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Exploring Desktop Environments

- Before DE there was the CLI
- There are multiple graphical desktops options
 - EX)

GNOME	KDE	XFCE
MATE	BUDGIE	LXDE
Cinnamon	Openbox	LXQT
Pantheon	Deepling DE	Fluxbox

- GUI: Graphical user interface that allows user to use apps and windows
- DE:Desktop environment made of a bundle of programs running on opp systems. similar to GUI . sometimes describe as graphical shell.
- Different distributions ship with different desktop environments.
 - most common GNOME and KDE
- Linux is not limited like Window and MacOS
- DE provides a predetemined look and feel to the GUI. its typically broken into the following graphical sections and functions
 - Desktop settings
 - Display Manager
 - File manager
 - Icons
 - Favorites bar
 - Launcher
 - Menus
 - Panels
 - System Tray
 - Widgets
 - Window Manager

What is a Shell?

Shells make Large Scale IT Possible. They're a necessary component to modern computing. **The Linux terminal**

- **CLI** A command line interface is a means of interacting with a computer program where the user issues commands to the program in the form of successive lines off text.
- The two ways to access the CLI:
 - Terminal Emulator

- Linux Console **Console Terminals**
- one way to get to a CLI is to take the linux system out of graphical desktop mode and place in text mode
 - it emulates the old days of hard-wired console terminal and is a direct interface to linux system.
- When Linux system starts it automatically creates several virtual consoles.
 - a virtual console is a terminal session that runs in linux system memory.
- Most linux distributions start five or six terminals. **Terminal Emulator** A terminal emulator is a program that allows you to access the Linux CLI. Most the time you will be using a terminal emulator if you have GUI installed.

Some Terminal emulators are:

- GNOME Terminal
- Konsole
- Terminology
- RXVT-Unicode
- TILIX **The Bash Shell**
- A program that provides interactive access to the Linux system
- Runs on regular programs and starts when user logs into a terminal
- Most Linux distributions use bash shell as default shell.
- Other shells
 - Tcsh Shell
 - Csh Shell
 - Ksh Shell

Managing Software

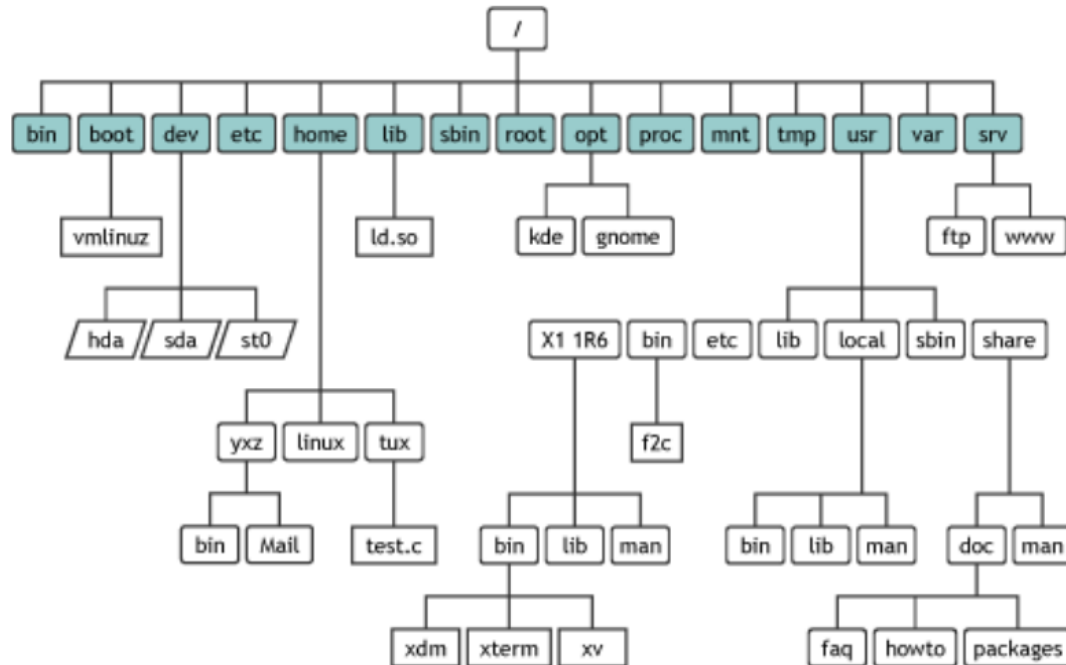
Basic Terminology

- Package: archives that contain binaries of software, configuration files and information about dependencies.
- Library reusable code that can be used by more than one function or program.
- Dependency: software needed as a foundation for other software
- Repository: a large collection of software available for download.

The Linux File system

- file system: the way files are stored and organized to simplify access to data.
- Linux organizes its files in what is called a hierarchical directory structure (tree-like pattern of folders)
- Directory and folder mean the same thing
- the first directory in the file system is called **root** directory. the root contains files and subdirectories.
- **Filesystem hierarchy standard (FHS)**: specifies requirements and guidelines for file and directory placement in UNIX-like operating systems **Linux Directory structure**
- think of the file system as a tree where every branch represents a directory (folder)

- you always work inside a particular directory and you can move forward to subdirectory or backwards to a parent directory
- the directory where you are currently is called the current working directory or present working directory.
- in a file system every file has a pathname which indicates the location of the filesystem (like an address)



**** Commands to move around the filesystem****

- **pwd** - displays current directory
 - **cd** - used to change directory
 - **ls** - used to display all the files inside a given directory. when no specific directory displays the files in the current working directory
- Types of Pathnames**
- absolute path - states the full pathname starting from root (/). Always starts from the root
 - EX) /home/john/downloads/song.mp3
 - Relative path - specifies the pathname starting from the current directory. always starts with a subdirectory.
 - EX) downloads/song.mp3