Practical –4 case loop, while loop , for loop

Case Loop

- The statement matches an expression for more than one alternative and uses multiway branching.
- Case also handles string test.

Syntax :

```
    case expression in
      pattern 1 ) cmd1 ;;
      pattern 2) cmd2 ;;
   esac
```

e.g

```
#! /bin/bash
echo "  Manu "
echo " 1 : listing files "
echo " 2 : process of user "
echo " 3 : users of the system "
echo " 4 : quit "

echo "enter your choice"
read ch

case $ch in
 1) ls -l ;;
 2) ps  ;;
 3) who ;;
 4) exit ;;
 *) echo "invalid option"
Esac
```

e.g

```
#! /bin/bash

echo "enter any single character"
read ch
case $ch in
 [a-z] ) echo "lower case" ;;
 [A-Z] ) echo "upper case" ;;
 [0-9] ) echo "digit"  ;;
  *) echo "special symbol "
esac
```

- While Loop

```
Syntax
while condition is true
                do
                     commands
               done
```

e.g

```
#!/bin/ash
# while loop testing

val=1
while [ $val -le 10 ]
  do
  echo "val = $val"
   val=`expr $val + 1`
 done
```

e.g

```
#! /bin/bash

choice='y'
while [ "$choice" = "y" ]
do
         echo "enter any single character"
         read ch
         case $ch in
           [a-z] ) echo "lower case" ;;
           [A-Z] ) echo "upper case" ;;
           [0-9] ) echo "digit"  ;;
         *) echo "special symbol "

        esac

     echo "do you want to continue?"
     read choice

 case $choice in
      y|Y ) ans=y ;;
      n|N ) ans=n ;;
   esac

done
```

For Loop

For loop doesn’t test the condition, but it uses the list instead of it.
Syntax

```
        for variable in list
         do
           commands
        done
```

e.g

```
#! /bin/bash
for var in "$@" ; do
    echo "$var"
done
```

output : sh fortest2.sh 1 2 hello

```
1
2
hello
```

```
#! /bin/bash
# testing a for loop
for file in *.sh
 do

   ls -l $file

done

 echo "listing is complete”
```

e.g

```
#! /bin/bash
# testing a for loop assuming numeric arguments
for i in $@
 do
   echo $i
done
```

e.g Total of numbers passed in command line argument

```
#! /bin/bash
sum=0
if [ $# -le 0 ]
  then
     echo "enter the number in command line arguments"
  exit 1
fi

for no in $@
 do
      sum=`expr $sum + $no`
 done
echo "total is $sum"
```

Exercise

1	Write a menu driven script which takes the choice from user and perform the arithmetic operation based on choice and display the result. 1) addition 2) subtraction 3) multiplication 4)division 5)exit (use case loop)
2	Write a shell script which take number N from user input and print total of first N elements. E.g N =5 total=1+2+3+4+5
3	Write a shell script which take number N from user input and print a number in N to 1 format. E.g N = 5 then print 5 4 3 2 1
4	Write a shell script which take numbers in command line argument and make a multiplication of all numbers. (use for loop)
5	Write a shell script which accept number from the command line and find the maximum number from them (use for loop)
6	Write a shell script which accept numbers from command line arguments. And input x from user. And check whether number x is present in command line arguments or not.
7	Write a menu driven shell script which accept the choice from user and perform the following task based on choice a) display the date in Monday 18 April 2021 format b) create a new file in current directory c) count the length of longest line of any file. d) rename the file1 with newfile1 e) move any file to its parent directory f) display the current working directory path and home directory g) exit other than that display proper message of invalid choice.
8	Write a shell script which accept N from the user and find out the factorial of given number. Do necessary validation before finding factorial.