

# Google Photos

A pictorial/tutorial addressing the most asked questions.  
Viewed best in full screen mode.

Based on GP App v 5.15.0.337400196

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Revision 0.7 of this file



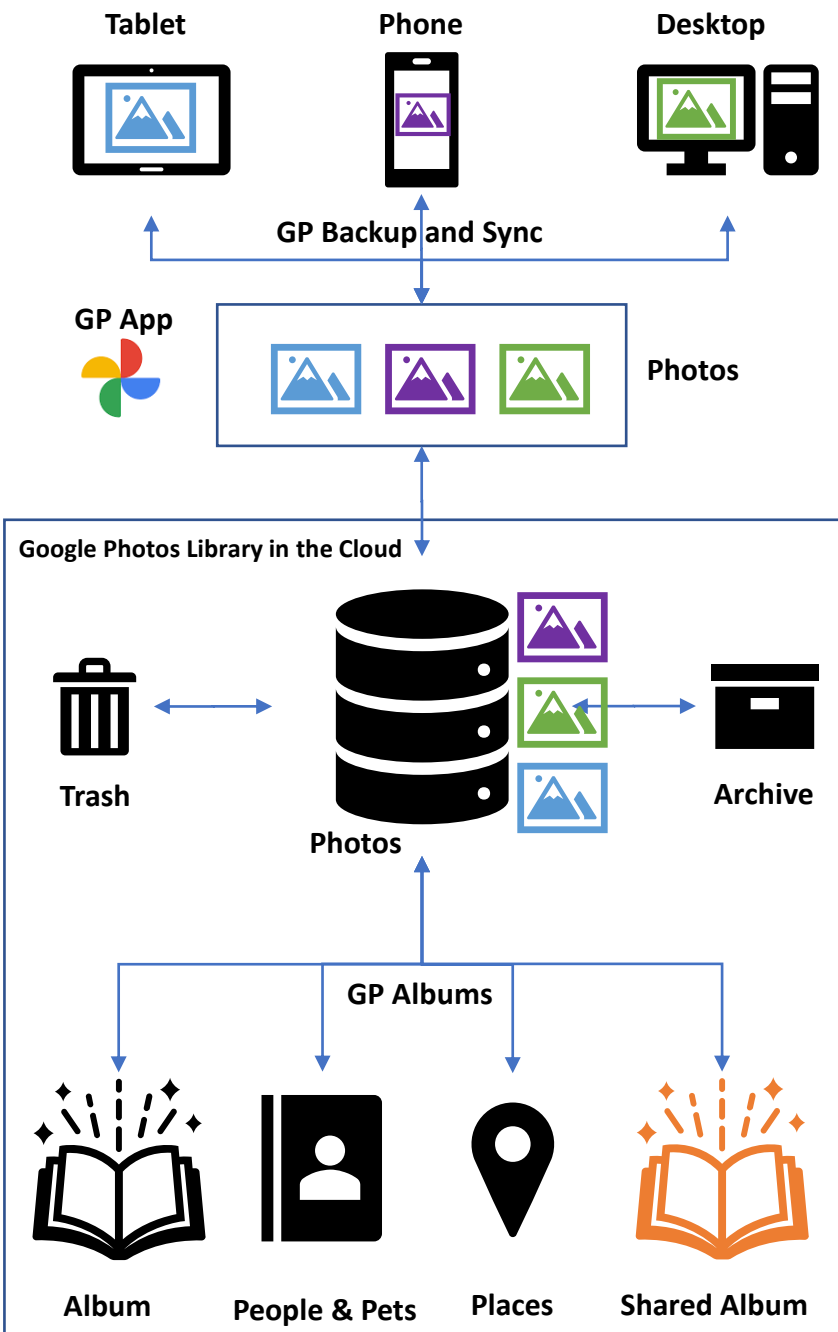
<http://wjhladik.github.io/Google Photos Pictorial.pdf>

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# The Basics

Google User A



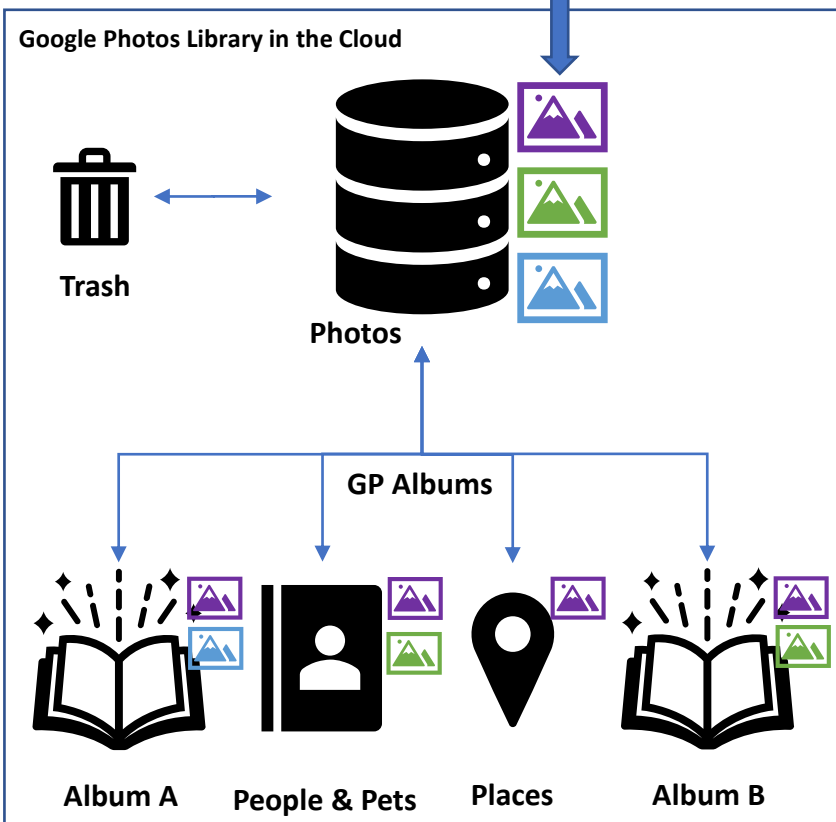
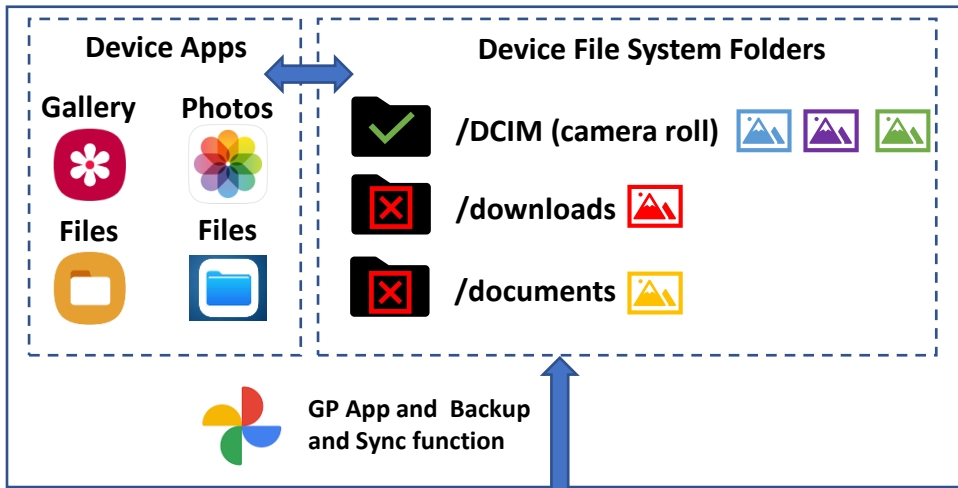
Pictures are taken or created on some device.

The Google Photos (GP) app or Backup and Sync app copies the photos to the GP Cloud.

Once photos are in the GP cloud, they can be viewed by the GP app on the device or from the GP website at <http://photos.google.com>. Any photo can be moved back and forth between the active Photos Library and either the Trash or the Archive.

Any photo can be tagged to appear in an album you create or in a Shared album you create. Any photo might also be tagged to appear in GP auto generated albums such as a People & Pets album based on facial recognition or a Places album based on location metadata or GP's AI inferences.

## Google User A's Device (e.g. Phone)

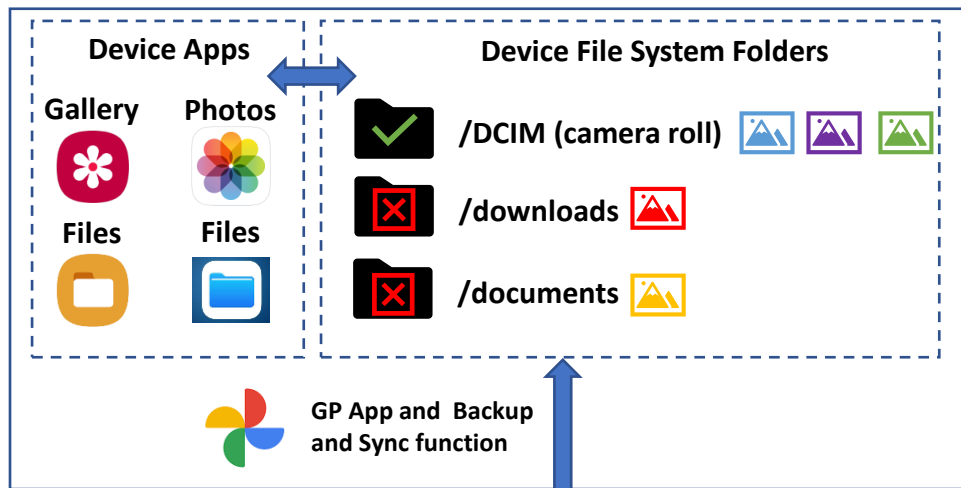


## Synching Photos from Your Device to the GP Cloud

How do photos get from your device to the GP cloud?

- The GP app for Android and iOS contains a Backup and Sync function that (when enabled) copies all photos on your device to the GP cloud.
- There is also a Windows or MAC app called Backup and Sync from Google that you can install and enable to copy photos from your desktop to the GP cloud.
- The GP App can configure the Backup and Sync function to turn on or off specific device folders from the syncing/backup process.
- When the GP app syncs photos from the device to the GP cloud, it puts them in the active library under “Photos”. This is the main view of all GP photos and it is sorted by date taken. This cannot be changed.
- Whether your device folder is synced, you can always manually upload photos into the GP cloud.
- GP tries hard to not add a duplicate photo into the GP cloud, but what it considers a duplicate photo and what you consider a duplicate photo may differ.
  - Two photos that look like the same scene or that may have been taken seconds apart by you or others are not duplicates to GP (even if you and all of your friends look at these photos and say "these are the same thing").
  - Your recourse is to delete one or more of them.

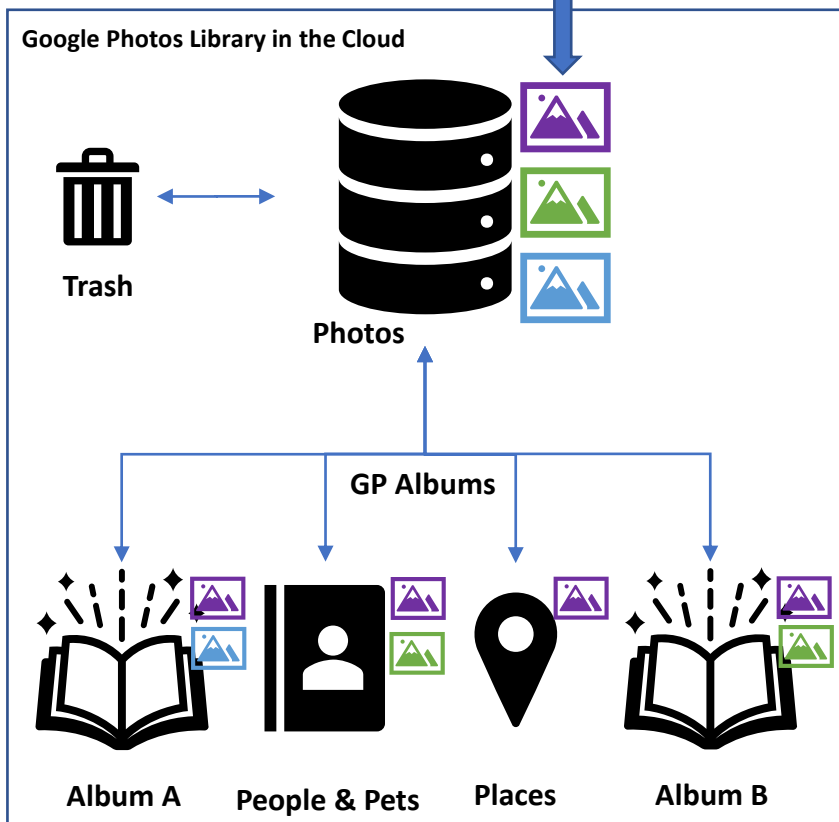
## Google User A's Device (e.g. Phone)



## Viewing Photos



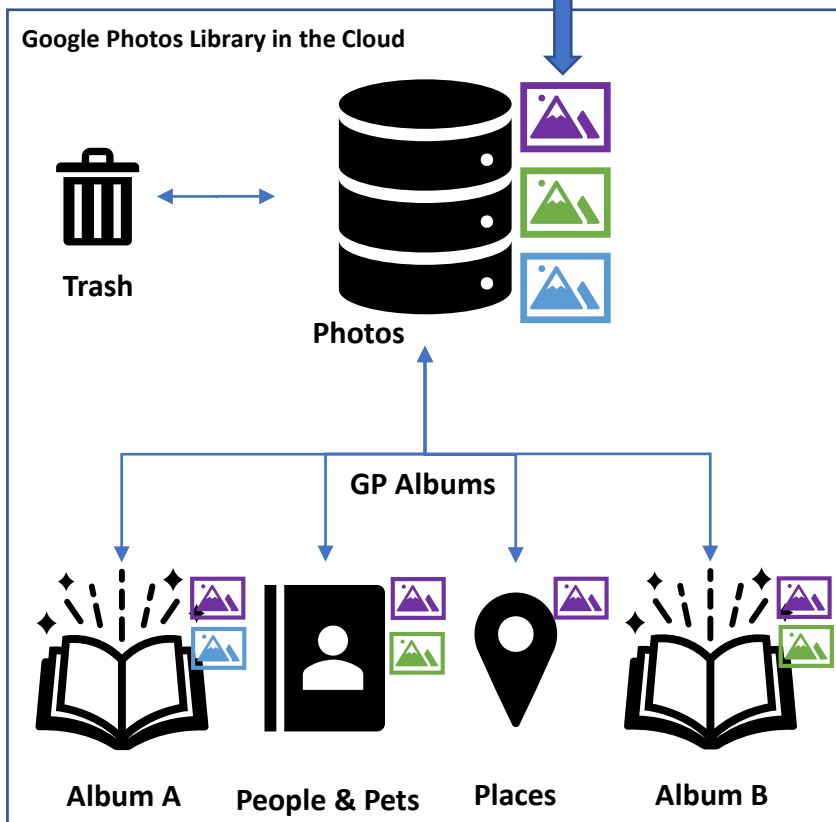
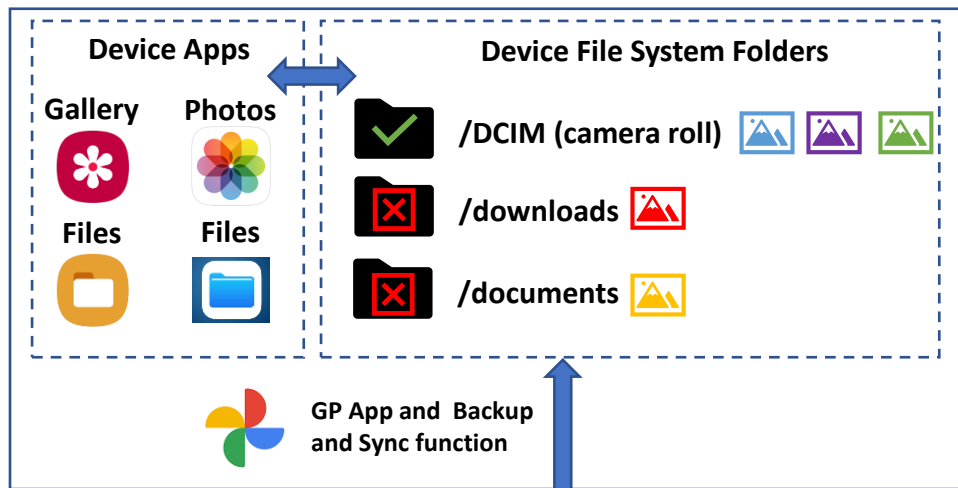
- The GP App can view photos in device folders and in the GP cloud.
- It can see photos on your device that have been backed up to the GP cloud and that have not been backed up to the GP cloud.
- It can see photos in the GP cloud that originally came from your device even if those photos are now deleted from your device.
- It can see photos in the GP cloud that did not come from your device.
- It can see photos from another user's GP Cloud if that user shared a photo or album with you.



- The native device apps like Gallery, Photos, and Files can only see photos in device file system folders.
- These apps may also create “albums”, but they are not Google Photos albums.
- These apps cannot see anything in the GP cloud.
- These apps may even look and feel like the GP App and may exhibit many of its functions, but they are independent of each other.

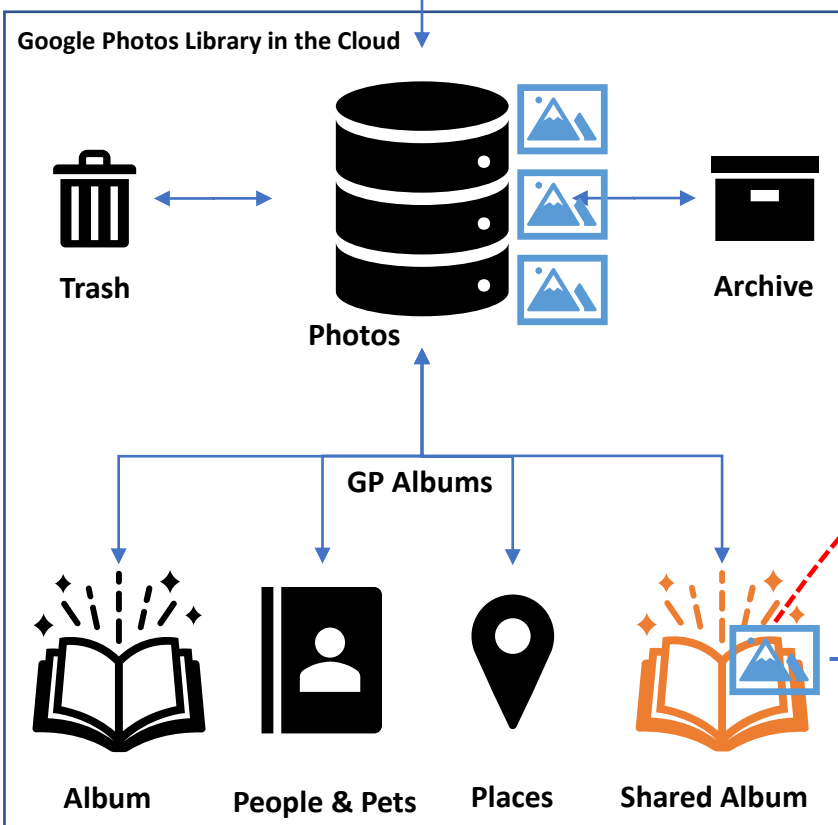
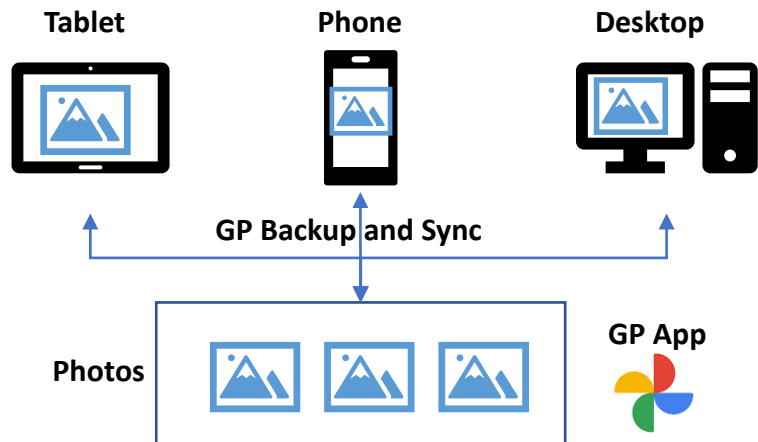
# GP Albums

## Google User A's Device (e.g. Phone)



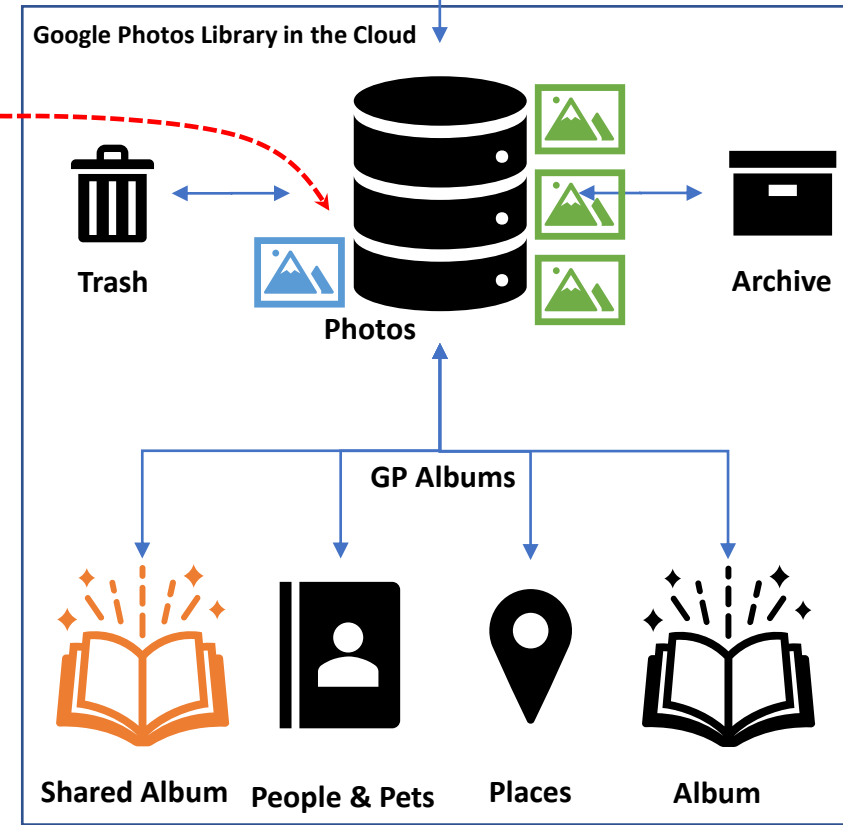
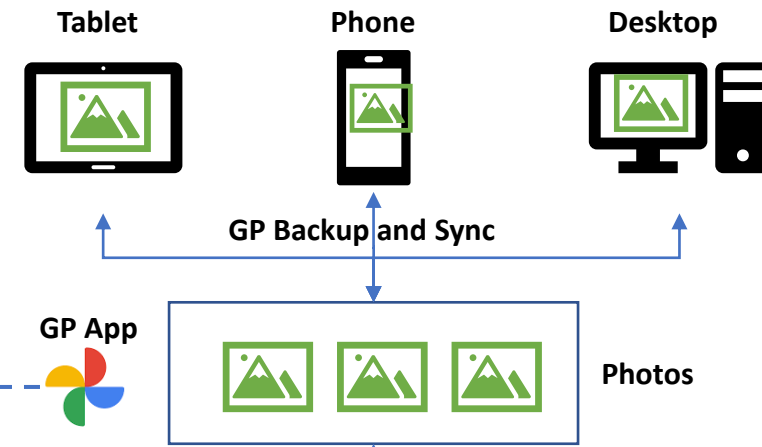
- GP albums are not equal to device folders (e.g. phone or desktop).
- GP only has albums. Your device has folders (and maybe albums).
- Even though GP may have uploaded/synched a photo from your phone automatically where it existed in a folder or album called "Christmas", you will not see that album in GP.
  - You would have to create it manually in GP and manually add the same set of photos to the album.
- Photos are independent from albums. You can delete an album and the photos associated with it remain in GP under the Photos tab.
- The same photo can be tagged for many different albums.
  - Photos do not exist inside albums like they do in file system folders on your device.
  - You are just associating photo names with album names in GP
  - User A can create multiple albums such as Album A and Album B. The same photo can be tagged to appear in multiple albums.  
(e.g. the purple photo appears in 4 different albums)
- GP itself might use its powerful AI to create its own albums under the People and Pets area and under the Places area. These are based on facial recognition and photo location.
- The list of albums (<https://photos.google.com/albums>) is sorted based on the most recent photo in the album. (e.g. if you add a newly taken photo to a very old album, that album will pop to the top of the list.)

## Google User A



## Sharing

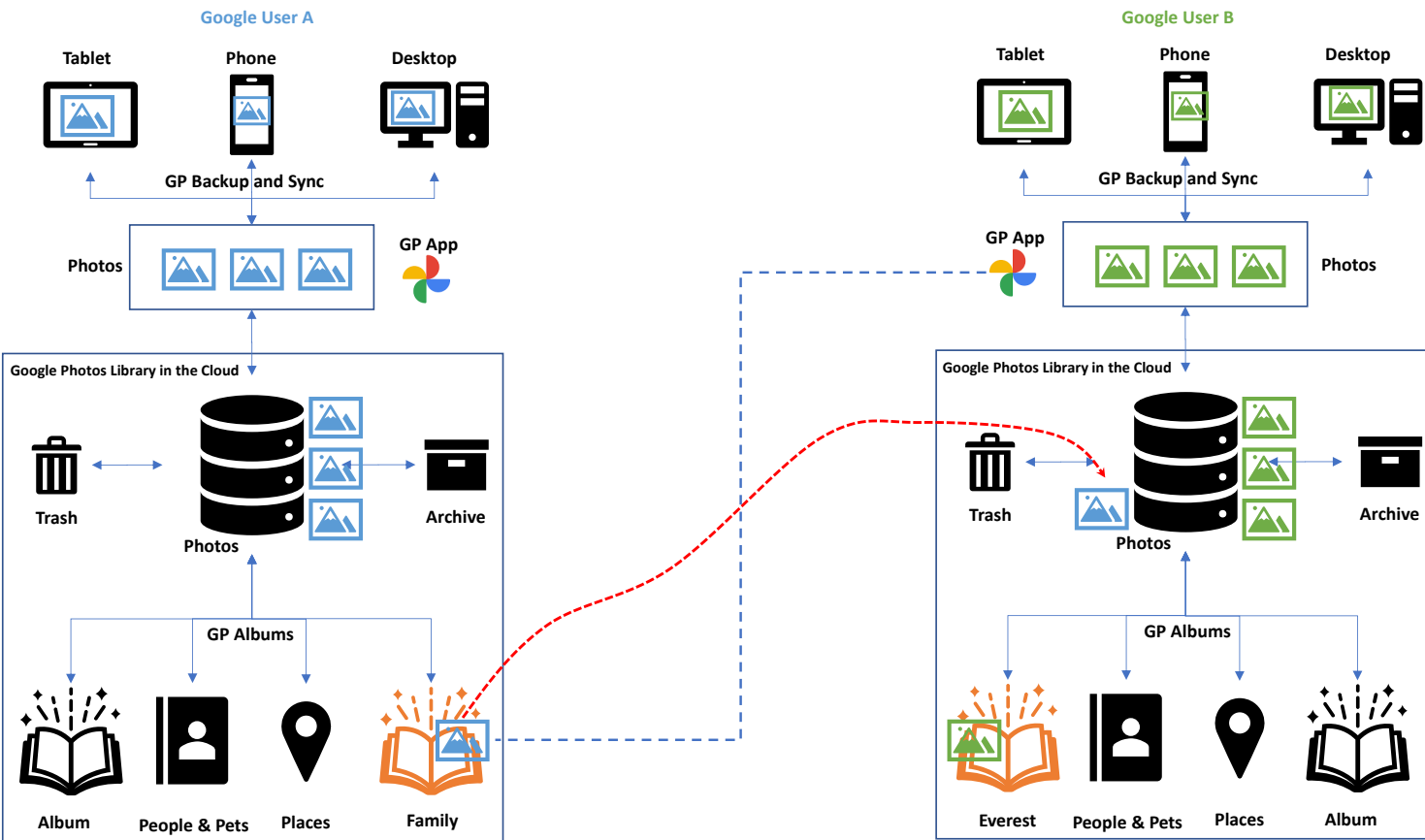
## Google User B



User B views Photo owned by User A via the Shared Album of User A

User B can optionally copy User A's Photo to User B's GP Library

# GP Shared Albums

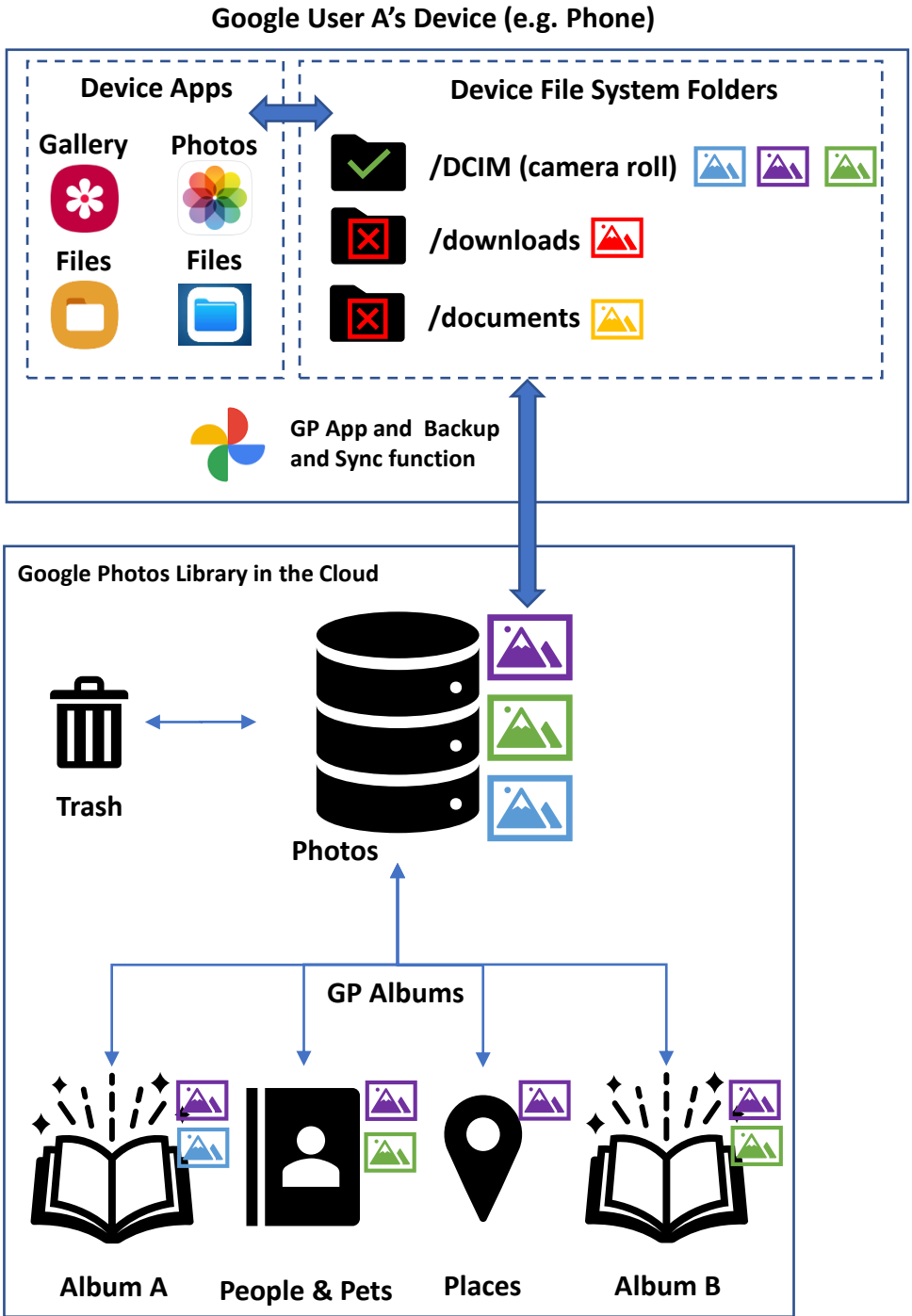




- A non-shared album can become a shared album by sharing it and changing options
- You can share albums with other people. They will not be able to delete your photos that might be associated with that album.
  - User B is viewing the blue photo from User A's shared album called "Family". - - - - -
- The other person can download your photos when they view the album, or they can add your photos in that album to their GP library.
  - User B copied the User A's blue photo to their own Photos library. - - - - -
- The album owner can edit the album and change the sorting and a few other things related to the album.

- With GP's "Shared Albums" the other people you shared your album with can add their own photos to the album.
  - The photos they add to the Shared Album are visible to you, but those photos are not in your library (e.g. the Photos tab).
  - and therefore their photos are not subject to GP's AI creations or facial rec unless you specifically copied them to your library.
- If you share an album with a non-google email address they get a link (url) to view the album.
- If you share an album with a google email address, they get a link but also will see the album listed in their GP app under the Sharing tab.
  - Anyone having this url link can see the photos, not just the person you shared the link with.
- If you look at one of your photos and see location information (that GP or you added), that location will appear to the person you shared the album or photo with (unless you specifically disable it).

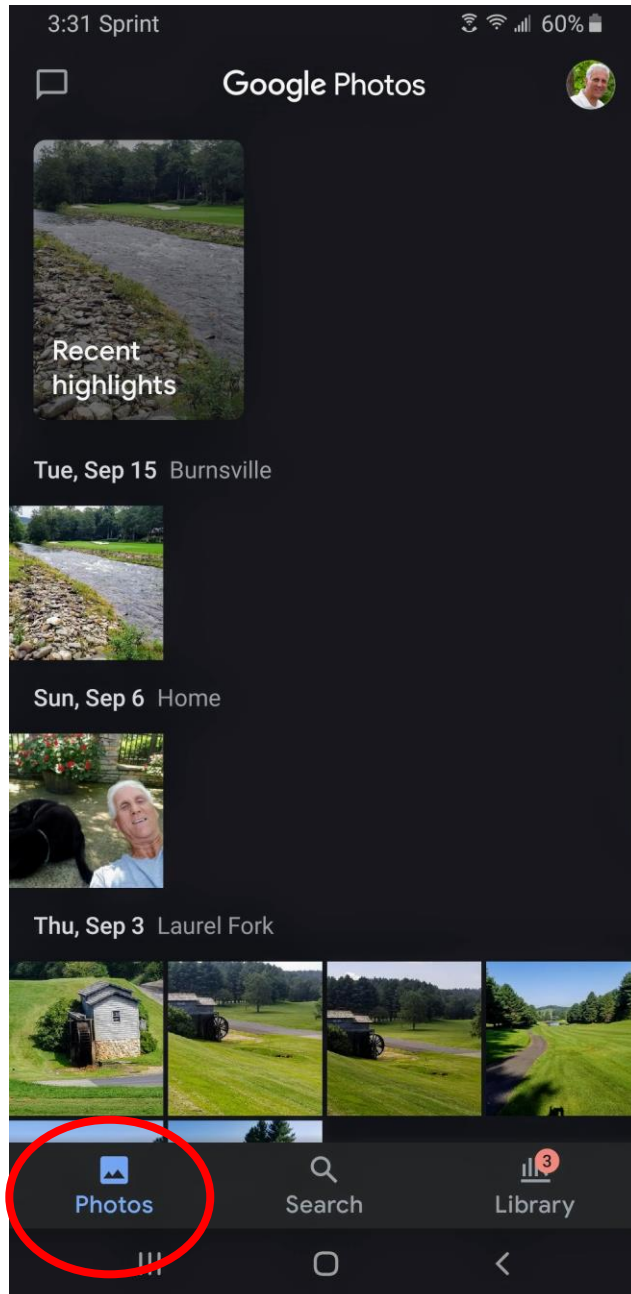


# Deleting Photos



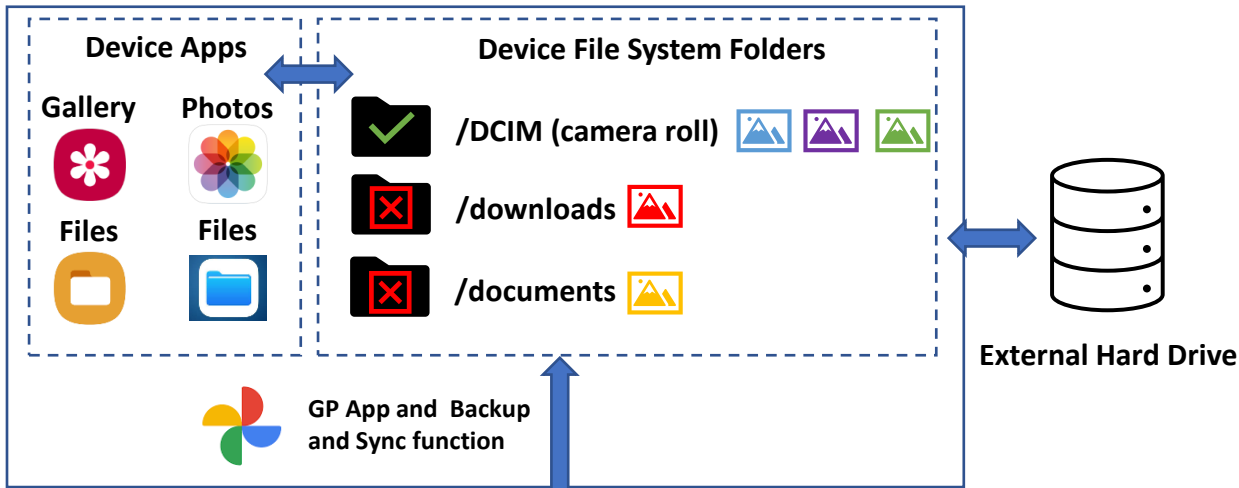
- A photo deleted or removed from a GP Album does not get deleted from the active Photos library. (e.g. removing the green photo from Album B – it stays in the active photos library and the People and Pets album)
-  A photo deleted from the active Photos library gets moved into Trash for 60 days and can be undone. Also, if that photo was being synchronized via the GP App function called Backup and Sync, then that photo is also deleted from the device folder. (e.g. if the GP app is used to delete the blue photo, it gets moved from the active library to trash, removed from Album A, and deleted from the device /DCIM folder)
-  A native device app such as Gallery or Files can delete photos from device folders and the GP cloud copy of that photo is unaffected if it was previous synchronized to the GP cloud. (e.g. if Gallery is used to delete the green photo from the device camera roll folder nothing happens to the green photo in the GP cloud).
- The GP App function “free up space” can be used anytime to delete photos in device folders that have been synchronized to the GP cloud. (e.g. the 3 photos [green, blue, purple] would be deleted from the device /DCIM folder but would remain in the GP cloud active library and any albums they appear in).
- There is no easy way to delete a photo in the GP cloud and have the synchronized photo in a device folder not be deleted. (e.g. you cannot use the GP app to delete the purple photo from GP cloud and keep it in the device).

## Photos Tab



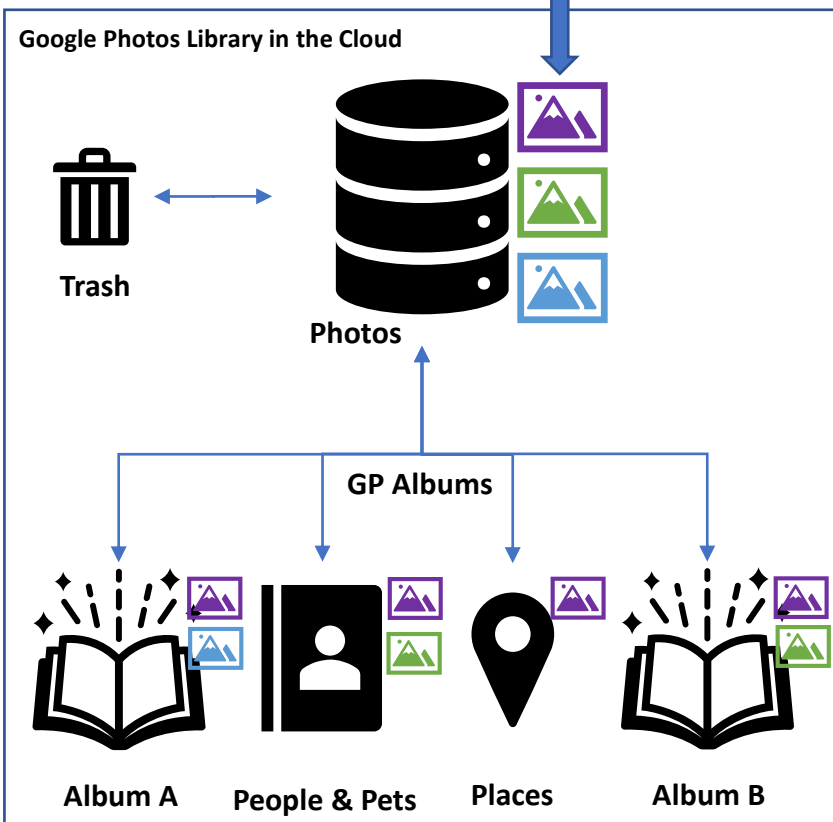
- Contains all non-archived photos in your Library
- You can't get rid of it.
- It is the main/default view in GP and it is always sorted by date taken (you can't change this).
  - Date taken may be different from the date uploaded and date created.
- It contains *\*all\** things that are images, not just what you might consider a photo or what you might want it to contain or not contain.
  - Yes - screenshots, memes, photos of receipts, etc.
- Only way to move a photo out of it is to Archive the photo or Delete the photo.
- All GP AI based operations (facial recognition, creations, etc.) occur on these photos (and conversely not on Archived photos).
- Search finds photos in either Photos or Archive,
  - If you want a view of Photos based on date added to GP:
    - <https://photos.google.com/search/tra>
    - or click in the Search box and look for Recently Added
  - You can pinch/zoom this view to see more or fewer photos. The date range will change as GP groups photos.
  - You can scroll the right side, up or down, or grab the slider to move backward or forward in date/time.

## Google User A's Device (e.g. Phone)



## Backing Up Photos / Downloading All Photos












- Yes, GP backs up all your photos to the GP cloud. DO NOT rely on that being the one and only place the photos exist.
- If you use the GP function "Free up Space" and you have performed no other type of backup, then the photos only exist in the GP cloud.
- It is best to copy the photos to some other place:
  - An external hard drive.
  - Another folder on the device that is excluded from GP's backup and sync process.
  - Your desktop (again in a place not visible to GP).



### Should you need to download all (or many) photos from the GP Cloud:

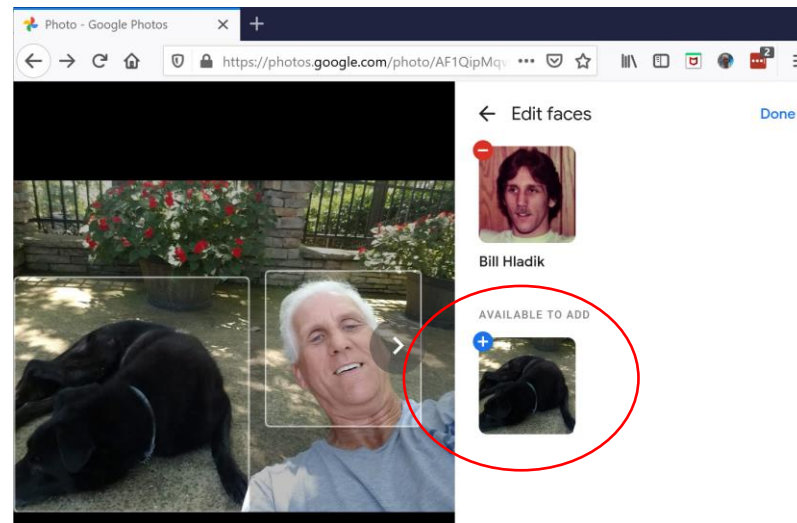
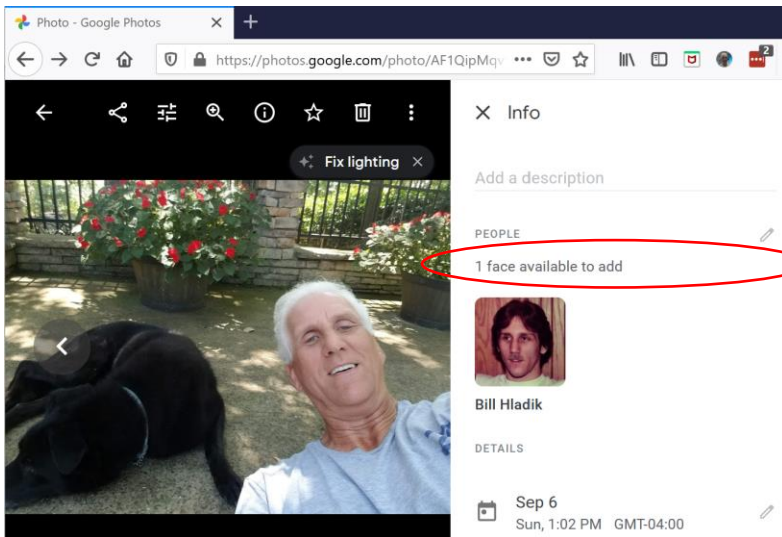
- You can periodically use <http://takeout.google.com> to create downloadable zip files of all photos in your GP cloud.
  - See this post for help: <https://legault.me/post/correctly-migrate-away-from-google-photos-to-icloud>
- You can use the GP app function called "Download" to download photos in batches of up to 500 photos at a time.
- You can create an album and place in it as many photos as GP allows (~20,000) and then you can use the 3 dot menu on the album to "Download All"
  - See this post for help: [https://www.reddit.com/r/googlephotos/comments/jyyg53/psa\\_i\\_found\\_a\\_n\\_alternative\\_to\\_google\\_takeout\\_for/](https://www.reddit.com/r/googlephotos/comments/jyyg53/psa_i_found_a_n_alternative_to_google_takeout_for/)

# Google Takeout and json files

 Dad - High School Page.jpg  
 Dad - High School Page.jpg.json  
 Dad - High School.jpg  
 Dad - High School.jpg.json  
 Dad - High School-edited.jpg  
 metadata.json  
 Mom - High School Page.jpg  
 Mom - High School Page.jpg.json  
 Mom - High School.jpg  
 Mom - High School.jpg.json  
 Mom - High School-edited.jpg

- You can periodically use <http://takeout.google.com> to create downloadable zip files of all photos in your GP cloud.
  - See this post for help: <https://legault.me/post/correctly-migrate-away-from-google-photos-to-icloud>
- There is generally a 1:1 pair of a json file to a photo file, but at times a single json file may contain data for several photo files if they have been edited.
- The photo files contain all the original exif data that was in them when uploaded to GP.
- The json files contain additional exif data created for the photo after you messed with it in GP. Things like location changes, name changes, descriptions, people tagging, edits, date changes, etc.
- If you don't care about the new exif data you can simply copy all the photo files to somewhere else. Something like:
  - `copy \zipfolder\*.jpg \newfolder /s`
- If you do care about the new exif data then you will have to merge the json content back into the photo files with a tool like exiftool. Scripting may be required to handle the vast number of photo/json file pairs especially because GP does not stick to a precise naming structure to match the pairs up.
- In terms of the takeout extract, all photos will be in the folders named yyyy-mm-dd where that date is the date taken and corresponds to the sorting you see in the GP app Photos tab.
- Any photo added to any album...
  - You will see a folder named like the album with a copy of the photo/json file pair in that album folder. These are dups of the same stuff in the yyyy-mm-dd folders times how ever many albums you placed that photo in.
- The presence or absence of a photo found in the yyyy-mm-dd folders as compared to the album name folders is about the only way to know which photos have not been added to any album.
- There are many home grown scripting solutions out there to process all the json files.
- exiftool itself can recursively process the directory structure and merge the json content into the photo files but you need to almost be a phd to get the exiftool options right to catch all variations of what GP exported.
  - Here's an example:
  - `exiftool -r -d %s -tagsfromfile "%d/%F.json" "-GPSAltitude<GeoDataAltitude" "-GPSLatitude<GeoDataLatitude" "-GPSLatitudeRef<GeoDataLatitude" "-GPSLongitude<GeoDataLongitude" "-GPSLongitudeRef<GeoDataLongitude" "-Keywords<Tags" "-Subject<Tags" "-Caption-Abstract<PeopleName" "-ImageDescription<Description" "-DateTimeOriginal<PhotoTakenTimeTimestamp" -ext "*" -overwrite_original -progress --ext json c:\folder_from_takeout`

# Facial Recognition – People and Pets Albums



- This is one of the most powerful features of GP assuming you have not disabled it in Settings via the "Group similar faces" option.
- Any photo in GP's active library (Photos tab) with a recognizable face of a person or pet will appear in a People and Pets album.
- There you can hide certain people or pets you don't care about.
- For the ones you do care about you can assign a name.
- All photos (past and future) having what GP recognizes as that same face will be grouped together in that special GP album.
- Viewing the album will show a list of all photos having that face.
- If you have a photo that you know contains a face of person X, and GP has failed to recognize it:
  - You cannot force the recognition.
  - It might be the photo is too grainy or the resolution is too low.
  - The angle of the face might be off or obscured in some way. Just because you can recognize grandma doesn't mean GP's AI can.
- If GP mistakenly groups Tom and Sarah together as the same person, you can remove the wrong one and leave that face as unrecognized.
- Say you have 10 photos with dog Casper. GP has grouped them, and you have assigned the album name "Casper" under the People and Pets area:
  - All photos of Casper should auto assign and group into the Casper album.
  - Occasionally a photo of Casper may not automatically group into that album.
  - View the photo, look at the photo information, you might see "n faces available to add". Click that and tell GP this face is Casper.
  - If there are multiple photos like this, there is no way to find them all by search. You must manually view the Casper album and understand that several photos you know you have of Casper are not present in the Casper album.

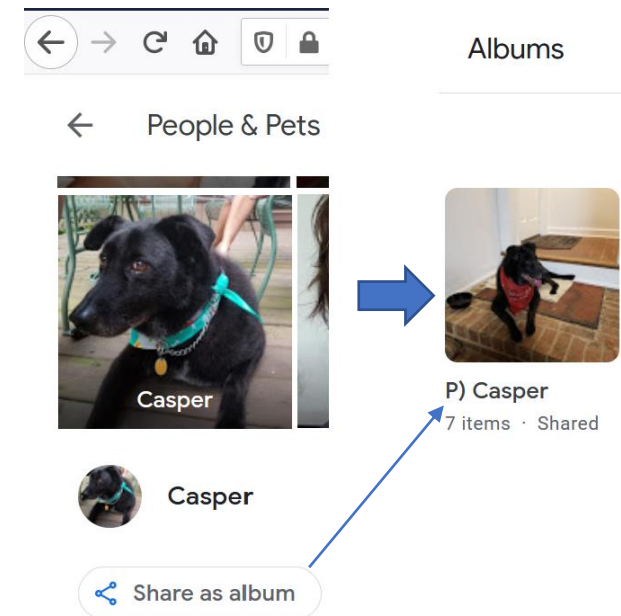
The photo contains me and Casper the dog. My face is recognized and automatically tagged under my People & Pets album called "Bill Hladik". Casper's face is recognized as a face but not yet tagged under any People & Pets album. I can click it and assign it to my "Casper" album.



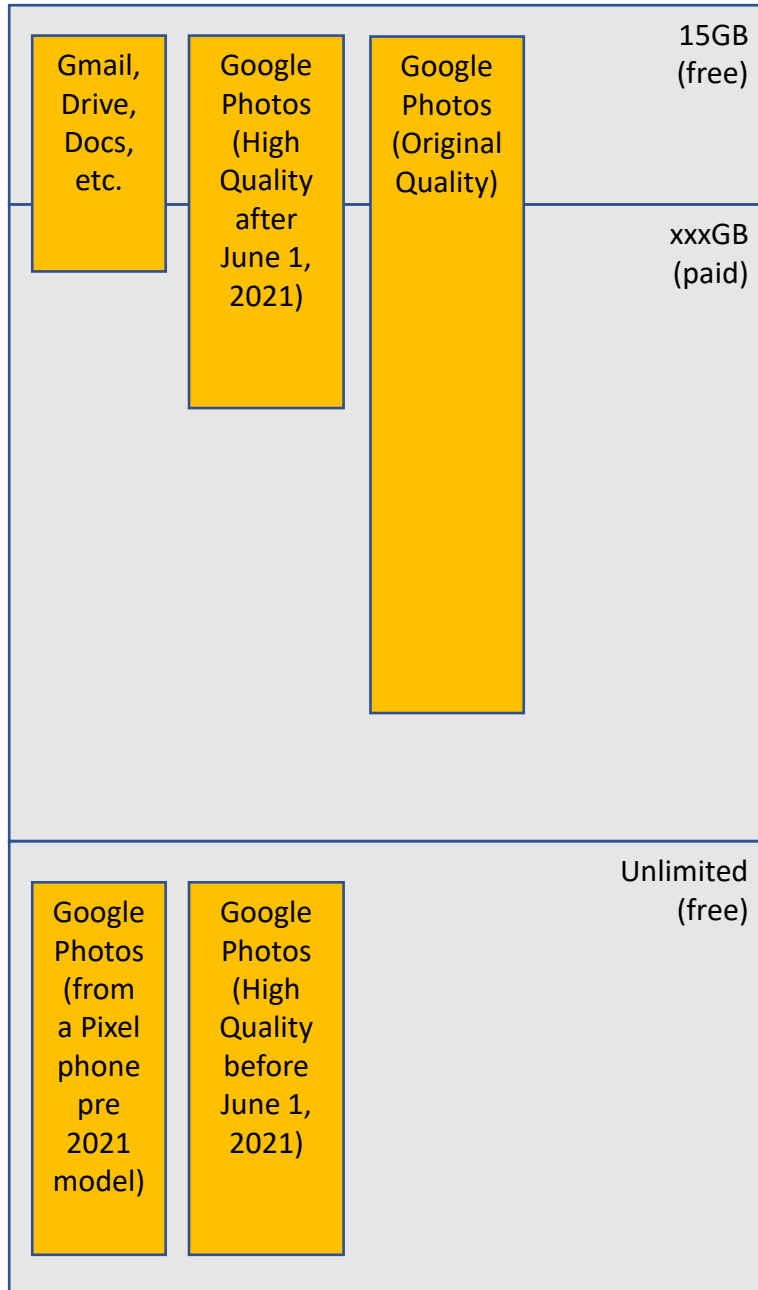
## Sharing an Album of a Specific Person or Pet

- Once a People and Pets album is established by GP's AI, such as the example I used with the dog Casper, you can think about sharing it with friends.
- You can't directly share your personal People and Pets album, but you can use the "Share as Album" link in the GP App and share a new album you create with friends.
- In the two screenshots you can see the "Share as Album" button was used to create this new album which we named "P) Casper" and you can see it is automatically adding photos from your personal People and Pets album called "Casper".
- GP calls these types of albums "Live Albums"

- All new photos of Casper will appear in this album without you taking any further action, and the people you shared this album with get to see those new photos.
- You can also manually add any other photos you want to this album:
  - A photo of Casper where GP's AI did not detect Casper's face
  - A photo of Casper's best friend dog next door
  - Casper's dog house you took 3 months to make and are so proud of
- You can of course use GP's Search function and search for:
  - "Casper" – to see your personal People and Pets album
  - "P) Casper" – to see this new album
  - "dog" to find all pictures of dogs in your Photos tab



## Google One Storage



## Google Photos Storage

1. First 15GB of storage is free. Think of your entire Google One account being divided into 3 sections. The first 15GB is free and many things in Google consume this storage.
2. Additional (optional) paid for storage (about \$2/mo per 100GB). Those same Google things will start to consume your paid for storage after your free 15GB is consumed. This includes your Google Photos in High Quality (after June 1, 2021) and your Google Photos in Original Quality no matter when they were backed up. If you choose not to buy this and you exceed 15GB of storage, Google's apps will start to decline in functionality. Ditto if you pay for a while and then stop paying. If you ignore the situation for 24 months Google may delete all of your data.
3. There are certain types of photos you can store in Google One for free. They do not count toward your free 15GB allocation, nor toward any additional storage you are paying for. Google Pixel phones with a released model prior to June 1, 2021 get free storage.

## Interesting Links

- The Google Photos web interface:
  - <https://photos.google.com>
- View all photos based on date added to GP:
  - <https://photos.google.com/search/tra>
- View all Unsaved creations that the GP AI created:
  - <https://photos.google.com/unsaved>
- View items in the GP Trash:
  - <https://photos.google.com/trash>
- View the People and Pets albums:
  - <https://photos.google.com/people>
- View the Archive:
  - <https://photos.google.com/archive>
- View the Sharing area:
  - <https://photos.google.com/sharing>
- View your personal storage estimate:
  - <https://photos.google.com/storage>
- View your personal Google Dashboard where you can check on Google Photos storage:
  - <https://myaccount.google.com/dashboard>
- View your Google One storage usage, including your free 15GB:
  - <https://one.google.com/storage>
- Use Google Takeout to download all GP Photos, then use Exiftool to reincorporate .json exif data back into the photos:
  - <https://legault.me/post/correctly-migrate-away-from-google-photos-to-icloud>
- A tool/process to save all headshot photos from your People & Pets album page:
  - [https://wjhladik.github.io/GP People - Save All.zip](https://wjhladik.github.io/GP%20People%20-%20Save%20All.zip)