EX. No : 03 WRITE SHELL SCRIPT TO SHOW
DATE : 06.02.23 VARIOUS SYSTEM CONFIGURATION LIKE

currently logged user and login name.
current shell
Home directory
operating system type
current path setting
current working directory
Number of users currently logged in.

Shell Script file

exp3.sh

```
echo "currently logged user"
who
echo "current login name"
users
echo "current shell"
echo $ SHELL
echo "Home directory"
echo $ HOME
echo "operating system type"
uname
echo "current path setting"
echo $ PATH
echo "current working directory"
pwd
echo "Number of user currently
                logged in"
users | wc -w
```

output :

bash exp3.sh

currently logged user

student :0 2023-02-07 08:53 (:0)

current login name

student

current shell

/bin/bash

Home directory

/home/student

operating system type

LINUX

current path setting

/usr/local/sbin:/local/bin:/usr/sbin:/usr/bin:/usr/game:/usr/local/games:/snap/bin of usr/local/ans-all/now-2.35/bin:/usr/local/ns-all/now-2.35/tk(8-5.10) unix/usr/local/ns-all/none-2.35/tk 8-5.10/unix:/ns-2.35:/nam-1.15.

current working directory :

/home/student/20CSR132

Number of users currently logged in 1.

RESULT :

Thus the shell script to show various configurations of a system has been executed successfully.

Output

bash exp1.sh

1) OS and version release number, kernel version.

Linux ITP-CC3-38 5.11.0-43-generic #47~20.04.2-Ubuntu SMP Mon Dec 13 11:06:56 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux.

2) All available shells

valid login shells.

/bin/sh

/bin/bash

/usr/bin/bash

/bin/rbash

/bin/dash

/usr/bin/dash

3) computer CPU info like processor type, speed etc.

Architecture : x86_64

CPU op-modes : 32-bit, 64 bit

Byte order : Little Endian

Address size : 39 bits physical, 48 bits virtual.

CPU(s) : 16

Vendor ID : GenuineIntel

CPU family : 6

Model : 165

Model Name : Intel(R) Core(TM) i7-10700 CPU @ 2.90GHz

Ex. No: 04 Write Shell script to show various system configuration

Date: 20/02/23

OS and version, release number, kernel version.

All available shells.

computer CPU information like processor type, speed etc..

Memory information

Harddisk information like, size of hard disk, cache memory, model etc.

File system (mounted).

Shell script file

exp4.sh

```
echo " 1> OS and version, release number, kernel number "
uname -a
echo " 2> all available shells "
cat /etc/shells
echo " 3 > computer CPU info like processor type, speed etc "
cat /proc/cpuinfo (or)
lscpu
echo " 4> Memory Information "
cat /proc/meminfo
echo " 5 > Hard disk info like size of hard disk, cache memory model etc "
sudo lshw -class disk (or)
hwinfo --disk for
```

stepping : 5
CPU MHz : 2900.0000
CPU Max MHz : 4800.0000
CPU Min MHz : 800.0000

4) Memory Information
Mem Total : 7915920 kB
Mem Free : 4514028 kB
Mem Available : 6120088 kB
Buffers : 81560 kB
cached : 1947964 kB
Active : 890004 kB
Inactive : 1969404

5) Hard disk information like size of hard disk cache memory, model etc.
[sudo] password for student :
* namespace
description : NVMe namespace
physical id : 1
logical name : /dev/nvme0n1
size : 476GiB (512GB)
capabilities : gpt-1.00 partitioned partitioned:gpt
configuration : guid=5f8706bf-fcb9-4c19-b8c6-7de0e64d1f7e logical sector size=512 sectorsize=512.

6) File System (Mounted)
sysfs /sys sysfs rw, nosuid, nodev, noexec, relatime 00 proc /proc proc rw, nosuid, nodev, noexec, relatime 00 udev /dev devtmpfs rw, nosuid, noexec, relatime, size=3925240 nr_inodes=981306, mode=755, inode64 00

```
echo "file system (Mounted )"
cat /proc/mounts
```

6/12/23

Result

Thus the shell script to show various system configuration have been executed successfully.

Ex.No: 05 Perform simple text processing using AWK

Date : 06.03.23

File → exp5.txt

Rollno	Name	Department	CGPA	Age	Year
1	Arun	IT	9.2	20	3
2	Aravind	CSE	9.4	18	1
3	Ram	CSE	9.6	20	3
4	Rithika	IT	9.7	20	3
5	Siva	ECE	9	19	2
6	Ravi	ECE	9.1	21	4
7	Gokul	ECE	8.9	18	1
8	Sudha	EEE	8.7	21	4
9	Riya	CSE	9.4	20	3
10	Sam	IT	9.7	18	1

awk file → exp5p.awk

1) Print the details of all the students

{print}

output

>> awk -f exp5p.awk exp5.txt [command]

Rollno	Name	Department	CGPA	Age	Year
1	Arun	IT	9.2	20	3
2	Aravind	CSE	9.4	18	1
3	Ram	CSE	9.6	20	3
4	Rithika	IT	9.7	20	3
5	Siva	ECE	9	19	2
6	Ravi	ECE	9.1	21	4
7	Gokul	ECE	8.9	18	1
8	Sudha	EEE	8.7	21	4
9	Riya	CSE	9.4	20	3
10	Sam	IT	9.7	18	1

2) print the student name and department alone

{ print $2 "\t" $3 }

output

Name	Department
Arun	IT
Aravind	CSE
Ram	CSE
Rithika	IT
Siva	ECE
Ravi	EEE
Gokul	ECE
Sudha	EEE
Riya	CSE
Sam	IT

3) print the students details who are belonging to CSE dept.

{ if ($3 == "CSE") print }

output

2	Aravind	CSE	9.4	18	1
3	Ram	CSE	9.6	20	3
9	Riya	CSE	9.1	20	3

4. print the student details who are belonging to 2nd year

{ if ($6 == 2) print }

output

5	siva	ECE	9	19	2

5. print the student details who CGPA is > 9.3

{if ($4 >= 9.3) print}

output

RollNo	Name	Department	CGPA	Age	Year
2	Aravind	CSE	9.9	18	1
3	Ram	CSE	9.6	20	3
4	Rithika	IT	9.7	20	3
9	Riya	CSE	9.4	20	3
10	Sam	IT	9.7	18	1

6. Print the student name who are belonging to IT department and in 3rd year.

{if ($3 == "IT" && $6 == 3) print $2}

output

Arun
Rithika

7. Print the student details who are belonging to CSE or IT department

{if ($3 == "IT" || $3 == 'CSE') print}

output

1	Arun	IT	9.2	20	3
2	Aravind	CSE	9.4	18	1
3	Ram	CSE	9.6	20	3
4	Rithika	IT	9.7	20	3
9	Riya	CSE	9.4	20	3
10	Sam	IT	9.7	18	1

8. count the number of students in the input file

```
BEGIN { c = 0 }
{ c = c + 1 }
END { print "count is " c - 1 }
```

output

count is 10

9. Display the number of students in ECE dept.

```
BEGIN { c = 0 }
{ if ( $3 == "ECE" ) { c = c + 1 } }
END { print "Number of students in
    ECE Department is " c }
```

output

Number of student in ECE dept is 2

10. Find the sum of CGPA of all students

```
BEGIN { sum = 0 }
{ sum = sum + $4 }
END { print "Sum of CGPA is " sum }
```

Output

Sum of CGPA is 92.7

11. Find the average CGPA of CSE students

```
BEGIN { sum = 0 ; c = 0 }
{ if ( $3 == "CSE" )
  {
    sum = sum + $4
    c = c+1
  }
}
END { print "Average CGPA of CSE
      students is" sum /c }
```

Output

Average CGPA of CSE students is
9.4667

Result

Thus, the simple text processing using awk were performed and executed successfully.

4/9/23