**Linux – Assignment 1**

1. What is Linux?
   1. Linux is a Unix-like operating system kernel that serves as the core component of various Linux distributions.
2. What is the difference between Linux and Unix?
   1. Linux is a Unix-like operating system kernel released in 1991 by Linus Torvalds, whereas Unix refers to a family of operating systems developed in the late 1960s and early 1970s. Linux is open-source and freely available, while Unix traditionally had commercial versions.
3. What is Linux Kernel? Is it legal to edit Linux Kernel?
   1. Yes, it is legal to edit the Linux kernel. Linux is distributed under the GNU General Public License (GPL), which allows users to modify and redistribute the source code freely. However, if you distribute modified versions of the kernel, you must also release the source code for those modifications under the GPL.
4. What is LILO?
   1. LILO stands for "LInux LOader." It is a boot loader for Linux systems that was commonly used in the past to load the Linux operating system into memory and start the system. LILO allowed users to choose between multiple operating systems installed on the same computer during boot-up.
5. What are the basic components of Linux?
   1. The kernel, X Server, Applications, Desktop environment
6. Which are the Shells used in Linux?

The most commonly used shells in Linux are:

* 1. Bash (Bourne Again Shell): This is the default shell for most Linux distributions. It's highly versatile and is the successor to the original Bourne shell (sh).
  2. Zsh (Z Shell): Zsh is an extended version of the Bourne shell with additional features for customization and productivity.
  3. Fish (Friendly Interactive Shell): Fish is known for its user-friendly features, such as autosuggestions, syntax highlighting, and powerful scripting capabilities.

1. What is Swap Space?
   1. Swap space is a reserved area on a disk used by the operating system when it runs out of RAM. It allows the system to store less frequently accessed data to free up RAM for more critical tasks, preventing crashes due to memory exhaustion
2. What is the difference between BASH and DOS?
   1. BASH is a default CLI for most Linux distributions, providing powerful scripting capabilities and extensive features for interacting with the operating system.
   2. DOS is an older operation system primarily used on IBM PC-compatible computers.
3. What command would you use to check how much memory is being used by Linux?
   1. “free” command can be used to check memory usage in Linux.
4. Explain file permission in Linux.
   1. File permissions in linux specify who can read, write or execute a file. They are represented by three sets of permissions for the owner, groups and others. Each set consists of three characters: read (r), write (w) and execute (x).
      1. Eg: “rwxr-xr--” means the owner has read, write and execute permissions, the group has read and execute permissions and others have only read permissions.