Week Report 3 Completed

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Introduction to Linux

Your report must include the following:

What is an operating system?

An operating system (OS) is software that manages computer hardware and provides services for computer programs.

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

an operating system consists of various components such as device drivers, system libraries, command-line interpreters, and graphical user interfaces (GUIs)

What is a Linux distribution?

A Linux distribution is a complete operating system built on the Linux kernel, including system utilities, libraries, and software packages.

What is Ubuntu?

Ubuntu is a popular Linux distribution.

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

- **Open source** - Software whose source code is freely available to the public, allowing users to view, modify, and distribute the code.
- **Closed source** - Software whose source code is not available to the public. Users can only use the compiled version of the software.
- **Free software** - Software that provides users with the freedom to run, study, modify, and distribute the software. It does not necessarily mean the absence of cost.

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

1. Freedom to run the program as you wish.
2. Freedom to study the source code and modify it.
3. Freedom to redistribute copies.
4. Freedom to distribute modified versions.

The basics of Virtualization

Your report must include the following:

What is virtualization?

Virtualization is the process of creating a virtual (rather than actual) version of something, such as a virtual machine (VM), operating system, storage device, or network resources.

List 3 benefits of virtualization

1. Resource optimization and efficiency.
2. Isolation and security.
3. Simplified IT management and maintenance.

What is a hypervisor?

A hypervisor is a software or firmware that creates and manages virtual machines. It enables multiple operating systems to share a single hardware host.

What is virtualbox

VirtualBox is a free and open-source hypervisor for x86 computers. It allows users to run multiple operating systems on a single machine.

Exploring Desktop Environments

Your report must include the following:

What is a desktop environment? (Provide 3 examples)

Desktop is the opening page seen after a user has logged into their computer.

List 4 common elements of desktop environments

1. Desktop wallpaper/background.
2. Icons for files and applications.
3. Taskbar or panel.
4. Start menu or application launcher.

What is Ubuntu's default desktop environments?

What are the official flavors of Ubuntu?

What is a Shell?

Your report must include:

What is Bash?

Bash (Bourne Again SHell) is a widely used command-line shell for Unix-like operating systems.

How do you access the Linux CLI?

Access is typically gained through a terminal emulator or a console terminal.

What is a console terminal?

A console terminal is a physical or virtual device used to interact with a computer system through a command-line interface.

What is a terminal emulator?

A terminal emulator is a program that emulates a physical computer terminal, allowing users to access the command line on a graphical desktop.

Provide 3 examples of Linux commands

```
ls - List directory contents.
```

```
cd - Change directory.
```

```
mkdir - Create a new directory.
```

Managing Software

Your report must include the following:

Which command is used for updating ubuntu

Update ubuntu `sudo apt update && sudo apt upgrade`.

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

Installing packages

```
sudo apt install <package>
```

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

Deleting Packages

```
sudo apt remove <package>
```

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

Searching for specific applications:

```
apt search <keyword>
```

Definition of the following terms:

Package

A package is a compressed archive file that contains software, metadata, and installation instructions.

Library

A library is a collection of precompiled functions and routines that can be used by software applications.

Repository

A repository is a storage location where software packages are stored and can be retrieved and installed by package management tools.