

## Homework: 4 The Linux Filesystem

Watch the video “**Linux Filesystem Explained**” and read the presentation “**How to navigate the filesystem**” then answer the questions below.

**1. Explain the difference between absolute path and relative path:** The difference between the two paths are absolute path states the full path name from the root directory. Where as relative path specifies the path name from the current directory.

**2. Why Linux uses / instead of \ for its directory paths?**

- Linux follows UNIX traditions which is why it uses the forward slash instead of the back slash like windows.

**3. In Windows, these files are all the same: File FILE file and FiLE. But in Linux this is not the case, Why?**

- In Linux, they care about capitalization which is why linux will allow this because they're technically not named exactly the same.

**4. What is the Filesystem Hierarchy Standard (FHS) and who maintains it?**

- It defines the structure and layout for file/directory placement and is maintained by the Linux Foundation.

**5. Explain what type of files are stored in the following directories:**

Directory	What is it used for?
/bin	: Contains binary commands such as ls, cat and can be accessed in single user mode.
/dev	: This is where your devices are located such as your webcam or keyboard.
/etc	: This folder is where all your configurations are stored such as apt.
/home	: Each user has it's own folder in the home directory. Contains many different directories which stores your application settings.
/lib	: This is where shared libraries are stored.
/opt	: Usually contains manually installed software from vendors and software packages such as virtualbox.
/tmp	: This is where files are temporarily stored by applications that can be used during a session. This folder is usually empty when you reboot the system.
/var	: Variable directory that contains files and directories that are expected to grow in size. EX. var crash
/proc	: It is where you'll find pseudo files that contain information about system processing and resources
/usr	: This is where applications are installed that are used by the user. Contains shareable, read-only applications and files.

**6. How does a period at the beginning of a file name means (example .bashrc)?**

- It means that the file is a hidden file because it starts with a "."

**7. Which command would you use to list all the files inside the /usr/share/ directory?**

- `cd / | ls usr/share`

**8. If you are working in the /usr/share/icons directory and want to move to your home directory, which command would you use?**

- `cd`

**9. Explain what these commands do:**

`cd .config/.htop; cd ../; ls -lX`

- **`cd .config/.htop`** - This command will change your directory from the current to .htop.
- **`cd ../`** - This command will make you go back one directory.
- **`ls -lX`** - This command will long list the current directory by extension.

**10. John has a lot of files in the directory /var/www/html/webapp. He wants to long list all the files, including hidden files, by modification time (newest first), and with human-readable file sizes. Which command should he use conjuring that his current working directory is:**

`/home/john/.git/`

- `ls -lth /var/www/html/webapp`