**Level 1: Windows File Systems**

Refer to the following document when answering the questions for Level 1.

<https://fossbytes.com/fat32-vs-ntfs-vs-exfat-difference-three-file-systems/>

1. **What is the definition of a file system?**A file system is basically a set of rules used to decide how data is stored and fetched in a storage device.
2. **What are the three file systems used on Windows computers?**  
    FAT32, NTFS, and exFAT are the three file systems we use for Windows
3. **What are the properties of the FAT file system?**
   1. **The FAT file system was the original Windows 95 file system. When was it introduced?**

The FAT file system was introduced in 1977

* 1. **How is the FAT16 file system different from the FAT32 file system?**

FAT32 surmounted the limited volume size offered by the FAT16 file system.

* 1. **What is the file size limit of the FAT32 file system?**

The file size limit for the FAT 32 file system is 4 GB

* 1. **What is the disk size limit of the FAT32 file system?**

The maximum disk size limit is 16 TB

* 1. **What other devices currently use the FAT file system?**

Windows, Mac, Linux, gaming consoles, practically any device with a USB port.

1. **What are the properties of the NTFS file system?**
   1. **The NTFS file system is what is used on current Windows computers. When was it introduced?**

 NTFS was introduced in 1993 with their Windows NT 3.1 operating system

* 1. **How is the NTFS file system different from the FAT file system?**

The NTFS supports backwards compatibility.

* 1. **What is the file size limit of the NTFS file system?**

the capacity of NTFS file system is 256 TB

* 1. **What is the disk size limit of the NTFS file system?**

1. the NTFS disk size limit is 256 TB
   1. **What are some notable features of the NTFS file system?**

If you have a device that supports the NTFS file system, you don’t have to worry about storage because it is more than enough

* 1. **What are some limitations regarding how other devices support the NTFS file system?**It isn’t compatible with every device

1. **Provide a summary of the exFAT file system.**

Launched in 2006, exFAT file system has the same 16 EB file size limit as NTFS, but it is way lighter as it doesn’t contain many of the extra features. Most of the modern digital cameras use exFAT. High capacity SDXC memory cards are now pre-formatted with the exFAT file system, as it is lighter in contrast to NTFS and supports file of sizes, more than 4GB. exFAT is compatible with Windows XP and later versions, Mac OSX 10.6.5 and above, Linux (using FUSE), Android. A good thing about the exFAT file system is that it behaves as a fusion between FAT32 and NTFS by providing practically unlimited file size and partition size. A negative factor about the exFAT file system is that Microsoft restricts its usage by license obligations.

**Level 2: Windows NTFS Permissions**

Refer to the following document when answering the questions for Level 2.

<http://www.ntfs.com/ntfs-permissions.htm>

1. **Read the information provided on the “Setting Permissions” page.**
   1. **Summarize how to view and set file and folder permissions.**

How to set file and folder permission

In Windows Explorer, right-click a file, folder or volume and choose **Properties** from the context menu. The **Properties** dialog box appears.

Click the **Security** tab.

Under **Group or user names**, select or add a group or user.

At the bottom, allow or deny one of the available permissions.

How to view

The file/folder has to be shared with you and you need access to view or edit.

1. **Read the information provided on the “Advanced Permissions” page.**
   1. **List the advanced permissions that affect files.**

* Transverse file/execute file: Allows or denies moving through a restricted folder to reach files and folders beneath the restricted folder in the folder hierarchy.
* List folder/read data: Allows or denies viewing file names and subfolder names within the folder.
* Read attributes: Allows or denies viewing the attributes of a file or folder.

Other permissions

* Read extended attributes
* Create files/write data
* Append data
* Write attributes
* Write extended attributes
* Delete subfolders and files
* Read permissions
* Change permissions
* Take ownership
  1. **List the advanced permissions that affect folders.**
* Transverse folder
* List folder
* Read attributes
* Read extended attributes
* Create folders
* Write attributes
* Write extended attributes
* Delete
* Read/change permissions
* Take ownership

1. **Read the information provided on the “Basic Permissions” page.**
   1. **The basic permissions are listed at the top of the columns in the table. List the 6 basic permissions.**

* Basic Full Control
* Basic modify
* Basic read and execute
* Basic list folder contents
* Basic read
* Basic write
  1. **What basic permissions allow a user to write data to a file?**
* Basic Full Control
* Basic modify
* Basic write
  1. **What basic permissions allow a user to delete a folder?** basic full control and basic modify

1. **Why do you think there are separate permissions for reading and writing a file? Provide an example where you might want somebody to read a file but not be able to change it.**separate permissions for reading and writing are used when you are sharing a file with someone. If you are sharing a rough copy assignment for English class and you need someone to edit it, you will probably give them access to write. If you are sharing an important document with someone, you would probably give them access to view only because you do not want changes made to the document
2. **Why do you think there are separate permissions for listing folders and reading files? Provide an example where you might want somebody to be able to list a folder but not be able to read a file in the folder.**

Separate permissions differentiate who can edit and move around your files and who can read your files. If you wanted someone else to organize your files, you could give them access to move around your files but have no reading access. If you were doing an assignment with a partner and there were multiple files, you would put the files in the folder and share the folder with them. That way, they can view and edit the folder contents depending on the access they were given.

**Level 3: Windows Share Permissions**

**Refer to the following document when answering the questions for Level 3.**

[**https://blog.netwrix.com/2018/05/03/differences-between-share-and-ntfs-permissions/**](https://blog.netwrix.com/2018/05/03/differences-between-share-and-ntfs-permissions/)

1. **What are share permissions?**
   1. **Who do share permissions affect?**

they affect network users that the folders are shared with. The people that can view them can be changed

* 1. **Who do share permissions not affect?**

They do not affect local users

* 1. **Summarize the 3 types of share permissions.**full control
* Can control every read and change permission
* Change permissions for NTFS files and folders

Change

* Can read, edit or delete files and folders

Read

* Can only read files and folders
* Can’t make edits or delete files and folders

1. **Summarize the main difference between NTFS and Share Permissions.**

* NTFS permissions only apply to those who are logged on to the server locally while share permissions are not
* Share permissions can share FAT and FAT32 folders while NTFS permissions can be used to share them
* NTFS permissions are more advanced/harder to manage and use while share permissions are more basic/easier to manage and apply
* NTFS permissions are listed under the security tab while sharing permissions are under advanced sharing properties in permissions (settings)

1. **Summarize how to view and change share permissions.**

* Right click shared folders
* Click properties
* Open sharing tab
* Click advanced sharing
* Click permissions
* Click a group or user on the list
* Allow or deny access for settings

**Level 4: Your Files and Folders**

1. **Organized your files and folders on your network drive to match your GitHub repository.**
   1. **Create a folder on your student drive for Computer Science Work**
   2. **Create sub-folders (e.g. Topic A, etc.) to match the folders on your GitHub repository**
   3. **Move your answer files and other work you have done for this course into the proper sub-folders.**
   4. **Show your organized folders/files to Mr. Nestor**