Week Report 3

Summary of presentations

Introduction to Linux

What is an operating system?

- An **operating system** provides all fundamental softwares features of a computer. An OS enables you to use the computer's hardware providing basic tools that make computers useful. The OS's kernel are relayed by the features.

Aside from a kernel, what other parts make an operating system?

- **Command-Line Shells** was the de facto way of using computers before the Graphical Interface. CMDs work by typing commands in a shell and in Linux, the entire system can be controlled by the CLI.
- **Graphical User Interfaces** rely on icons, menus, and a mouse pointer for user interaction. Linux relies on a GUI called the X Window System.
- **Utility and productivity programs** are tools like web browsers, document processors, and text editors.
- Lastly, **libraries** are collections of programming functions that can be used in a variety of programs.

What is a Linux distribution?

- **Linux distribution** is a complete Linux package that consists of the following elements:
  - The use of different versions of the Linux Kernel on different distributions.
  - **Core unix tools** that consists of the GNU tool set, the X Window System, Desktop Environment, etc.
  - **Supplemental software** that includes server applications, user applications and more.
  - **Startup scripts** differentiate different distributions that range from launching dozens of programs at startup to modifying the way desktop environments behave.
  - A number of **installers** are used differently by different distributions and manage software differently.

What is Ubuntu?

- Ubuntu is a **Linux Distribution** that is freely available with both community and professional support. It includes pieces of software such as Libre Office and Firefox.

Define the following terms: Open Source, Closed source, free software

- **Open source-** the software may be distributed for a fee or for free and is distributed with the software.
- **Closed source-** software is not distributed with the source code and the user is restricted from modifying the code.
- **Free software-** the software is distributed with the source code and this software can be free or obtained by paying a fee.

What are the 4 freedoms defined by the free software foundation?

- **Freedom 0:** using the software for any purpose.
- **Freedom 1:** examine the source code and modify as you see fit.
- **Freedom 2:** redistribute the software.
- **Freedom 3:** redistribute your modified software.

The Basics of Virtualization

What is virtualization?

- **Virtualization** means creating virtual versions of something. Virtualization is often used to create multiple computers in one physical computer.

List 3 benefits of virtualization

- The reduced costs due to decreasing the physical hardware needed for a network.
- Allowing a chance to test applications before installing them on a host machine.
- Offers the ability to save the state of a machine and roll it back or forward to the time wanted.

What is a hypervisor?

- A **hypervisor** is a software or hardware in charge of creating, managing, and running virtual machines. There are two types of hypervisors with **type 1** running directly on the hardware and **type 2** is an application that runs on top of an operating system.

What is virtualbox

- **VirtualBox** is a powerful virtualization product for enterprise and home use. VirtualBox is rich in features and outputs high performance.

Exploring Desktop Environments

What is a desktop environment? (Provide 3 examples)

- A desktop environment is an implementation of the desktop metaphor made of a bundle of programs running on top of a computer operating system.
    - Three examples include GMOME, KDE and MATE.

List 4 common elements of desktop environments

- **Desktop Settings** consists of programs that allow you to make configuration changes to the desktop environment.
- **Display manager** allows you to choose between the desktop environment and users.
- **File manager** allows you to perform file maintenance activities graphically.
- **Icons** are picture representations of a file or program.

What is Ubuntu's default desktop environments?

- **GNOME 3** is Ubuntu's default desktop environment. The official GUI for GNOME 3 is called GNOME Shell.

- The **KDE desktop environment** specified the project's organizations and the strong community that supported it.

What are the official flavors of Ubuntu?

- **Mate** is an official flavour of Ubuntu and is a desktop environment that has forked application in Spanish.
- The **Cinnamon Desktop Environment** is a free and open-source desktop environment for the X Window System that is considered to be easy to use.

What is a Shell?

What is Bash?

- **Bash** is a necessary component to modern computing that make large-scale IT possible.

How do you access the Linux CLI?

- The **Linux CLI** is accessed via the ***terminal emulator*** or the ***linux console.***

What is a console terminal?

- **Console Terminals** has a mode called the *Linux console* that emulates the old days of a hard-wired console terminal and is a direct interface of the Linux system.

What is a terminal emulator?

- **Terminal Emulator** is a program that allows you to access the Linux CLI.
- Terminal emulators include GNOME terminal, konsole, terminology, and TILIX.

Provide 3 examples of Linux commands

- **date** displays the current date and time
- **cal** displays a calendar of the current month
- **free** displays the amount of free memory
- **clear** clears the screen

Managing Software

Which command is used for updating ubuntu

- The command used for updating ubuntu is:
    - sudo apt update; sudo apt upgrade -y

Which command is used for installing software. Provide an example.

- The command for installing software is:
    - sudo apt install package name
- Example: sudo apt install screenfetch -y

Which command is used for removing software. Provide an example.

- The command for removing software is:

- sudo apt remove package name
  - Example: sudo apt remove firefox -y

Which command is used for searching for software. Provide an example.

- The command for searching software is:
  - apt search "search"
- Example: apt search "web browser"

Definition of the following terms:

- **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.
- **Repository-** a large collection of software available for download.