Assignment :2

Task:4

4. File System in Linux:

a. Task: Explore and document the Linux file system structure - Use the ls command to explore the key directories in the Linux file system. Document the purpose of each directory and its common contents.

Certainly! The Linux file system has a hierarchical structure with various directories serving specific purposes. Here's a brief overview of some key directories along with their purposes and common contents:

/ (Root Directory):
Purpose: The root directory is the top-level directory in the Linux file system.
Common Contents: Configuration files, kernel, boot loader, and other essential system files.

/bin (Binary Binaries):
Purpose: Contains essential system binaries (executable files) required for system booting and repair.
Common Contents: Basic command binaries like ls, cp, mv.

/boot:
Purpose: Contains files needed for the system boot process, including the kernel and bootloader configuration.
Common Contents: Kernel images, bootloader files.

/etc (Etcetera):
Purpose: Contains system-wide configuration files and shell scripts that are used to boot and initialize system settings.
Common Contents: Configuration files for various applications, network settings, and system-wide scripts.

/home:
Purpose: Home directories for user accounts are located here.
Common Contents: User-specific data and configuration files.

/lib (Libraries):
Purpose: Essential system libraries required for programs in /bin and /sbin.
Common Contents: Shared libraries needed for system binaries.

/mnt (Mount):
Purpose: Mount points for temporarily mounted filesystems, such as external drives or network shares.
Common Contents: Mounted filesystems.

/opt (Optional):
Purpose: Directory for optional software packages.
Common Contents: Additional software installations.

/proc (Process Information):
Purpose: A virtual filesystem that provides information about processes and system status.
Common Contents: Process information, kernel parameters.

/sbin (System Binaries):
Purpose: Contains essential system binaries needed for system administration (superuser).
Common Contents: Administrative binaries like init, fdisk.

/srv (Service):
Purpose: Data directory for services provided by the system.
Common Contents: Data used by services like websites, FTP.

/tmp (Temporary):
Purpose: Directory for temporary files that are deleted upon reboot.
Common Contents: Temporary files created by applications.

/usr (Unix System Resources):
Purpose: Contains the majority of user-readable data and program files.
Common Contents: Binaries, libraries, documentation, and source code.

/var (Variable):
Purpose: Contains variable data files, such as logs and spool directories.
Common Contents: Log files, mail, printer spools.

/dev (Devices):

Purpose: Contains device files that represent hardware devices.
Common Contents: Device files for disks, partitions, terminals.

/media:
Purpose: Mount points for removable media devices like USB drives and external hard disks.
Common Contents: Mounted external devices.

/run:
Purpose: A tmpfs filesystem mounted at runtime, containing system information.
Common Contents: Process IDs (PIDs), sockets, lock files.

/sys (Sysfs):
Purpose: Virtual filesystem providing information about the kernel, devices, and kernel parameters.
Common Contents: Kernel parameters, device information.

/lib64:
Purpose: 64-bit libraries for programs in /bin and /sbin.
Common Contents: 64-bit shared libraries.

/proc/sys (Sysctl):
Purpose: Virtual directory for kernel parameters at runtime.
Common Contents: Kernel parameters that can be modified.

/usr/local:
Purpose: Directory for locally installed software, separate from the system package manager.
Common Contents: Locally installed programs and files.

/usr/share:
Purpose: Architecture-independent data files shared across multiple packages.
Common Contents: Shared data, icons, documentation.
/usr/bin:
Purpose: User command binaries.
Common Contents: User command binaries (similar to /bin).

/usr/sbin:
Purpose: System administration binaries for non-essential system binaries.
Common Contents: Administrative binaries for non-essential tasks.
/usr/include:
Purpose: Header files needed for compiling programs.
Common Contents: Header files.

/usr/lib:
Purpose: Libraries for programs in /usr/bin and /usr/sbin.
Common Contents: Libraries for user binaries.
/usr/local/bin:
Purpose: User binaries for locally installed software.
Common Contents: User binaries for locally installed programs.

/usr/local/lib:
Purpose: Libraries for locally installed software.
Common Contents: Libraries for locally installed programs.