Name : Ayushi Bindal **Roll no : 1/23/SET/BCS/341** **Class & Section : 4CSF2**

Experiment – 8

Aim: Bash program in shell scripting.

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

```
mkdir Ayushi
cd Ayushi

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 711 evenorodd.sh
./evenorodd.sh
```

```
localhost:~# mkdir Ayushi
localhost:~# cd Ayushi
localhost:~/Ayushi# 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
localhost:~/Ayushi# chmod 711 evenorodd.sh
localhost:~/Ayushi# ./evenorodd.sh
Enter a number: 5
Your number is odd
```

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 711 factorial.sh
./factorial.sh
```

```
localhost:~# 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: $factorial"

localhost:~# chmod 711 factorial.sh
localhost:~# ./factorial.sh
Enter a number: 6
Factorial: 720
localhost:~#
```

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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 711 directories.sh
./directories.sh
ls -R
```

```
localhost:~/Ayushi# vi directories.sh
#!/bin/bash

mkdir -p {Maths, English}/{Notes, Examresults}
localhost:~/Ayushi# chmod 711 directories.sh
localhost:~/Ayushi# ./directories.sh
localhost:~/Ayushi# ls -R
.:
English}        Examresults}    directories.sh  {Maths,

./English}:
{Notes,

./English}/{Notes,:

./Examresults}:

./{Maths,:
localhost:~/Ayushi#
```

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

vi readfiles.sh
```
#!/bin/bash
myvalue=$(cat mysamplefile.txt)
echo "$myvalue"
:wq
cat > mysamplefile.txt
Hello, I am Ayushi
Studying Btech
chmod 711 readfiles.sh
./readfiles.sh
```

```
localhost:~# vi readfiles.sh
#!/bin/bash
myvalue=$(cat mysamplefile.txt)
echo "$myvalue"
localhost:~# cat > mysamplefile.txt
Hello, I am Ayushi
studying Btech
localhost:~# chmod 711 readfiles.sh
localhost:~# ./readfiles.sh
Hello, I am Ayushi
studying Btech
localhost:~#
```

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"
cat > car.txt
Car is a four wheeler vehicle.
chmod 711 printfiles.sh
./printfiles.sh
```

```
localhost:~# vi printfiles.sh
#!/bin/bash
myfile="car.txt"
i=1
while read lines; do
    echo "$i: $lines"
    i=$((i+1))
done < "$myfile"
localhost:~# cat > car.txt
Car is a four wheeler vehicle.
localhost:~# chmod 711 printfiles.sh
localhost:~# ./printfiles.sh
1: Car is a four wheeler vehicle.
localhost:~#
```

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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 711 system.sh
./system.sh

```
localhost:~/Ayushi# vi system.sh
#!/bin/bash
echo "Date"
date
echo "Uptime"
uptime
echo "Memory usage"
free -m
echo "Network usage"
ip a
```

```
localhost:~/Ayushi# chmod 711 system.sh
localhost:~/Ayushi# ./system.sh
Date
Sun Mar 16 19:28:28 UTC 2025
Uptime
 19:28:28 up 14 min,  load average: 0.00, 0.00, 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 02:26:ce:e6:12:fc brd ff:ff:ff:ff:ff:ff
```

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

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

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

```
localhost:~/Ayushi# chmod +x findreplace.sh
localhost:~/Ayushi# ./findreplace.sh
I drive Audi and Volvo
```