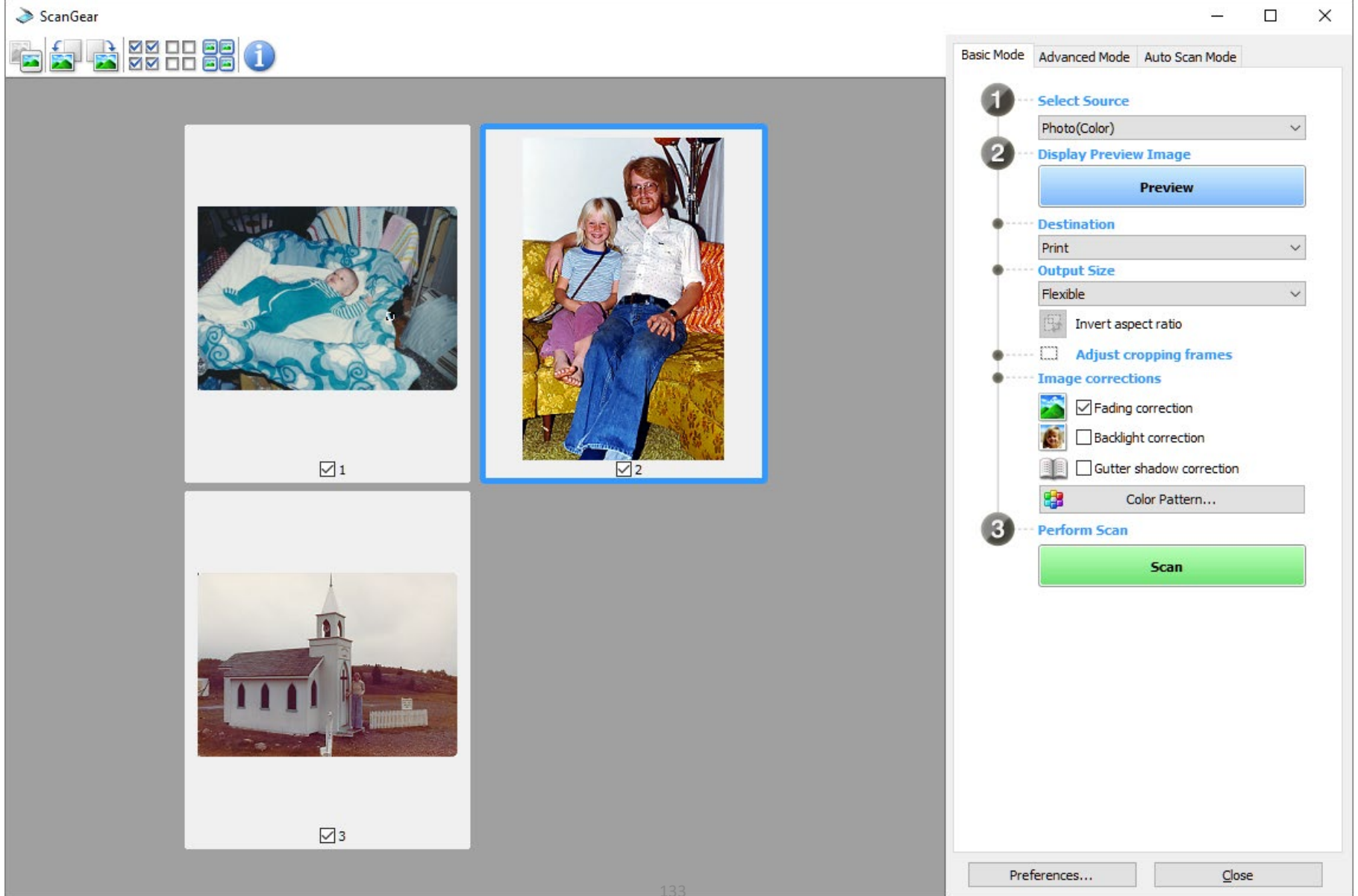
Follow the procedure below to scan photos or documents.

Preferences ?

By Date

- 1 Place Documents**
Open the document cover and place the photo or document on the platen.
- 2 Select [Document Type]**
Select the type of photo/document from [Document Type].
- 3 Click [Scan]**
Scanning starts.





ScanGear

Basic Mode | **Advanced Mode** | Auto Scan Mode

Favorite Settings User defined

Input Settings

Select Source : Platen

Paper Size : Full Platen

Color Mode : Color

4.82 3.42 inches

Output Settings

Output Resolution : 300 dpi

Output Size : Flexible

4.82 3.42 100%

Data Size : 4.25 MB

Image Settings

Image Adjustment : Auto

Unsharp Mask : ON

Descreen : OFF

Reduce Dust and Scratches : Medium

Fading Correction : Medium

Grain Correction : None

Backlight Correction : None

Gutter Shadow Correction : None

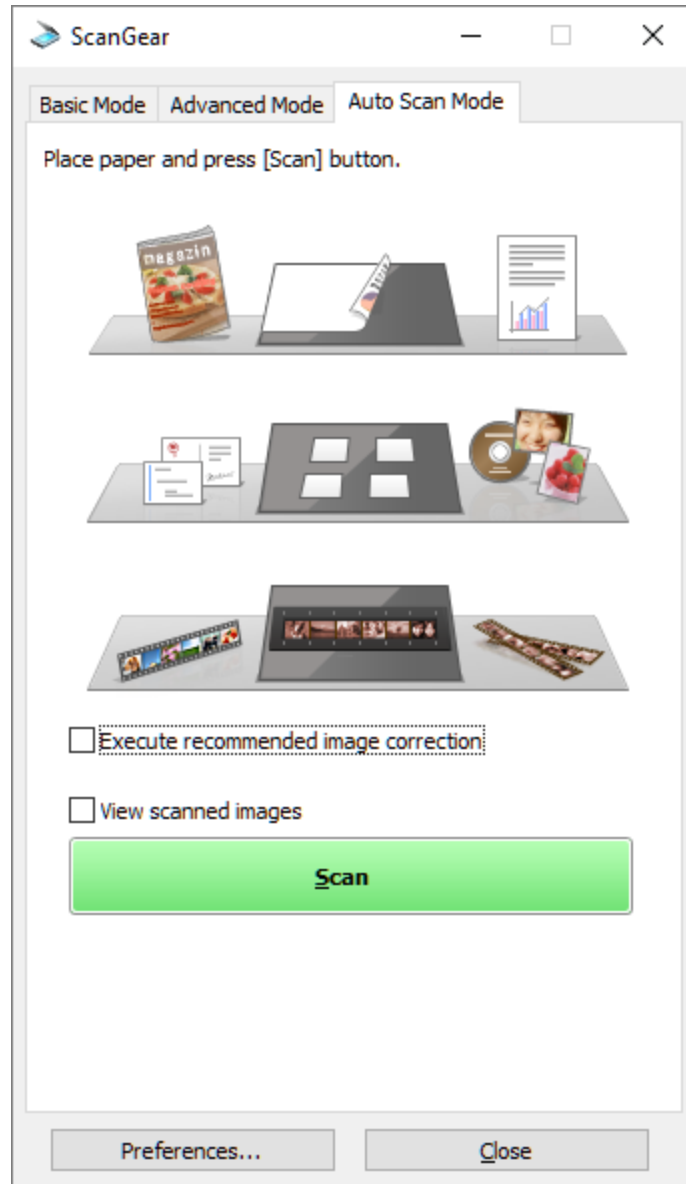
Custom Defaults

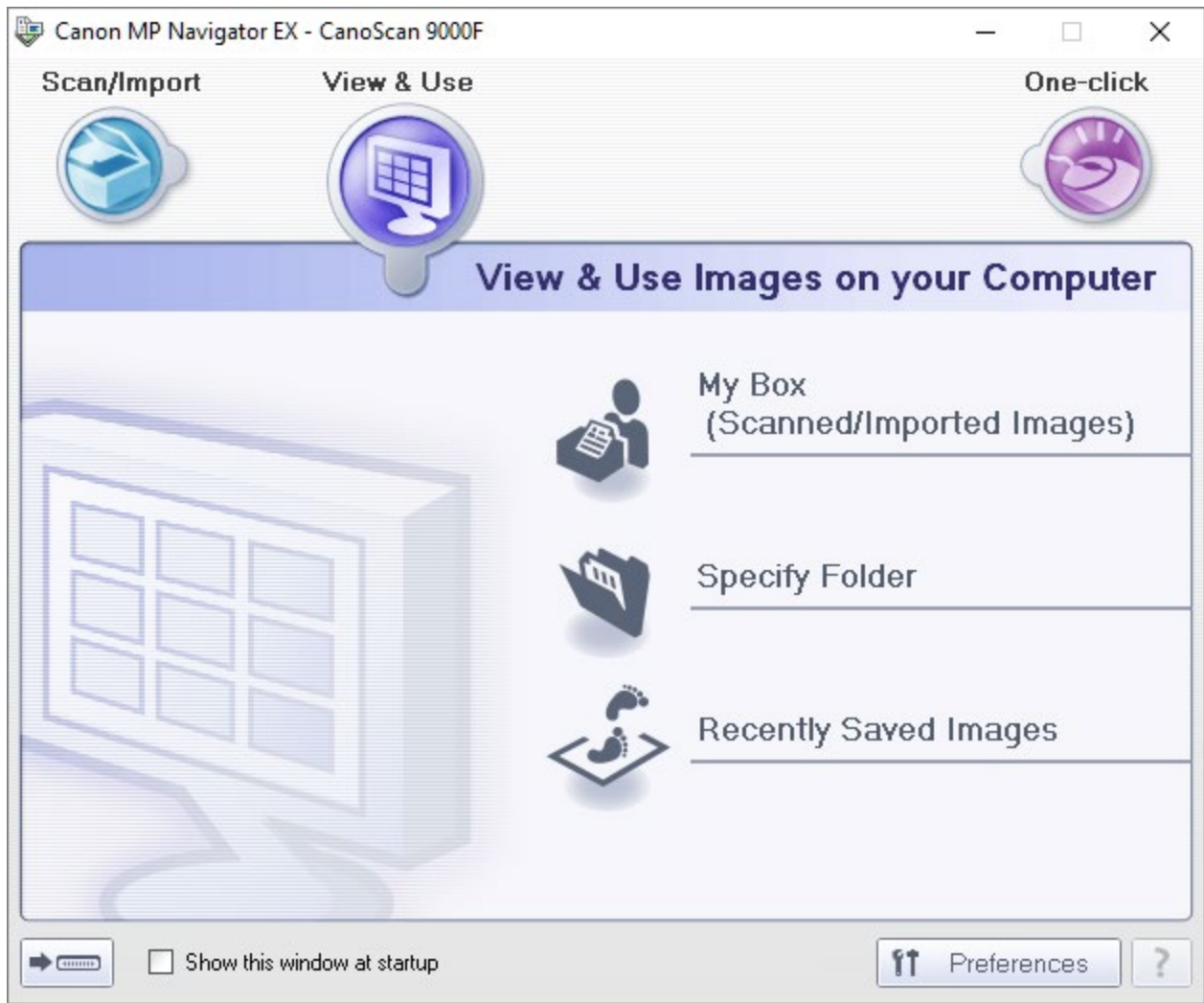
Zoom

Preview Scan

Preferences... Close

1 2 3





Using a Cellphone Camera

- Many packages that make your phone camera act like a scanner
- Work fine, might need tripod in dim light
- I use CamScanner and Adobe PDF
- You will have to figure out how to get the file from your phone to the computer
 - Android, looks like a USB drive
 - iOS (iPhone), use iTunes, or just share

Using a DSLR

- Nikon makes an adapter that holds the negative or slide in front of the lens
 - Need micro/macro lens
- Older models can sometimes be found on eBay
- Other brands used to be available, maybe still are, I haven't looked lately

Cheap Film Scanners

- High speed claims
- Some of them use webcams internally and the quality is very poor

Scanner or Camera

Scanner

- Slower, high quality
- Curled documents and photos flattened
- Framed photos difficult
- May have sheet feeders
- Takes up space

Camera

- Very fast
- Pictures not flattened
- Framed photos ok
- Might need tripod
- Very small

Using a Camera or Cellphone

- Use tripod, quadrapod, or copy stand
- Camera settings
 - Low ISO, 100
 - Raw file format (for finest quality)
 - Close focusing lens (macro)
 - Sharpest F-Stop, usually around f/8-f/11
 - Cable release or self-timer
 - Soft lights



Objects, Rings, knick-knacks

- Sometimes you will need photos of objects that are not just photos, but are still valuable
- A lightbox is good for this
 - Family History Center and some Stake buildings have <https://shotbox.me/>
 - It is also good for copying some photos

Web Photo Sharing

Sharing and publishing sites

Study them carefully, they have differences

Popular Sites

- www.eyefi.com
- www.facebook.com
- www.flickr.com
- photos.google.com
- www.instagram.com
- www.photobucket.com
- www.pinterest.com
- www.smugmug.com
- www.thislife.com

NOTE: some sites don't store full resolution images

Family History Sites/Apps

Roots Magic

Family Tree Maker

Legacy

Ancestry.com

PAF, really really old now

Others

Roots Magic

- Typical Family History Program
 - Free version and low-priced version with more features
 - Mac and Windows versions
- Stores people and relationships
- Can store media attached to people
 - Photos, documents, and audio
- Import from familysearch.org



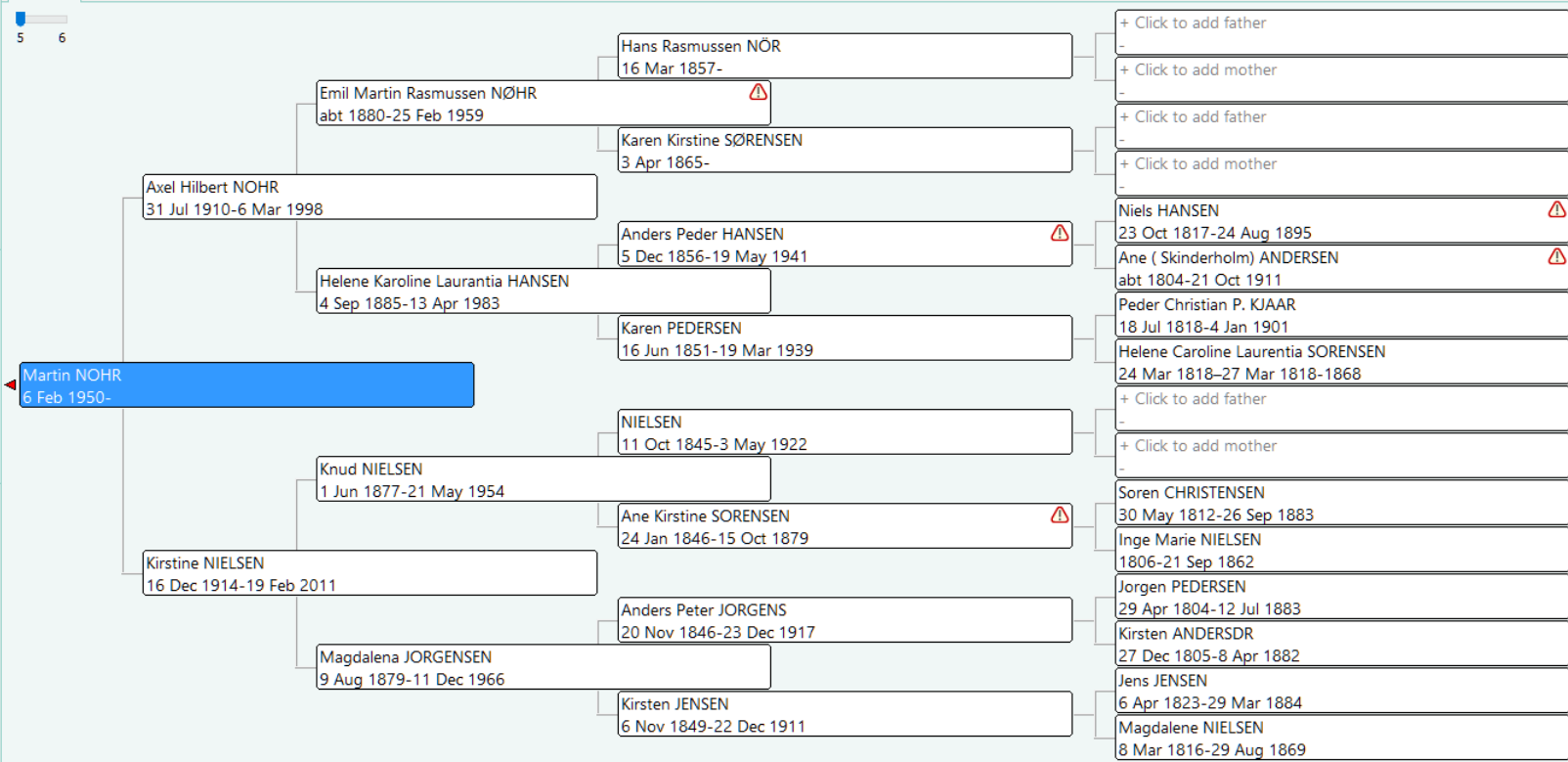
Martin NOHR
 b: 6 Feb 1950 in Aarhus, Aarhus, Denmark
 m: 14 Jul 1977 in Cardston, Alberta, Canada (age 27)
 d:



Index

Name	Born
NIELSEN, Anders Peter Jor...	1907
NIELSEN, Anna	1906
NIELSEN, Anna Ingeborg	1910
NIELSEN, Anna Kirstine In...	1905
NIELSEN, Inge Marie	1806
NIELSEN, Kirsten Gudrun	1926
NIELSEN, Kirstine	1914
NIELSEN, Knud	1877
NIELSEN, Knud Magmis	1913
NIELSEN, Magdalene	1816
NIELSEN, Niels Christian	
NIELSEN, Niels Sorensen	1874
NIELSEN, Soren	1867
NIELSEN, Soren Holger	1908
NIELSEN, Soren Holger	1911
NIELSEN, Soren Marinus	1878
NIELSEN, Soren Marinus	1879
NOHR, Axel Hilbert	1910
NOHR, Kaj Hans Peter	1913
NOHR, Malcolm Steven	
NOHR, Marie Ann	
NOHR, Mark Benjamin	
NOHR, Martin	1950

Pedigree Family Descendants People WebSearch Timeline



Edit Person
— □ ×

Martin NOHR

+ Add a fact
✗ Delete fact
🔧 Options
📄 Address
🖼️ Media
📁 ToDo
📖 Research log
🏷️ WebTags (0)
👤 Groups

Facts	Date	Details	Age		
Person		📍 Martin NOHR			✓
Spouse		Mazelle Ann MALCOLM			
Parents		Axel Hilbert NOHR and Kirstine NIELSEN			
Birth	6 Feb 1950	Aarhus, Aarhus, Denmark	0		
Marriage	14 Jul 1977	Mazelle Ann MALCOLM - Cardston, Alberta, Canada	27		

Person

Given Names:

Surname: Sex: Male ▾

Prefix: Suffix:

Nickname: Living

💾 Save ✕ Cancel

Person Details

📄 Note No person note

📄 Sources No person sources

Last edited: 19 Apr 2017
📄 Close

Martin NOHR

+ Add a fact
✗ Delete fact
🔧 Options
📄 Address
📁 Media
📁 ToDo
📄 Research log
🏷️ WebTags (0)
👤 Groups

Facts	Date	Details	Age			
Person		⤴ Martin NOHR				✓
Spouse		Mazelle Ann MALCOLM				
Parents		Axel Hilbert NOHR and Kirstine NIELSEN				
Birth	6 Feb 1950	Aarhus, Aarhus, Denmark	0			
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Person

Given Names:

Surname: Sex:

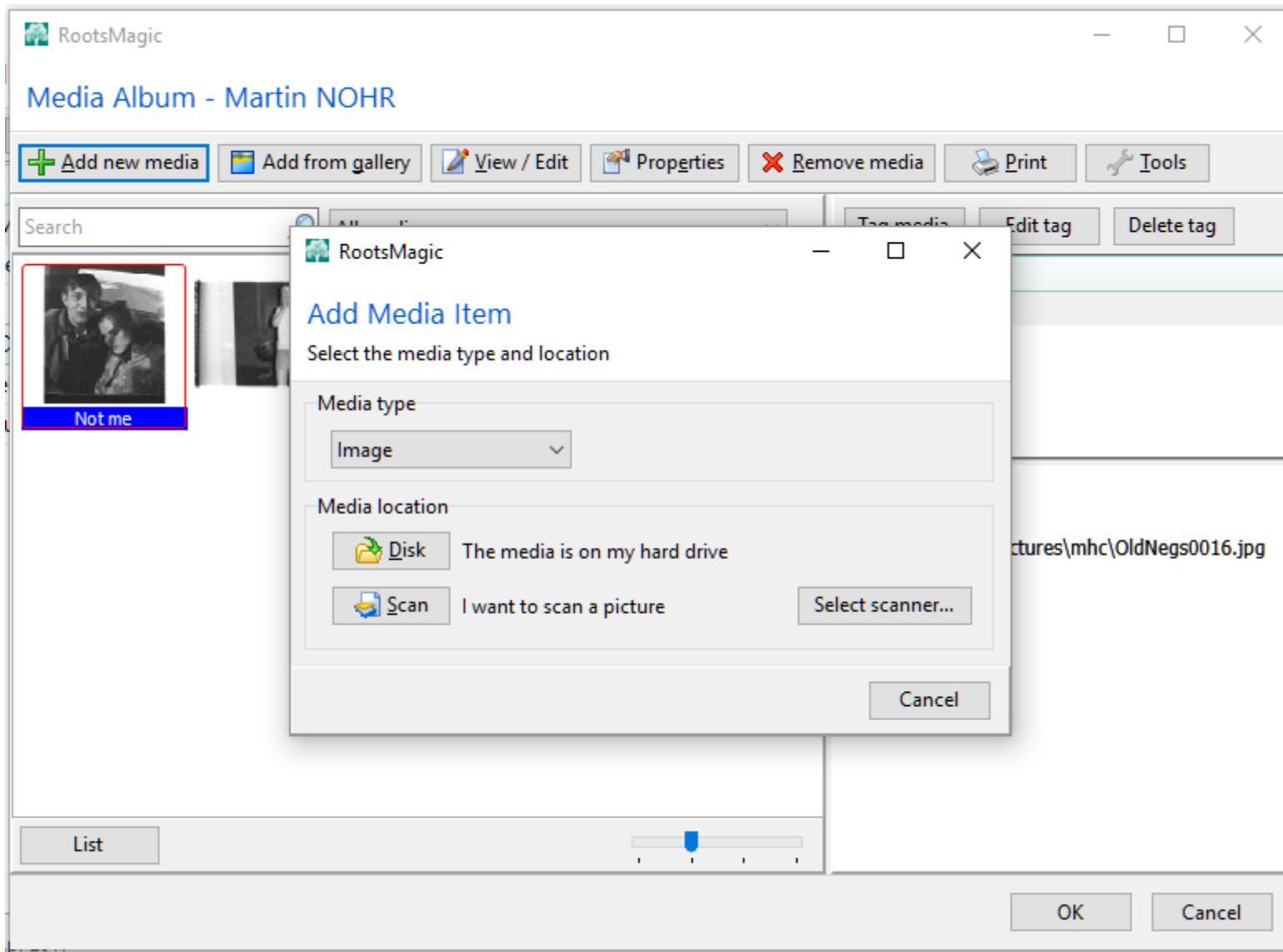
Prefix: Suffix:

Nickname: Living

Person Details

No person note

No person sources



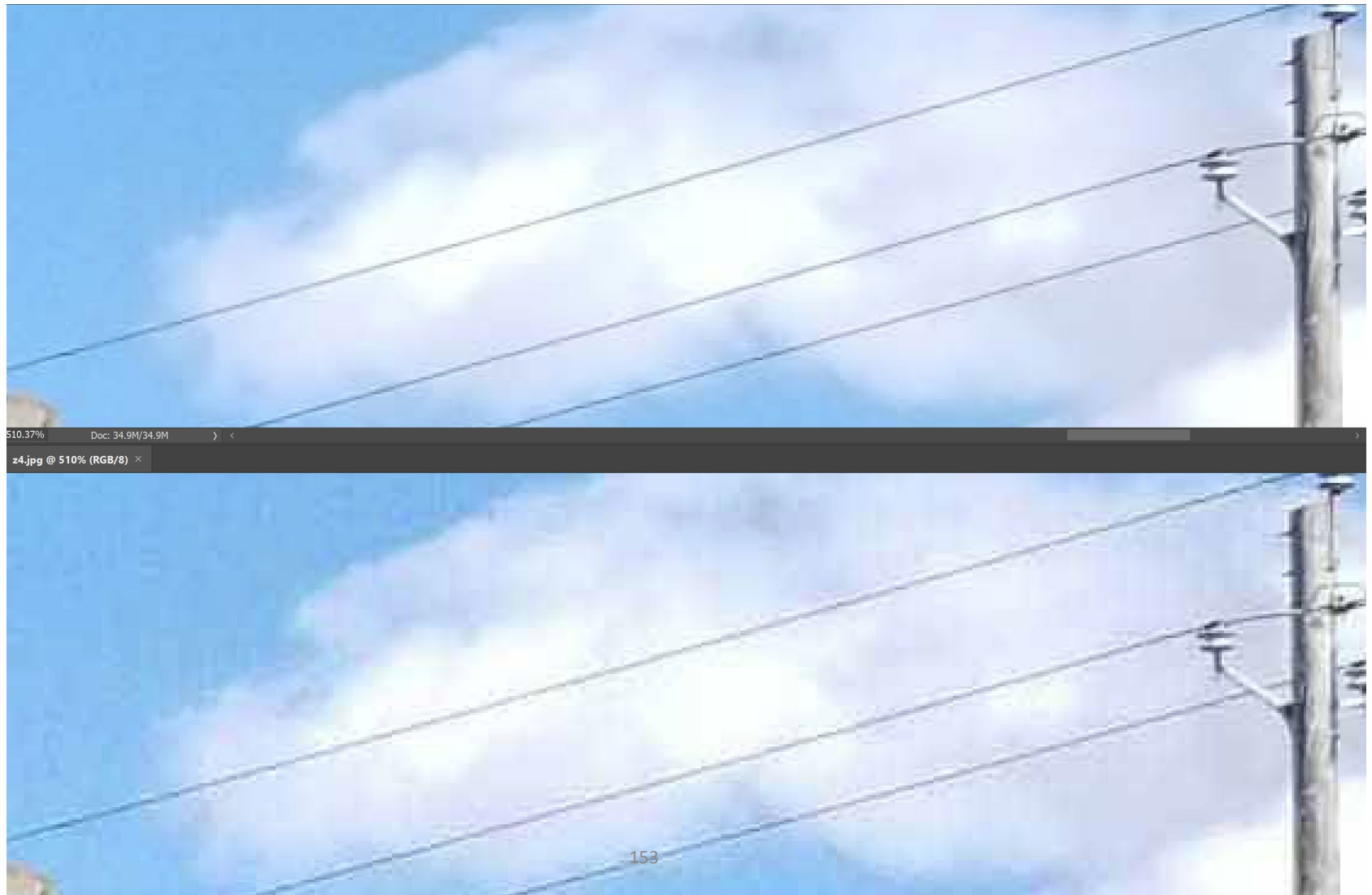
Management and Editing Software

How to find stuff and other things

Something to be aware of about JPEG vs non-lossy formats

- JPEG
- Quality loss
- Should NEVER be edited and re-saved, image rot (generation loss)
- Use for eMail or Web
- Non-lossy
- No loss of quality
- Save in PSD, TIFF or other non-lossy format, editing does not damage image
- Easily convert to JPG

- re-compression causes problem, happens on cropping or quality settings etc.
- IF you don't change size or jpg settings the quality loss can be minimal
- Top is original, bottom is 6 pixel crop and save 4 times



Now That I've Scared You...

- Modern photo editors use what is called parametric editing, the jpg files are never modified
- The jpg files are treated as “negatives” and are never touched
- The editing changes are saved as instructions for viewing the file

Image Managing and Editing Software

- ACDSee
- Luminar
- Adobe Lightroom
- Adobe Photoshop Elements organizer
- Aperture, Mac, no longer supported
- Google Photos (replaced Picasa)
- Others, features to look for:
 - Offline browsing of archives
 - Easy searching
 - Editing and printing

More Image Managing Software

- Cyberlink PhotoDirector, Corel Paintshop
- Zoner, Luminar, On1, Capture One, etc.
- Look for the features you need
 - Easy searching and browsing
 - Editing and printing

Google Photos (replaced Picasa)

- Automatic tagging
 - Works amazingly well
 - Matches faces
- Non-destructive image editing
- Excellent price! Free, but photos must be on Google drive, you may need to buy space eventually

Example Prices (sometimes on sale)

- On1, \$99.99 license, or \$129.99/year
- Capture One, \$300 license, or \$20/month
- Lightroom/Photoshop bundle, \$9.99/month
- Luminar, \$70 license
- Cyberlink PhotoDirector, \$69.99 license
- ACDSee, \$59.99 license
- Zoner, \$49.99/year

Finding People

- Especially useful for family histories, people are important
- Facial recognition software common now
 - Google photos and Lightroom support

Google Photos

- Replaces Picasa
- Automatic tagging
 - Works amazingly well
 - Matches faces
- Non-destructive image editing
- Excellent price! Free
- May need to buy more Google drive space

Aug 18, 2016



Jul 3, 2016



Feb 6, 2016



Aug 13, 2015




<https://photos.google.com/search/tractors/photo/AF1QipP4yJV6CAs4P33kVpkBzTS2YQQHVy2Z1hcXsv04>





Info


Add a description

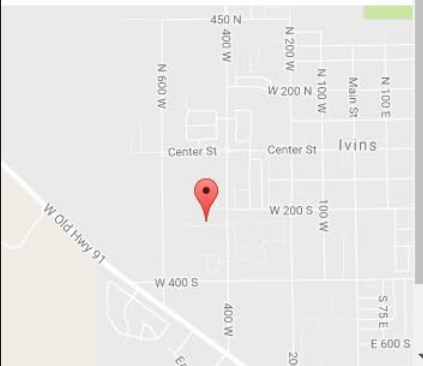
Details

 **Aug 18, 2016**
Thu, 12:26 PM

 **20160818_122655.jpg**
12.2MP 4032 x 3024 3.4 MB

 **SM-G930V**
f/1.7 1/1584 4.2mm ISO50

 **Ivins, UT**
37.164, -113.69



ACDSee

- Excellent software and affordable
- Has many of the same features as LR and some that are better
- It does support tags (keywords) and XMP metadata like titles and captions
- It features facial recognition much like LR

File Edit View Tools Help Pictures - ACDSee Pro 10 - Trial

Workspaces Import Batch Create Slideshow Send Editors Actions Buy Now! Manage Photos View Develop Edit 365

Folders Catalog Calendar Network > MARTIN-I7-V2 > Users (\MARTIN-I7-V2) > Martin > Pictures > Quick Search

Filter Group Sort View Select

Properties - Metadata

Metadata Presets (Ctrl+M) Apply

Default Metadata View

— IPTC

	Content
Title	
Headline	
Description	
Description Writer	
Keywords	
IPTC Subject Code	
Contact	
Creator	
Job Title	
Address	
City	
State/Province	
Postal Code	
Country	
Phone(s)	
Email(s)	
Web URL(s)	
Copyright	
Copyright Notice	
Rights Usage Terms	
Image	
Intellectual Genre	
IPTC Scene Code	
Location	
City	
State/Province	
Country	
Country Code	

Preview SeeDrive

SM-G930V 4032x3024 3.4 MB

P -- [] [] --

ISO 80 f/1.7 1/120 s 0.00 eV 4.25 mm

3/22/2016 5:38:32 PM

finish banner.ai img001.jpg img003.jpg Joe Vs Toby.ai lamp.3ds

Total 47 items (171.1 MB) | JPG | 20160322_173832.jpg | 3.4 MB, Date Taken: 3/22/2016 5:38:32 PM | 4032x3024x24b

Luminar

- Appears to be very good editor
- It's main deficiency is that it does not yet support tags (keywords) so you can only browse your folders
- It also doesn't support XMP metadata like captions and titles

Lightroom

Library/Collection manager

Image editor

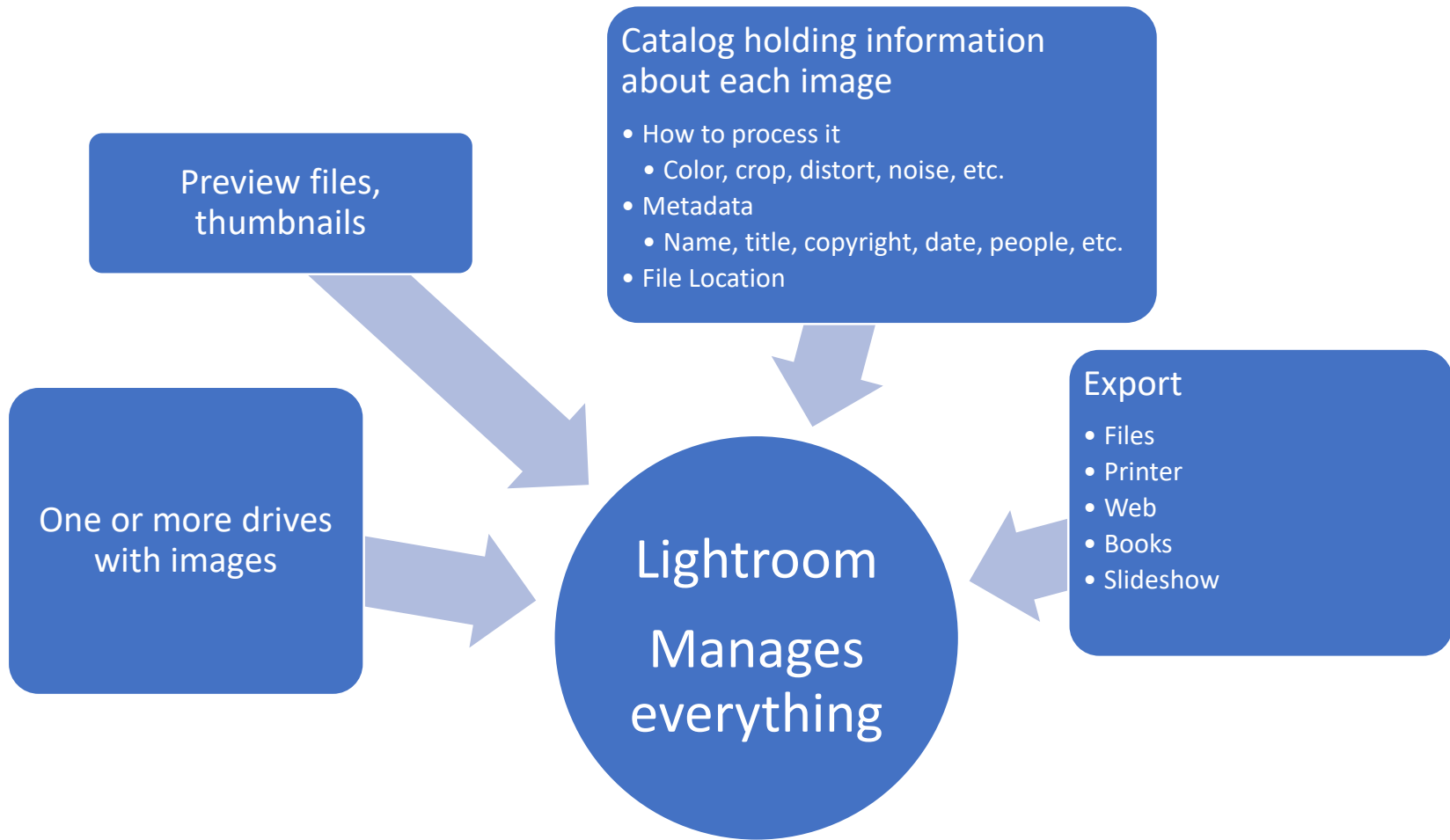
Printing and publishing tool

A Tale of Two Lightrooms

- Lightroom Classic
 - Files stored anywhere
 - Full featured editing, printing, exporting, etc
 - For this class LR means this version
- Lightroom (new)
 - Cloud based
 - Images stored in cloud
 - Not as full featured as classic, yet

Adobe Lightroom

- Great tool for managing photo collection
- Keyword/metadata searching
- Never modifies the original image file
 - Excellent tools for editing the image
 - This is a really big deal! The originals are treated like negatives and will never be damaged by editing, editing can instantly be undone, even after saving
- Virtual copies, tiny disc space



Lightroom

- Can get Photoshop and Lightroom for \$9.99/month
- LR is a great image management tool
 - Import, export, store, tag, locate, display, compare, edit, print, map, web, photo book, slide shows, and much more
- Runs on OSX and Windows

Lightroom Modules

- Import (get the images into LR)
- Export (get images out of LR)
- Library (browsing, searching, comparing)
- Develop (editing)
- Map (shows location, requires GPS)
- Book (coffee table books)
- Slideshow
- Print
- Web (photo collections)

Lightroom Workflow

1. Import images
2. Add keywords to aid searching later
3. Examine images
 1. Delete bad ones, improves your reputation!
4. Select some for editing
5. Output to web, PDF slides, print, or book
6. Later: search collection for further work

LR Facial Recognition

- Automatically creates name indexes
- Not 100% accurate, but very good
- Shows names as special keywords
- Enable in Edit | Catalog Settings

Face Detection

Automatically detect faces in all photos

Slideshows for Presentation

- Lightroom can create slideshows
 - The “slideshow” module
- Export as PDF or movie file
- Can add soundtrack, up to 10 files
 - Can sync slides to music
- Manual or automatic advance

Editing Images and Fixing Problems

How to improve images

Tools

- Photoshop (another class)
 - Color adjustments
 - Dust & scratch filters
 - Many other tools
- Scanner software
 - Descreening, eliminate Moiré patterns
 - Restore fading
 - Levels, curves, etc.

Restoration is Part Art

- Good enough is often amazing to others
- Do not expect to be “perfect”
 - Even slight improvements are good
- You will get better with practice
 - Never give up, but take a break occasionally

Dust Spots



Dust Spots Gone After Filter



Lightroom Dust Removal

- Spot tool, clone and heal
- Must use for each spot
- Automatically picks source, but can be changed later
- Checkbox, “Visualize Spots”
 - Helps to see the dust sometimes

Surface scratches



Discussion

- Photoshop can remove many dust spots at once, but causes some fuzziness
- Lightroom does one spot at a time with more control

Moiré Patterns



These happen due to interference between the scanner pixels and the dots used in printing. Choosing the correct PPI can minimize.



Color Faded Example



Enabled fading
correction in
Canon driver

This can also be
done in LR or
Photoshop



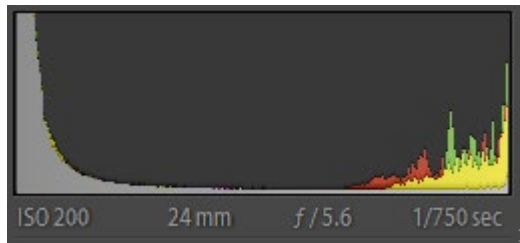
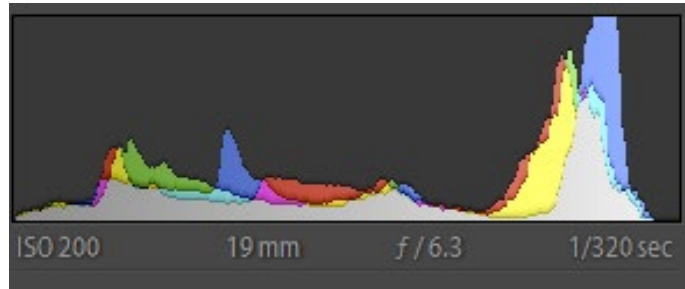
Histogram

- One of the most important tools you need to understand the scan quality
- It's a bar graph showing the count of pixels at each brightness level
 - Black on left
 - White on right
- A glance will tell you much
- Keep your eye on it while editing

Histogram Analysis

- Spikes show loss of data when adjacent pixels combined
- Holes show loss of data when pixels spread
- Crowding on black side shows poor shadow detail
- Crowding on white side shows poor highlight detail

Histogram example 1



Histogram example 2

