**Ex 1: Linux Shell Commands & Python in Interactive**

**Mode**

**Aim:** To understand basic computer terms and to learn basic comands in linux operating system

**Study the following and record your observation with examples for section A and B**

1. **Define the following terms:**

1.Computer:an electronic machine that can store,find and arrange information,calculate amounts and control other machines.

Eg.ENIAC-First programmable ,electronic computer

Laptop-modern portable computer

(Dell,hp,etc…)

2.Hardware:computer hardware includes the physical parts of a computer.

Eg.central processing unit(cpu),random access memory,monitor,mouse,keyboard,etc..

3.Software:software is a set of computer programs and associated documentation and data. Eg. Compiler,linker,interpreter.

4.Types of Software:(i)application software eg. MS office,browser

(ii)system software eg. Operating system

5.High level language:programmer-friendly languages that are manageable,easy to understand,debug,and widely used in today’s times eg.Perl,BASIC,COBOL,Pascal,Ruby,etc..

6.Assembly level language:any low level programming language with a very strong correspondence between the instructions in the language and the architecture’s machine code instructions

Eg. “EAX”,”EBX”, and “ECX” are the variables

7.Machine level language:the elemental language of computers.it is read by the computer’s CPU,is composed of digital binary numbers and looks like a very long sequence of zeros and ones. Eg. Binary language

8.Operating systems:the program that after being initially loaded into the computer by a boor program, manages all of the other application programs in a computer.eg. Windows,ios

9.Compiler:generates an intermediate machine code,takes the entire program in one go.eg.c,c++,etc..

10.Interpreter: never produces any intermediate machine code,takes the single line of code at a time.eg. Python,ruby,etc..

11.Editor: software programs that enable the user to create and edit text files.eg. Adobe photoshop, audacity(sound editors)

12.Shell: computer program that exposes an opersting system’s services to a human user or

other programs.eg. Csh,ksh,powershell,etc…

**B. Linux Shell Commands:**

1.File and directory commands

a.ls, ls -l:displays list of files available in the current working directory

b.cd: change directory

cd ..:to exit current directory cd /: go to more directories cd ~:directly takes to root directory

c.mkdir:create a new directory

d.cat (displaying, creating, appending options):view content of the file(syntax: cat filename)

cat >: take input from user,store it in the file.(here the existing content

gets deleted) cat>>filename: preserves existing content as well cat<filename:output redirected from the file to screen

e.cp:copy content from one file to another

f. mv : move for both files and directories

g.chmod : to change the file access permissions(read,write,execute)

Syntax: chmod 777 filename

h.wc:word count. Displays number of lines,words and characters

i. find:availability of the file in your directory

2.System related commands

a.who:gives information about current user(user name,login date and time)

b.whoami:gives only the current system name

c.pwd:display the path of current system name

d.date :displays date

e.man:to display the user manual of any command that we can run on the

terminal

f. echo:to display line of text or string that are passed as an arguement g.cal: calendar

h.bc:binary calculator

3. Create a new directory named “SSN”, a subdirectory "BE" under SSN and create a file named “firstyear.txt” and write about the SSN orientation programme.

@home~$mkdir SSN cd SSN

~/SSN$mkdir BE cd BE

~/SSN/BE$cat>firstyear.txt

Ssn orientation program was good

(ctrl+d)

4.Rename the firstyear.txt file as orientation.txt ~/SSN/BE$ mv firstyear.txt orientation.txt

5.Give all permissions to user and only reading permission to others

~/SSN/BE$chmod 704 orientation.txt

6.Create a file "AboutMe.txt". Write about yourself and your ambitions.

~/SSN/BE$ cat >AboutMe.txt

I am Biancaa. R

My ambition is to workhard and settle well in life

(ctrl+D)

7.Create two directories namely “dept\_x” (x being your dept name) , “SEC\_X” inside “SSN” folder.

~/SSN/BE$cd ..

~/SSN$mkdir SEC\_X

8.Create a file named “dept.txt” and write about your department in that file.

~/SSN$cat >dept.txt I am from ece department ctrl+D)

9.Copy the file named “first\_year.txt” to “SEC\_X” folder.

~/SSN$cd BE

~/SSN/BE$cp firstyear.txt SEC\_X

1. Move the file “dept.txt” to “SEC\_X” folder.

~/SSN/BE$cd ..

~/SSN$mv dept.txt SEC\_X

1. Enter into folder “SEC\_X” and list the folder content.

~/SSN$cd SEC\_X

~/SSN/SEC\_X$ls

orientation.txt dept.txt

1. Move to “SSN” folder and list all the contents.

~/SSN/SEC\_X$cd ..

~/SSN$ls

BE dept\_it SEC\_X

**C. Working in Python Interactive Mode:**

1. Create a variable named *num1* with some integer value and display the value & its datatype.

>>> num1=1

>>> print(num1)

1

>>> type(num1)

<class 'int'>

1. Create another variable named *num2* with some integer value and display its datatype. Use the same variable to store a floating value and write your inference.

>>> num2=2

>>> type(num2)

<class 'int'>

>>> num2=2.1

>>> type(num2)

<class 'float'>

Infernce- when we store an integer value,the type is integer and with decimal numbers, the type is float.

1. Create a variable *name* with your name as input

>>> name=input("enter your name") biancaa

1. Display the value of *num1, num2* and *name*.

>>> print(num1,num2,name) 1 2.1 biancaa

1. Display the type of *num1, num2* and *name*.

>>> print(type(num1),type(num2),type(name))

<class 'int'> <class 'float'> <class 'str'>

1. Display “Hello “along with your *name*.

>>> print("Hello "+name) Hello biancaa

1. Find the output of 4+6\*7 /2 directly.

>>> print(4+6\*7/2)

25.0

1. Find the output of 4+5\*7 /3 directly.

>>> print(4+5\*7/3)

15.666666666666666

1. Find the output of 4+5\*7 //3 directly.

>>> print(4+5\*7//3) 15

1. Find the output of num1 raised to power of num2

>>> num1=int(input ("enter number 1" ) )

>>> num2=int(input("enter the number 2"))

>>> print(num1\*\*num2)

2

3

>>>8

1. Get the input from the user and display the value.

>>> age=int(input("enter your age"))

17

>>> print(age) 17

**Learning outcome:**

To understand basic computer terms and to learn basic comands in linux operating system