

OS - Experiment 1

Name: Kartik Jolapara

Sapid: 60004200107

Div./Batch: B/B1

Branch: Computer Engineering

AIM:

Explore the internal commands of Linux and Write shell scripts to do the following.

1. Display top 10 processes in descending order

```
codingmickey@DESKTOP-DC7H32B:~ $ echo "Top 10 processes in descending order" && ps axl | head -n 10
```

```
codingmickey@DESKTOP-DC7H32B:~ $ echo "Top 10 processes in descending order" && ps axl | head -n 10
Top 10 processes in descending order
F  UID    PID  PPID  PRI  NI   VSZ   RSS WCHAN    STAT TTY        TIME COMMAND
4    0      1    0  20   0  1744  1088 -          SL   ?           0:00 /init
5    0      7    1  20   0  1752   76 -          Ss   ?           0:00 /init
1    0      8    7  20   0  1752   84 -          S    ?           0:00 /init
4  1000     9    8  20   0 13184  7064 sigsus Ss   pts/0       0:00 -zsh
0  1000    117   9  20   0 10540  3056 -          R+   pts/0       0:00 ps axl
0  1000    118   9  20   0  7244   520 pipe_r S+   pts/0       0:00 head -n 10
```

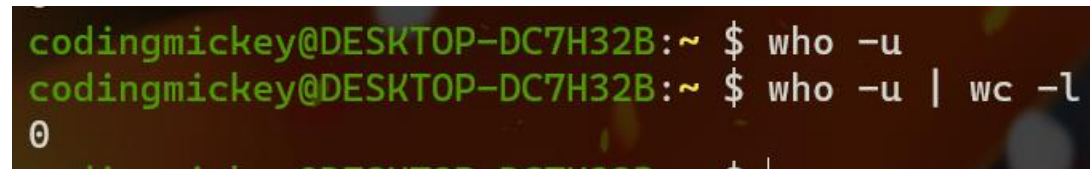
2. Display processes with highest memory usage.

```
codingmickey@DESKTOP-DC7H32B:~ $ ps -eo pid,ppid,cmd,%mem,%cpu --sort=%mem | head
```

```
codingmickey@DESKTOP-DC7H32B:~ $ ps -eo pid,ppid,cmd,%mem,%cpu --sort=%mem | head
PID  PPID  CMD          %MEM %CPU
7    1    /init        0.0  0.0
8    7    /init        0.0  0.0
125  9    head         0.0  0.0
1    0    /init        0.0  0.0
124  9    ps -eo pid,ppid,cmd,%mem,%c 0.0  0.0
9    8    -zsh         0.1  0.1
```

3. Display current logged in user and no. of users.

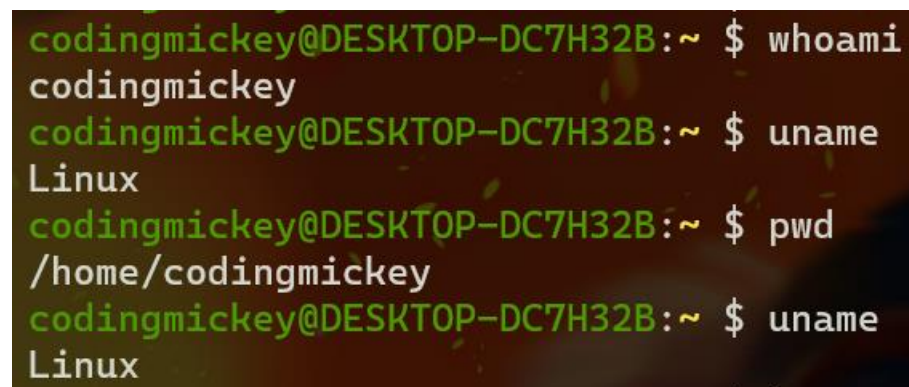
```
codingmickey@DESKTOP-DC7H32B:~ $ who -u  
codingmickey@DESKTOP-DC7H32B:~ $ who -u | wc -l
```



```
codingmickey@DESKTOP-DC7H32B:~ $ who -u  
codingmickey@DESKTOP-DC7H32B:~ $ who -u | wc -l  
0
```

4. Display current shell, home directory, operating system type, current working directory.

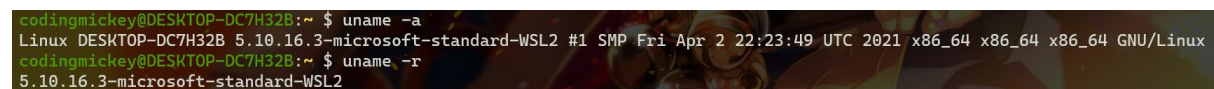
```
codingmickey@DESKTOP-DC7H32B:~ $ whoami  
codingmickey@DESKTOP-DC7H32B:~ $ uname  
codingmickey@DESKTOP-DC7H32B:~ $ pwd  
codingmickey@DESKTOP-DC7H32B:~ $ uname
```



```
codingmickey@DESKTOP-DC7H32B:~ $ whoami  
codingmickey  
codingmickey@DESKTOP-DC7H32B:~ $ uname  
Linux  
codingmickey@DESKTOP-DC7H32B:~ $ pwd  
/home/codingmickey  
codingmickey@DESKTOP-DC7H32B:~ $ uname  
Linux
```

5. Display OS version, release number.

```
codingmickey@DESKTOP-DC7H32B:~ $ uname -a  
codingmickey@DESKTOP-DC7H32B:~ $ uname -r
```



```
codingmickey@DESKTOP-DC7H32B:~ $ uname -a  
Linux DESKTOP-DC7H32B 5.10.16.3-microsoft-standard-WSL2 #1 SMP Fri Apr 2 22:23:49 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux  
codingmickey@DESKTOP-DC7H32B:~ $ uname -r  
5.10.16.3-microsoft-standard-WSL2
```

6. Illustrate the use of sort, grep, awk, etc.

```
codingmickey@DESKTOP-DC7H32B:~ $ cat > boring  
codingmickey@DESKTOP-DC7H32B:~ $ ls  
codingmickey@DESKTOP-DC7H32B:~ $ cat boring  
codingmickey@DESKTOP-DC7H32B:~ $ sort boring
```

```
codingmickey@DESKTOP-DC7H32B:~ $ sort boring > abc
codingmickey@DESKTOP-DC7H32B:~ $ ls
codingmickey@DESKTOP-DC7H32B:~ $ cat abc
codingmickey@DESKTOP-DC7H32B:~ $ awk '{print $1 "\t"$2}'
boring
```

```
codingmickey@DESKTOP-DC7H32B:~ $ cat > boring
luffy
zoro
are
very
dumb!
codingmickey@DESKTOP-DC7H32B:~ $ ls
'OS PRACITCALs'  boring  hiOS
codingmickey@DESKTOP-DC7H32B:~ $ cat boring
luffy
zoro
are
very
dumb!
codingmickey@DESKTOP-DC7H32B:~ $ sort boring
are
dumb!
luffy
very
zoro
codingmickey@DESKTOP-DC7H32B:~ $ sort boring > abc
codingmickey@DESKTOP-DC7H32B:~ $ ls
'OS PRACITCALs'  abc  boring  hiOS
codingmickey@DESKTOP-DC7H32B:~ $ cat abc
are
dumb!
luffy
very
zoro
codingmickey@DESKTOP-DC7H32B:~ $ awk '{print $1 "\t"$2}' boring
luffy
zoro
are
very
dumb!
```

Conclusion:

The Linux based operating systems have a wide variety of commands or system calls that can be invoked through the command line or shell, like bash, to perform system and functions. Linux provides a more open approach to its system calls compared to other operating systems based on the UNIX philosophy. Linux based systems are developed to be able to be used only from the command line using the terminals without the need of a GUI. Hence the commands present cater to every aspect of the system from daily use to system diagnostics.