Lecture 2 Introduction to Linux Notes

Important concepts:

- **Operating System:** An operating system is a system that provides all the fundamental features of a computer.
- **Kernel:** A kernel is a software component that is responsible for managing all the low-level features of a computer, such as CPU time, memory allocation, etc.
- **Components of an operating system:** File management, process management, network management, I/O device management, main memory management, secondary-storage management, and security management.
- **Linux :** A Unix-like operating system consisting of kernels, libraries, and utilities.
- **Linux Characteristics:** Open-source software, free, high customization, many businesses and organizations use it, can be installed on almost any system, and the vast majority of server applications use it.
- **GNU Toolchain:** A collection of compilers, libraries, debuggers, and, core utilities modeled on Unix.
- **Linux Distribution:** Consists of a Linux kernel, core Unix tools (GNU tool sets, X Window System, etc.), supplemental software, startup scripts, and installer.
- **What is Ubuntu:** A Linux distribution that is available with both community and professional support.
- **Ubuntu Release cycles:** Regular Ubuntu release cycles are every six months with 9 months of support. Long term support (LTS) is shipped every two years with five years of support.
- **What is Debian:** An all-volunteer organization that is dedicated to developing free software while also promoting a community for Free Software.
- **Different software licensing models (open source vs closed source):** Open source software can be distributed for free or for a fee, and is distributed by the software. Closed source software doesn't allow for distribution and modifying the code is restricted.
- **The 4 Freedoms of Free Software:** Use the software for any purpose, examine the source code and modify as you see fit, ability to redistribute the software, and ability to redistribute the modified software.
- **Virtualization:** The creation of a virtual version of something.
- **Hypervisor and types:** Hypervisor is the software and/or hardware in charge of creating, managing, and running virtual machines. Type 1 runs directly on the hardware while type 2 runs on top of the operating system.
- **VirtualBox:** A tool for virtualizing x86 and AMD64/Intel64 computing architecture, enabling users to deploy desktops, servers, and operating systems as virtual machines

List of the main Linux distributions

- Debian
- Red Hat
- Slackware
- Arch Linux

List of some of the Debian Based Linux distributions

- Linux Mint

- Kali Linux
- Parrot OS
- Linux Deepin
- MX Linux
- Steam OS

List of some of the Red Hat-based Linux distributions

- Oracle Linux
- Scientific Linux
- Pie Box Enterprise Linux
- Cent OS
- Clear OS
- Rocky Linux

List of some of the Ubuntu Based Linux Distributions

- Linux Lite
- Linux Mint
- Elementary OS
- Pop OS
- Zorin OS
- Peppermint