Experiment 1:

To practice on UNIX commands: cal, date, echo, passwd, who, tty, stty, cd, mkdir, rmdir, ls, cp, mv, rm, cat, touch, clear, more, wc, cmp, diff, comm, head, tail, cut, paste, sort, tr, uniq

1.1 Display Calender

cal command is a calendar command in Linux which is used to see the calendar of a specific month or a whole year.

Syntax: $cal\ [month[year]]$

1.2 Display Date

date command is used to display the system date and time.
Syntax: $date\ [option]..[format]$

1.3 Display Message

the echo command is use to displays the given text on the screen.

Syntax: $echo\ "message"$

1.5 Display User Information

The who command is used to display information about currently logged-in users. who command is used to find out the following information:

- Time of last system boot
- Current run level of the system
- List of logged-in users and more

Syntax: $who\ [options]\ [filename]$

1.6 Display information about terminal

The tty command is used to print the filename of the terminal connected to the standard input.

Syntax": $tty\ [option]$

1.7 Display or change terminal line settings

stty command in Linux is used to change and print terminal line settings. This command shows or changes terminal characteristics.

Syntax: $stty\ [-F\ DEVICE\ |\ --file = DEVICE]\ [SETTING]..$

1.8 Viewing files in the current working directory

Typing and entering ls will display and directories contained within your current working directories.

Syntax: ls

Your default current working directory in this lab environment, the directory, is empty. Thus entering ls into the command line will not return anything yet.

1.9 Viewing files and directories within any directory

If you know the path to a directory, you can view its contents by passing the path name as a *command line argument* to the ls command as follows:

$$ls\ < path\_to\_directory >$$

Recall some of the standard subdirectories of 'slash' that you've learned about previously:

Directory	Contains
/bin	System commands, also called binaries
/sbin	System administration binaries
/usr	User programs and data
/home	Home directory
/media	Removable media device directories

will display the contents of the /bin directory.
Here are some common options that you can try with the ls command:

Option	Description
-a	List all files, including hidden files
-d	List directories only, do not include files
-h	With -l and -s, print sizes like 1K, 22M etc
-l	Include attributes like permission, owner, size and last modified date
-S	Sort by file size, largest first
-t	Sort by latest modified date, newer first
-r	Reverse the sort order

You can cobines options $-l$ and $-a$ as $-la$

1.10 Copying files

You can use the cp command to copy user-info.txt, which is now in your /tmp directory, to your current working directory:
Syntax: $cp\ old\_file\ new\_folder$

1.11 Renaming or Moving files

You can use the mv command to move files from one directory to another and/or rename them.
Syntax: $mv\ source\_file\ dest\_file$

1.12 Removing files

The rm command is used to delete files, ideally with the -i option, which creates a prompt to ask for confirmation before every deletion.
Create empty.txt using touch command
verify the creation of empty.txt using ls command
then remove the empty.txt file using rm comman as follows
syntax: $rm\ e \qquad\qquad mpty.txt$

1.13 Creating Empty files

touch command is used to create an empty file.
Syntax: $touch \qquad\qquad [options]$
$f \qquad\qquad ilename$

1.14 Clearing Terminal Screen

clear is a standard Unix computer operating system command that is used to clear the terminal screen.

Syntax: $clear$

1.15 Pagewise viewing of a file

more is a filter for paging through text one screenful at a time.

Syntax:

where

[-options]: any option that you want to use in order to change the way the file is displayed. Choose any one from the followings: ('-d', '-l', '-f', '-p', '-c', '-s', '-u')

[-num]: type the number of lines that you want to display per screen.

[+/pattern]: replace the pattern with any string that you want to find in the text file.

[+linenum]: use the line number from where you want to start displaying the text content.

[file_name]: name of the file containing the text that you want to display on the screen.

1.16 Counting words in a file

wc is used to find out number of lines, word count, byte and characters count in the files specified in the file arguments.

Syntax: $wc\ [OPTION]\ldots[FILE]\ldots$

1.17 Comparing file line by line

The diff command is used to compare files line by line in UNIX.

Syntax: $diff\ [OPTION]\ldots FILE1\ FILE2$

The 'comm' command in Linux is a powerful utility that allows you to compare two sorted files line by line, identifying the lines that are unique to each file and those that are common to both.

Syntax: $comm\ [OPTION]\ldots FILE1\ FILE2$

1.18 Displaying top N numbers of data

The head command, as the name implies, print the top N number of data of the given input.

Syntax: $head\ [OPTION]\ldots[FILE]\ldots$

1.19 Displaying last N numbers of data

The tail command, as the name implies, prints the last N number of data of the given input. By default, it prints the last 10 lines of the specified files.

Syntax: $tail\ [OPTION]\ldots[FILE]\ldots$

1.20 Sorting items

The sort command orders a list of items both alphabetically and numerically.

Syntax: $sort\ [options]\ filename$

1.21 Removing adjacentduplicate lines

The uniq command removes adjacent duplicate lines in a list.

Syntax: $uniq\ [OPTIONS]\ [INPUT\_FILE\ [OUTPUT\_FILE]]$

1.22 Changing case

The command 'tr' stands for 'translate'. It is used to translate, like from lowercase to uppercase and vice versa or new lines into spaces.

Syntax: $command\ |\ tr\ <'old'><'new'>$

1.23 Slicing a line

The cut command in linux is a command for cutting out the sections from each line of files and writing the result to standard output. It can be used to cut parts of a line by byte position, character, and field.

Syntax: $cut\ OPTION\ldots[FILE]\ldots$

1.24 Joining Files

paste command is used to join files horizontally (parallel merging) by outputting lines consisting of lines from each file specified, separated by tab as delimiter, to the standard output.

Syntax: $paste\ [OPTION]\ldots[FILES]\ldots$

1.25 Get location of the present working directory

the pwd command is use to obtain absolute path of your present working directory

1.26 Navigating Directories using *cd* command

Symbols used to navigate special paths:

Symbols	Stands for path to
~	Home Directory
/	Root Directory
.	Current Directory
..	Parent Directory

Changing your present directories to your home directories

To change your current working directory to your default home directory, use the ~ symbol as follows

$$cd\ \sim$$

Changing your present working directory to its parent directory

To change your current working directory to the *parent* directory of your present working directory, enter the following command using .. symbol as follows

$$cd..$$

Changing working directory to root directory

To change your current working directory to the root directory, use the following command with the / key:

Changing your present working directory to a child directory

Syntax: $cd\ dir\_name$