Module A.5

**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 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

· exFAT

3. What are the properties of the FAT file system?

a. The FAT file system was the original Windows 95 file system. When was it introduced?

1997 was when the first FAT file system was introduced.

b. How is the FAT16 file system different from the FAT32 file system?

FAT32 offers a higher volume size, 32 bits.

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

The system can’t install heavy apps so you do not need to worry about the fil and disk size limits.

d. What other devices currently use the FAT file system?

FAT32, NTFS, and exFAT are the three file systems we commonly use for Windows and storage media running on Android and various other devices.

4. What are the properties of the NTFS file system?

a. The NTFS file system is what is used on current Windows computers. When was it introduced?

It was introduced in 1993

b. How is the NTFS file system different from the FAT file system?

c. What is the file size limit of the NTFS file system?

16EB-1KB

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

16EB

e. What are some notable features of the NTFS file system?

Reparse points, sparse file support, disk usage quotas, distributed link tracking, and file-level encryption.

f. What are some limitations regarding how other devices support the NTFS file system?

Its space.

5. Provide a summary of the exFAT file system.

· exFAT is another Microsoft file system.

· Modern digital cameras use exFAT

· High capacity of SDXC memory cards are formatted with exFAT since it is lighter than NTFS and will face no issues copying full length hd movies unlike with FAT32

· Launched in 2006, has 16EB file size limit but unlike NTFS, it does not carry extra features

**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.

a. Summarize how to view and set file and folder permissions.

Open Windows Explorer, right-click a file folder or volume >> 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.

2. Read the information provided on the “Advanced Permissions” page.

a. List the advanced permissions that affect files.

Allows or denies running program files.

b. List the advanced permissions that affect folders.

Allows or denies moving through a restricted folder to reach files and folders beneath the restricted folder in the folder hierarchy.

3. Read the information provided on the “Basic Permissions” page.

a. 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.

b. What basic permissions allow a user to write data to a file?

Basic read and execute, basic list folder contents and basic read.

c. What basic permissions allow a user to delete a folder?

basic modify, basic read and execute, basic list folder contents, basic read, basic write.

4. 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.

Because sometimes you don’t want some to write on or change something you asked them to read. An example of this is in peer feedback. If you asked someone to read over something, you don’t want them to write over what you wrote, change it all and make it their own work. You want them to read it and tell you if something was missing or such.

5. 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.

Maybe your asking someone to organize confidential information. You don’t want them to stumble on some personal information and you don’t want them to have access to it. That is when you may want to use one permission and not the other. It gives you access to organize without giving the access to see everything.

**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/>

1. What are share permissions?

a. Who do share permissions affect? Who do share permissions not affect?

They affect both local users and network users. They are based on the permissions granted to an individual user at the Windows logon, regardless of where the user is connecting from.

b. Summarize the 3 types of share permissions.

Read- can view files and subfolders names

Change- Can do anything allowed by read permission. They can add files or subfolders, change data, and delete.

Full control- users can do everything allowed by read and control permissions. They can also change permissions for NTFS files and folders.

2. Summarize the main difference between NTFS and Share Permissions.

· NTFS need more control but sp(share permissions) is easy.

· If share and ntfs are used together, the most restricted wins.

· Shares can be used when sharing FAT and FAT32, ntfs can’t

3. Summarize how to view and change share permissions.

Open the “Security” tab.>> In the folder’s “Properties” dialog box, click “Edit”.>>Click on the name of the object you want to change permissions for.>>Select either “Allow” or “Deny” for each of the settings.>>Click “Apply” to apply the permissions.

**Level 4: Your Files and Folders**

1. Organized your files and folders on your network drive to match your GitHub repository.

a. Create a folder on your student drive for Computer Science Work

b. Create sub-folders (e.g. Topic A, etc.) to match the folders on your GitHub repository

c. Move your answer files and other work you have done for this course into the proper sub-folders.

d. Show your organized folders/files to Mr. Nestor