

Explainer: Files

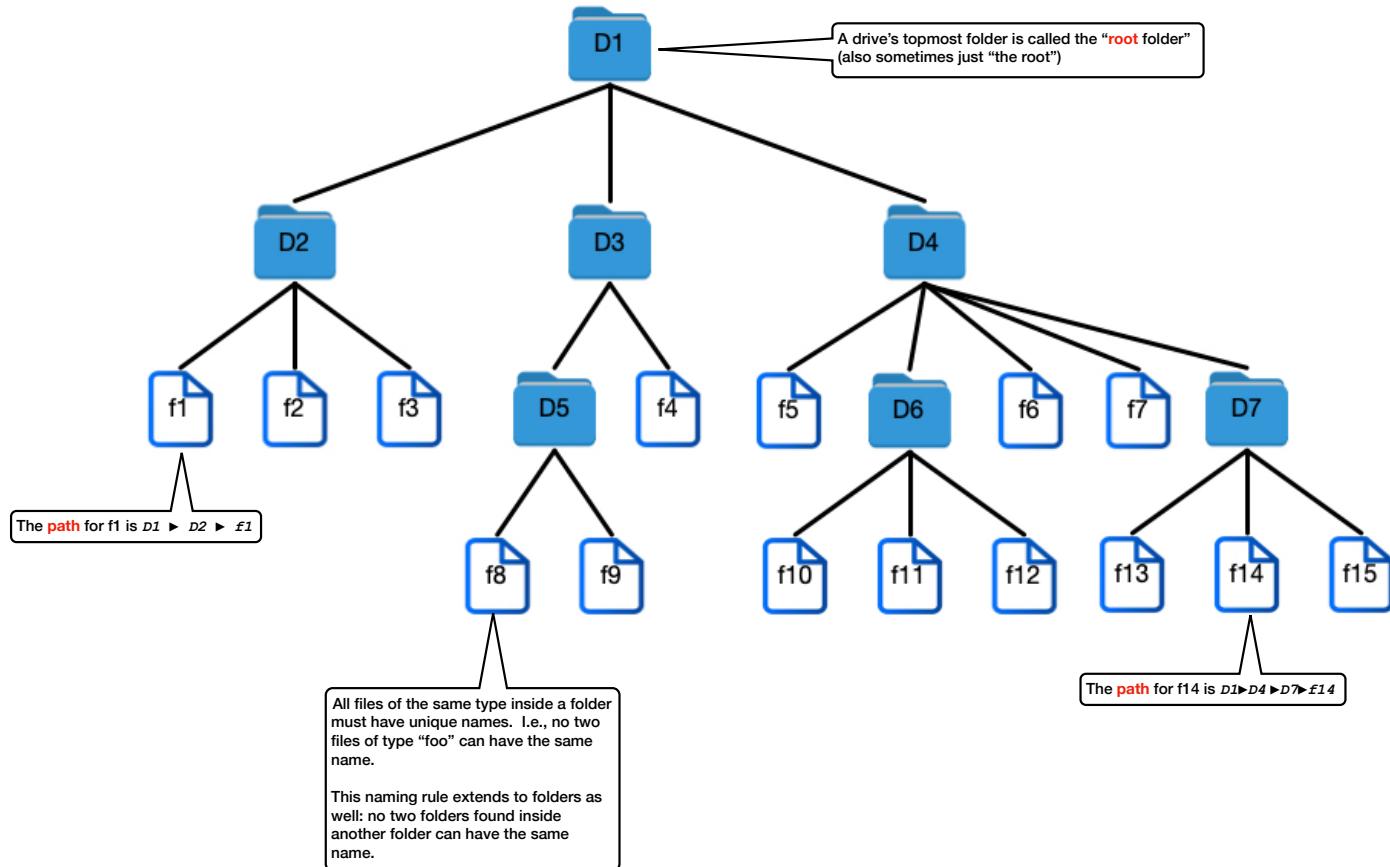
Duke OLLI Digital Explorers SIG

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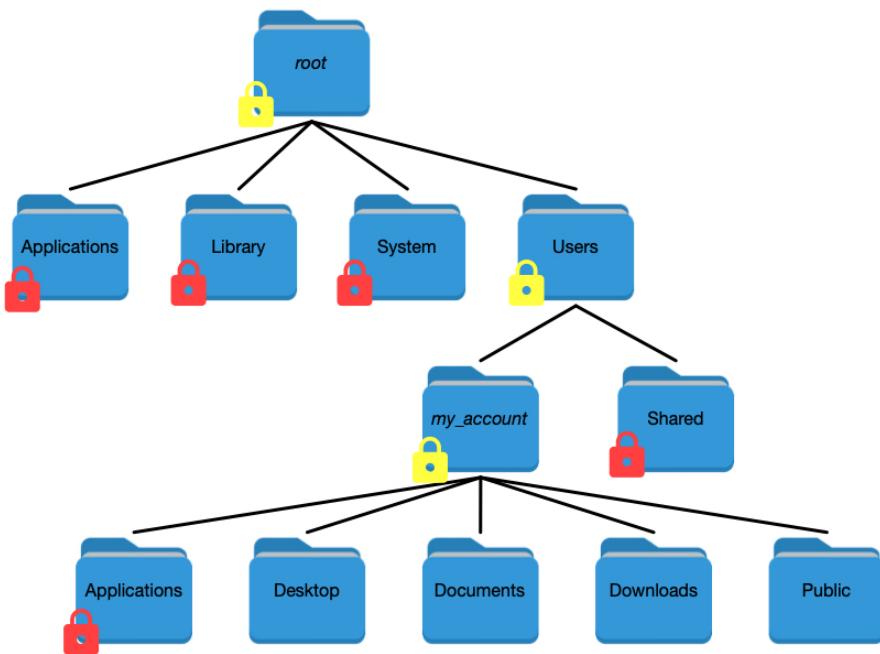
Key Terms

file	<ul style="list-style-type: none">A container for data when it is stored on a drive connected to your device
folder	<ul style="list-style-type: none">A container for files and other folders<ul style="list-style-type: none">It may be helpful to think of a folder as a <i>location</i> on a driveThe word “directory” is a commonly used synonym for “folder”
drive	<ul style="list-style-type: none">A non-volatile data storage device. Non-volatile refers to storage devices that maintain stored data when turned off.<ul style="list-style-type: none">All digital devices have a storage deviceAdditional drives can be connected to a digital deviceCloud stores act as drives
file system	<ul style="list-style-type: none">A part of the operating system that governs access to files, folders, and how they are organizedA file system provides a data storage service to allow apps to share a drive; without a file systems, apps could access drives in incompatible ways that could result in problems (e.g., loss or corruption of data already stored on a drive)The file systems on personal digital devices are hierarchical in nature.
file manager	<ul style="list-style-type: none">A kind of app used to view and manage files and folders on drivesBelow are the icons and names of the file manager apps for the digital devices our SIG members have <div style="display: flex; justify-content: space-around;"><div style="text-align: center;"><p>On macOS Finder</p></div><div style="text-align: center;"><p>On iOS Files</p></div><div style="text-align: center;"><p>On Windows File Explorer</p></div></div>

Hierarchical File System Overview



Special macOS Folders



There are a number of special folders on your drive. The diagram on the right shows these special folders and where they reside in the file system hierarchy. The folders with red lock icons are reserved for the operating system. You can look inside them if you're curious but you don't want to change anything inside them yourself; in fact, the operating system should stop you from inadvertently modifying anything in these folders. You can add files to the folders with yellow lock icons, but doing so is not a good idea and I strongly encourage you to maintain a "look but don't touch" attitude with these folders. The Desktop, Documents, and Downloads folders are for your use; you can do whatever you want in those folders.

- **root**
- Applications: software installed for use by all user accounts
- Library: contain app-related data, preferences, and caches
- System: contains the operating system
- Users: contain folders for user accounts
- Shared: contains folders and files user accounts have shared with other defined users
- *my_account*: contains folders and files for a user account; the name of these folder will match the name of the user account
- Shared: files stored in this location can be accessed by other user accounts
- Applications: software installed exclusively for your use; other user accounts do not have access to software installed in this folder
- Desktop: contains files/folder you place on your desktop
- Documents: this is the primary location you should use to store your files; you can organize files and folders inside the Documents folder however you prefer
- Downloads: files you download from the Internet are placed in this folder;
- Public: everything placed inside this folder will be visible to the other user accounts on your computer

The Recents folder

In the left hand side panel of file manager windows and apps' open and save dialog windows, you will find a folder called "Recents". This is a special kind of folder called a "smart folder" (also sometimes referred to as a "virtual folder"). Smart folders automatically find and show you files based on some pre-defined set of criteria. Note that the files you see in a smart folder don't actually reside in the smart folder.

The role of the Recents folder on Mac is to save you time by giving you quick access to the files you've recently used. No need to remember where you saved them.

To the best of my current knowledge, the Recents folder will show the N most recently used files, where N is some number that Apple doesn't appear to publicly document. I have seen some other geeks state they believe the value of N is somewhere in the range of 100-300 items.

Metadata

Metadata is data that defines and describes the characteristics of other data. It often helps to describe, explain, locate, or otherwise make data easier to retrieve, use, or manage.

- File systems maintains key attributes for files and folders:

- name

- type

only applied to files

the type of a file is normally defined by the app that created the file

“kind” and “format” when used in reference to a file are synonymous with “type”

- path

- date a file or folder was...

- created

- last modified

- last viewed (i.e., opened, or accessed)

- size

only applies to files

File/Folder naming rules

- Can be up to 255 characters long on macOS and iOS

Can be up to 260 characters long on Windows

Some apps that allow you to save files might further limit the maximum length of file names

- Cannot contain a forward slash (“/“)
- The following characters should be avoided

!	?	.	,
;	:	\	
“	‘	*	
[]	{ }	()	< >

- Case sensitivity (i.e., is “MyFile” the same as “myfile”)

- Best practice is to consider “MyFile” the same as “myfile”

Whether or not a device treats “MyFile” and “myfile” as the same depends on the file system and how a drive is configured

Primary file operations

Via File Manager

- Copy
- Move
- Rename
- Delete
- Open

Via Apps

- Open / Open Recent
- Close
- Save / Save As
- Rename
- Delete
- Move
- Revert
- Export
- Print