File Management in Microsoft Windows (Concepts)

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This document explains the basics of file management in Windows 10.   Much of the information is also relevant for other versions of Windows.

Assumptions: This document assumes you are using **Windows 10** on a **desktop, laptop, or notebook PC** with a **mouse or touchpad**. There are other ways to interface with Windows computers, such as tablet mode and using a touch screen. In this document we focus on using Windows with mouse or touchpad.

Computer Basics - Hardware and Software

Before beginning, please review the information in Computer Basics - Hardware and Software

Introduction to Windows File Management

- **Where is my stuff?** In today's world, it is essential that you are able to store, organize, and retrieve digital data.   Our computers and electronic devices are, in many respects, extensions of our own brains. It is therefore critical that we are able to seamlessly access the data stored on those devices.   Our data and programs are typically stored in several ways:
    a. **on the device itself**, For example, if you install an app on your phone, it is downloaded and exists now on your phone.   This sometimes called "local" storage.   Another example of local storage, is when you save a spreadsheet file on your computer's hard drive.   Another is example might be your phone's photos. When you take the photo, it is stored on your phone.   By default, most phones backup these local files to the Internet – for example, if you have an iPhone, your photos are probably being backup on the Internet at icloud.com.   **NOTE: this document looks at local file storage –i.e., storing our files on our computer.   We examine cloud storage services–such as Google Drive and OneDrive–in other modules**
    b. **on the Internet (i.e., in the cloud)** Example of   "cloud storage" include Google Drive, Microsoft Onedrive, and DropBox.   OneDrive, for example, is storage provided by Microsoft on the Internet. Instead of storing files directly on your computer, the files are stored in the "cloud" instead (the "cloud" is another term for the Internet). Files stored in OneDrive are then accessible by you from all other computers you might use and devices.
    c. **private computer networks**– for example a corporate computer network.
- **What is file management?** For our purposes, **file management** is the storing, organizing, and retrieving of digital data stored on our devices. This includes such tasks as creating, saving, opening, finding, deleting, renaming, moving, and copying files and folders.
- **Why Windows?** In the business world, the standard computing device is the desktop (or laptop) computer. And most businesses run Microsoft Windows on these computers. So, knowing how to manage our digital data stored on a Microsoft Windows computer is an important skill.
- **What program do we use for file management?** In Windows 10, the program used for file management is called **File Explorer**.

Search the web and Windows

File Explorer on Windows 10
task bar

- **What is used for file management in previous versions of Windows?** File Explorer has had other names including **Windows Explorer** and **My Computer**.   In previous versions of Windows, you can find the Windows Explorer program on the Start Menu. In these earlier versions of WIndows, from the Start Menu, when you click Computer, Music, Documents, Pictures, or [your name], the Windows program will open Windows Explorer.   It is also found in the Start Menu under All Programs->Accessories->Windows Explorer. In Windows 7, Windows Explorer is also a folder icon pinned on the taskbar.   **Don't confuse Internet Explorer with Windows Explorer.** In previous version of Windows, it was easy to confuse the names of Windows Explorer and Internet Explorer (IE). Internet Explorer (IE) is a web browser -- a program used for surfing web. In Windows 10, the default web browser is now named **Edge** and Windows Explorer is now called **File Explorer.**
- **Where else will we see the file management program**?   The same programming code used by File Explorer is also often "**called**" by other programs. For example, when you save or open a document using Microsoft Word, the Word app will "call" the operating system (Microsoft Windows) and the operating system will allow you to enter a file name and save your file.   When it is called by these programs, File Explorer it is known as the **Common File Dialog**.   This allows programmers of apps to use the existing programming for file management built into Windows. The operating system (Windows) is in charge of file management on the PC, so programmers who wrote the Word program, for example, did not have to write the program to save a file. Instead, saving a file is handled by the operating system (Windows).   Word "calls" the Common File Dialog program which then handles saving the file. This provides a consistent interface across all programs. So, when you save or open a file in Word, Excel or other application programs in Windows, you will see the same window you would see in File Explorer.

Working in File Explorer

Important terms/concepts:

Files & Folders: Make sure you know the difference between a "file" and "folder." Users create **folders** to organize and group their documents. **Files**, on the other hand, are the actual programs or documents.

About Memory and Storage Most computers have two types of storage—RAM (also called "memory") and other more permanent storage, such as hard drives, CDs, DVDs, flash drives, etc.   A computer's RAM (memory) differs from these other types of storage. RAM is where data is stored as it is processed by the computer.   When you open a document, you are taking it from another type of storage (for example, your CD) and loading it into RAM so the document can be edited or viewed.   Data stored in RAM is stored as electricity. When the PC's power goes off , RAM is erased. When you "save" a document, you are copying the document from the computer's memory and storing it to another storage device (such as a CD or hard disk drive).

Drives: Most computers contain one or more data storage devices called "drives."   A common storage drive on a computer is a "**hard disk drive**."   They are called hard disk drives because they have actual hard metal plates (disks) on which the data is stored.   Some drives use a different type of technology to store data and are called "**solid state drives**" (SSD).   [For more information, do a Google search to learn the difference between SSD and other drives.]

The drives in your computer are named using letters of the alphabet. On most computers, drive C is the primary drive used for storage. In Windows, drive letters are always followed by a colon. So drive C would be written as C:

Many businesses also have one or more **network drives** for storing data on a network.   Network drives allow files to be stored in central locations on the network so the data on the drives can be shared with multiple users on computers across the network
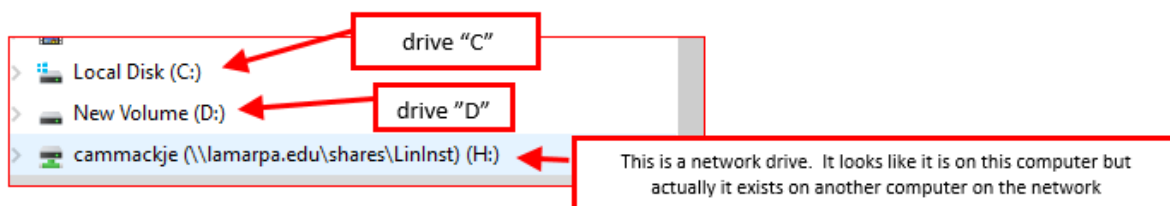
Libraries. Libraries are a fairly new feature in Windows.   Libraries are "user-defined collections of folders that are logical representations of user content."   Whaaaa?   This means is that user can build collections of various files and folders from various locations on the computer, and the items will appear grouped together in one place on the computer. So, for example a user can have pictures stored on many different folders and drives on his/her computer but the computer can display them all together in the Pictures library- even though they are actually stored in a lot of different places on the computer.

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File Extensions.

- o All files have file names. The last part of the filename is known as the file's "extension." The extension is the part of the file name following the last period. Examples: *My Letter to mom.**docx**, seniorpic1.**jpg**,   assignment 3.**pdf***

- o Extensions don't do anything by themselves. However, Windows uses the extension to ***associate*** programs with specific data files. In this way, Windows knows which program to use to work with these files (that is, to open, view, and edit these files). For example, docx is usually ***associated*** with Microsoft Word. This means Windows will use Word to open and edit files which have the docx extension. Usually, these associations are set up automatically when the program is installed.

   Sometimes, multiple programs can be used to open particular files.   For example, picture files usually have an extension such as png, jpg, or gif.   There are many programs which can open these type of files. In Windows, **the "default" program is whichever program is currently associated with the file's extension**.   So, if you double click on the file name in File Explorer, the program which is currently associated with that extension will run and will open the file.   So, for example, if the Microsoft Paint program is associated with the jpg extension in Windows, if you double click on a file with a jpg extension, Windows will open the file run using Microsoft Paint program. Microsoft Paint.

   Sometimes programs sort of "battle it out" in order to get to be associated with a particular extension. They all want to be the default program to open that type of file. For example, you might have two programs on your computer, such as Microsoft Edge and Google Chrome, which are designed for browsing websites. Each of these programs wants to be associated with the HTML and HTM file extensions because web pages have this extension. The program associated with these extensions will be used by Windows by default when opening these files. Sometimes, when you run these programs, you might get a message like this "this program is not currently the default application for this file type, would you like to make it your default application? (y/n)"   If you answer yes, the program will instruct Windows to associate those file extensions with that particular program.

Organizing Your Stuff

Where is my stuff ***really*** on the hard drive? When a user logs into Windows on a computer for the first time, Windows creates a folder on the hard drive for that user. It contains all of the data and folders for that user on that computer. When you click on Documents, Pictures, your Desktop, etc., you are actually viewing items from this folder on your hard drive. Here are the locations for your personal folders in the most recent versions of Windows. Drive C is your hard drive.

- ● Windows XP: C:\documents and settings*user name*
- ● Windows Vista: C:\Users*user name* (also has C:\ProgramData for program specific data)
- ● Windows 7, 8, and 10: C:\Users*user name*

This way, each user has his/her own Documents folder, his/her own Desktop, his/her own Downloads folder, etc. If security is set properly on your computer, other users will not be able to see your folders.

Organizing Your Documents on Your Disk

You should consider the best way to organize your documents. For example, do you put all your school related stuff together in one folder or do you create separate folders for each class? What collections of

documents do you use the most?   What are advantages of a deep folder structure (where you have a lot of folders and subfolders) vs. shallow folder structures (where you have a fewer subfolder but more files in each folder)?

About Cloud Storage: As you learn more about cloud based storage, such as OneDrive, Dropbox, and Google Drive, consider how you will organize you work to incorporate these services.   It is possible to synchronize your OneDrive and Google Drive with folders on your desktop computer. We will discuss this in more detail later.