

# Linux Essentials

## Detail Syllabus

### History and Development of Linux

- ⊖ History of linux
- ⊖ Benefits of Linux
- ⊖ Linux Distributions
- ⊖ Open source

### Installation and Configuration:

- ⊖ Installation of different flavors of Linux
- ⊖ Booting procedure
- ⊖ Installation of Linux
- ⊖ Application /software(rpm,yum,tar)
- ⊖ Desktop Environment(KDE,GNOME)

### Linux file systems:

- ⊖ Types of files
- ⊖ DOS file vs Linux file
- ⊖ Types of file systems
- ⊖ Managing the file system
- ⊖ Performing file system maintenance (e,g fsck,fdisk,mkfs).
- ⊖ Locating files
- ⊖ Linux directory structure.

### Configuration Linux Environment:

- ⊖ DOS shell, Linux shell
- ⊖ Working with Different shell
- ⊖ Text processing Utilities.(grep,cut,sed,sort,diff,and patch)
- ⊖ Set system variable(e,g PATH,USER,HOME).
- ⊖ Use command shell(commands and Expressions)
- ⊖ Shell programming using BASH shell.

### Creating and viewing files:

- ⊖ Using the vim editor
- ⊖ Using the other editors

### Users ,Groups and Permissions

- ⊖ Create,delete,and Modify user/groups

- ⊖ Reading and setting permissions on files and directories.
- ⊖ SetUID and getGID

### System maintenance

- ⊖ Mount and manage file systems and devices (e,g /dev,/mnt).
- ⊖ Monitoring free disk space with df/du
- ⊖ Perform Administrative task as root by using su and sudo.
- ⊖ Managing software packages
- ⊖ Enhancing security with SELinux and net filter Firewall.

### Network configuration:

- ⊖ Configure network device and connection
- ⊖ Configure access rights (e,g., Remote desktop,VNC viewer,SSH).
- ⊖ Configure a server-client work stations.

### Programming platform

- ⊖ Programming on linux (e,g c,c++,java)
- ⊖ GCC,G++,JAVAC, compiler option KDevelop ,EMACS.

### Kernel Architecture

- ⊖ Kernel overview
- ⊖ Kernel compilation

