Experiment 08

Aim: Bash program in shell scripting.

1) Write a shell script to check whether a given number is even or odd.

```
mkdir command_aatif
cd command_aatif

vi evenorodd.sh

#!/bin/bash
read -p "Enter a number: " num
if [ $((num % 2)) -eq 0 ]
then
   echo "Your number is even"
else
   echo "Your number is odd"
fi

:wq

chmod +x evenorodd.sh
./evenorodd.sh
```

```
localhost:~# mkdir command_aatif
localhost:~# cd command_aatif
localhost:~/command_aatif# vi evenorodd.sh
#!/bin/bash
read -p "Enter a number: " num
if [ $((num % 2)) -eq 0 ]
then
    echo "Your number is even"
else
    echo "Your number is odd"
fi
~
~
~
:wq
localhost:~/command_aatif# chmod +x evenorodd.sh
localhost:~/command_aatif# ./evenorodd.sh
Enter a number: 4
Your number is even
```

2)Write a shell script to calculate the factorial of a given number.

```
vi factorial.sh

#!/bin/bash
read -p "Enter a number: " num
factorial=1
for (( i=1; i<=num; i++ ))
do
   factorial=$((factorial * i))
done
echo "Factorial of $num is $factorial"

:wq

chmod +x factorial.sh
./factorial.sh
```

```
localhost:~/command_aatif# vi factorial.sh
#!/bin/bash
read -p "Enter a number: " num
factorial=1
for (( i=1; i<=num; i++ ))
do
    factorial=$((factorial * i))
done
echo "Factorial of $num is $factorial"
~
~
~
:wq
localhost:~/command_aatif# chmod +x factorial.sh
localhost:~/command_aatif# ./factorial.sh
Enter a number: 5
Factorial of 5 is 120
```

3)Write a shell script to create directories for different subjects with subdirectories for "Notes" and "Examresults".

vi directories.sh

```
#!/bin/bash
mkdir -p {Maths,English}/
{Notes,Examresults}

:wq

chmod +x directories.sh
./directories.sh

ls -R Maths English
```

```
localhost:~/command_aatif# vi directories.sh
#!/bin/bash
mkdir -p {Maths,English}/{Notes,Examresults}

~
~
~
:wq
localhost:~/command_aatif# chmod +x directories.sh
localhost:~/command_aatif# ./directories.sh
localhost:~/command_aatif# ls -R Maths English
English:
Examresults  Notes

English/Examresults:

English/Notes:

Maths:
Examresults  Notes

Maths/Examresults:

Maths/Notes:
```

4) Write a shell script to read and display the contents of a file.

vi readfile.sh
#!/bin/bash
myvalue=$(cat mysamplefile.txt)
echo "$myvalue"
:wq
chmod +x readfile.sh
echo "Hello, this is a sample file!" > mysamplefile.txt./readfile.sh
Hello, this is a sample file!

```
localhost:~/command aatif# vi readfile.sh
#!/bin/bash
myvalue=$(cat mysamplefile.txt)
echo "$myvalue"
~
~
~
:wq
localhost:~/command_aatif# chmod +x readfiles.sh
chmod: readfiles.sh: No such file or directory
localhost:~/command_aatif# chmod +x readfile.sh
localhost:~/command_aatif# echo "Hello, this is a sample file!" > mysamplefile.txt
localhost:~/command_aatif# ./readfile.sh
Hello, this is a sample file!
```

5) Write a shell script to read a file line by line and print each line with its corresponding line number.

```
vi printfiles.sh
#!/bin/bash
myfile="car.txt"
i=1
while read -r line; do
    echo "$i: $line"
    i=$((i+1))
done < "$myfile"
:wq
chmod +x printfiles.sh
echo -e  "Toyota\nHonda\nBMW
\nMercedes" > car.txt
./printfiles.sh
```

```
localhost:~/command_aatif# vi printfiles.sh
#!/bin/bash
myfile="car.txt"
i=1
while read -r line; do
    echo "$i: $line"
    i=$((i+1))
done < "$myfile"
~
:wq
localhost:~/command_aatif# chmod +x printfiles.sh
localhost:~/command_aatif# echo -e "Toyota\nHonda\nBMW\nMercedes" > car.txt
localhost:~/command_aatif# ./printfiles.sh
1: Toyota
2: Honda
3: BMW
4: Mercedes
```

6) Write a shell script to display system information including date, uptime, memory usage, and network details.

```
vi system.sh

#!/bin/bash
echo "Date:"
date
echo
"Uptime:"
uptime
echo
"Memory
Usage:"
free -m
echo
"Network
Usage:"
ip a

:wq

chmod +x
system.sh

./system.sh
```

```
localhost:~/command_aatif# vi system.sh
#!/bin/bash
echo "Date:"
date
echo "Uptime:"
uptime
echo "Memory Usage:"
free -m
echo "Network Usage:"
ip a
~
~
~
:wq
localhost:~/command_aatif# chmod +x system.sh
localhost:~/command_aatif# ./system.sh
Date:
Mon Mar 10 14:02:42 UTC 2025
Uptime:
 14:02:42 up 24 min,  load average: 0.03, 0.02, 0.00
Memory Usage:
               total        used        free      shared  buff/cache   available
Mem:             119           4         113           0           1         112
Swap:              0           0           0
Network Usage:
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UNKNOWN qlen 1000
    link/ether 02:b6:82:c4:cb:46 brd ff:ff:ff:ff:ff:ff
```

7) Write a shell script to find and replace a word in a given string.

```
vi system.sh
#!/bin/bash
first="I drive BMW and Volvo"
second="Audi"
echo "${first/BMW/$second}"

:wq

chmod +x system.sh
./system.sh
```

```
localhost:~/command_aatif# vi findreplace.sh
#!/bin/bash
first="I drive BMW and Volvo"
second="Audi"
echo "${first/BMW/$second}"
~
~
~
:wq
localhost:~/command_aatif# chmod +x findreplace.sh
localhost:~/command_aatif# ./findreplace.sh

I drive Audi and Volvo
```