Notes 2

1. What is an Operating System?

An operating system provides all fundamental software features of a computer. An OS enables you to use the computer's hardware providing you the basic tools that make the computer useful. All of those features relay on the OS's kernel. Other OS features are owed to additional programs that run atop the kernel.

2. What is a kernel?

An OS kernel is a software component that's responsible for managing low-level features of the computer, including the following managing system hardware, memory allocation, CPU time, and program to program interaction.

3. Which other parts aside from the kernel identify an OS?

- Command-Line Shells
- Graphical User Interface
- Utility and Productivity Programs
- Libraries

4. What is linux and linux distribution?

- Linux is a **Unix-like Operating System** popular in academic and business environments.
- Linux consists of a *kernel*, *libraries*, and *utilities* that make up the entire operating system.
- Popular Linux distributions include:
  - Arch
  - CentOS
  - Debian
  - Fedora
  - openSUSE
  - Red Hat
  - Slackware
  - Ubuntu

6. List at least 4 linux characteristics:

- Linux is an *open source software*
- Linux is available *free of charge*
- Linux includes many of the *Unix tools* including many important internet server programs and programming languages out of the box.
- Linux is *highly scalable* and customizable.

7. What is Debian?

- Debian is an all-volunteer organization dedicated to developing free software and promoting the ideals of the Free Software community.

- Debian is known to to be the ***Grandfather*** of all linux distributions alongside Slackware and Open Suse.

9. List and define the different types of licensing agreements

- **Open Source**: the software may be distributed for a fee or free. The source code is distributed with the software.
- **Closed Source:** The software is not distributed with source code. The user is restricted from modifying the code.
    - **Freeware:** The software is free but the source code is not available.
    - **Shareware:** The software is free on a trial basis.
- **Free Software:** The software is distributed with the source code. The software can be free of charge or obtained by a fee.

10. What is Free Software? Define the 4 freedoms.

Free Software is distributed with the source code. The software can be free of charge or obtained by a fee. The 4 software freedoms are:

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

11. What is virtualization?

- Virtualization is defined as creating virtual versions of something.
- Virtualization is often use to let multiple OSs run on one physical machine.