



Shree Rahul Education Society's (Regd.)

SHREE L. R. TIWARI COLLEGE OF ENGINEERING

(Approved by AICTE & DTE, Maharashtra State & Affiliated to University of Mumbai)
NAAC Accredited, NBA Accredited Program, ISO 9001:2015 Certified | DTE Code No. : 3423
Minority Status (Hindi Linguistic)

Experiment No. 2

Aim: Write Shell Scripts and Execute them in Linux.

Theory:

Write shell scripts to do the following:

- a. Display OS version, release number, kernel version ANSWER: -

- To display OS version and kernel version:

```
~ $ cat /etc/os-release
```

- To display release number: -

```
~ $ lsb_release -a
```

- b. Display top 10 processes in descending order ANSWER: -

- First, we open the vi editor by putting the command:

```
~$ vim Newtest3.sh
```

- Then you enter the following code in the vi editor:

```
- #!/bin/sh
```

```
echo " Top 10 processes in descending order are as follows";
```

```
ps aux | head -n 11
```

- For displaying the output in the terminal, we put the following command: -

```
~$ bash Newtest3.sh
```

- c. Display processes with highest memory usage. ANSWER: -



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-
- First, we open the vi editor by putting the command:

```
~$ vim Newtest2.sh
```

- Then you enter the following code in the vi editor:
 - #!/bin/sh
 - echo "processes with highest memory usage are as follows";



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`ps -eo pid, ppid, cmd, %mem, %cpu --sort=-%mem | head`

- For displaying the output in the terminal, we put the following command: -

`~$ bash Newtest2.sh`

d. Display current logged in user and log name. ANSWER: -

- First, we open the vi editor by putting the command: -

`~$ vim Newtest4.sh`

- Then you enter the following code in the vi editor:

```
- #!/bin/sh
echo " Logged in User";
who -u
echo "No of logged in
users"; who -u | wc -l
```

- For displaying the output in the terminal, we put the following command: -

`~$ bash Newtest4.sh`

e. Display current shell, home directory, operating system type, current path setting, current working directory. ANSWER: -

- First, we open the vi editor by putting the command:

`~$ vim newtest.sh`

- Then you enter the following code in the vi editor:

```
- #!/bin/sh
```



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echo " Current Home Directory is:";
whoami



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```
echo " Current Working Directory is:";
```

```
pwd
```

```
echo "Operating System
```

```
Type:"; uname
```

```
echo "Release no";
```

```
uname -a
```

- For displaying the output in the terminal, we put the following command: -
~\$ bash newtest.sh

Output:

a)

```
nachiketa@nachiketa-VirtualBox: ~  
nachiketa@nachiketa-VirtualBox:~$ cat /etc/os-release  
NAME="Ubuntu"  
VERSION="20.04.2 LTS (Focal Fossa)"  
ID=ubuntu  
ID_LIKE=debian  
PRETTY_NAME="Ubuntu 20.04.2 LTS"  
VERSION_ID="20.04"  
HOME_URL="https://www.ubuntu.com/"  
SUPPORT_URL="https://help.ubuntu.com/"  
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"  
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"  
VERSION_CODENAME=focal  
UBUNTU_CODENAME=focal  
nachiketa@nachiketa-VirtualBox:~$ lsb_release -a  
No LSB modules are available.  
Distributor ID: Ubuntu  
Description:   Ubuntu 20.04.2 LTS  
Release:       20.04  
Codename:      focal  
nachiketa@nachiketa-VirtualBox:~$
```




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b)

```
nachiketa@nachiketa-VirtualBox: ~/Desktop/OSpracs/Prac2
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ vim test.sh
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ bash test.sh
Top 10 processes in descending order are as follows
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.3 167608 11420 ?        Ss   22:00   0:01 /sbin/init splash
root         2  0.0  0.0      0     0 ?        S    22:00   0:00 [kthreadd]
root         3  0.0  0.0      0     0 ?        I<   22:00   0:00 [rcu_gp]
root         4  0.0  0.0      0     0 ?        I<   22:00   0:00 [rcu_par_gp]
root         6  0.0  0.0      0     0 ?        I<   22:00   0:00 [kworker/0:0H-kblockd]
root         9  0.0  0.0      0     0 ?        I<   22:00   0:00 [mm_percpu_wq]
root        10  0.0  0.0      0     0 ?        S    22:00   0:00 [ksoftirqd/0]
root        11  0.0  0.0      0     0 ?        I    22:00   0:00 [rcu_sched]
root        12  0.0  0.0      0     0 ?        S    22:00   0:00 [migration/0]
root        13  0.0  0.0      0     0 ?        S    22:00   0:00 [idle_inject/0]
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$
```

c)

```
nachiketa@nachiketa-VirtualBox: ~/Desktop/OSpracs/Prac2
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ vim test1.sh
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ bash test1.sh
test1.sh: line 1: !/bin/sh: No such file or directory
processes with highest memory usage are as follows
  PID   PPID  CMD                                %MEM %CPU
  1251   932   /usr/bin/gnome-shell              12.1  3.4
   949   947   /usr/lib/xorg/Xorg vt2 -dis       2.5   1.2
  2707   932   /usr/bin/nautilus --gapplic       2.3   1.1
  1430  1237   /usr/libexec/evolution-data       1.9   0.0
  2491   932   /usr/bin/gnome-calendar --g       1.9   0.0
  3060   932   /usr/libexec/gnome-terminal       1.6   1.0
  2496   932   /usr/bin/seahorse --gapplic       1.4   0.0
  1008   932   /usr/libexec/goa-daemon           1.1   0.0
  3092   932   /usr/libexec/tracker-extrac       1.1   1.8
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$
```



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d)

```
nachiketa@nachiketa-VirtualBox: ~/Desktop/OSpracs/Prac2
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ vim test2.sh
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ bash test2.sh
Logged In User
nachiketa :0          2021-03-18 22:01  ?          947 (:0)
No of logged in users
1
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$
```

```
nachiketa@nachiketa-VirtualBox: ~/Desktop/OSpracs/Prac2
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ vim test3.sh
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$ bash test3.sh
Current Home Directory is :
nachiketa
Current Working Directory is :
/home/nachiketa/Desktop/OSpracs/Prac2
Operating System Type :
Linux
Release no
Linux nachiketa-VirtualBox 5.8.0-45-generic #51-20.04.1-Ubuntu SMP Tue Feb 23 13
:46:31 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
nachiketa@nachiketa-VirtualBox:~/Desktop/OSpracs/Prac2$
```

e)

Outcome: Demonstrated basic Operating system Commands, Shell scripts, System Calls and API w.r.t. Linux.