Practical – 3 Shell Script –(conditional loop)

- If loop

– The if statement makes two – way decisions depending upon the fulfillment of the conditions.

if [expression 1] **then** Statement(s) to be executed **else** Statement(s) to be executed **fi**	**if** [expression 1] **then** Statement(s) to be executed **fi**	**if** [expression 1] **then** Statement(s) to be executed **elif** [expression 2] **then** Statement(s) to be executed **elif** [expression 3] **then** Statement(s) to be executed **else** Statement(s) to be executed **fi**

Expression can be command, numeric comparison, string comparison or checking for the file attribute

Numeric comparison operators used in expression

Operators	Meaning
-eq	Equal to
-ne	Not equal to
-gt	Greater than
-ge	Greater than equal to
-lt	Less than
-le	Less than equal to

e.g pass filename in command line argument if not passed it needs to be take from the user input.

```
#! /bin/bash

# if else loop testing

if [ $# -ne 1 ]
  then
  echo "enter file name"
  read fname
  cat $fname
else
  cat $1
fi
```

output :

```
student@mcastaff:~/script$ sh iftest.sh r1.sh
#! /bin/bash
echo "Enter the value"
read val
echo $val
s
tudent@mcastaff:~/script$ sh iftest.sh
enter file name
r1.sh
#! /bin/bash
echo "Enter the value"
read val
echo $val
```

- IF – ELSE LADER

  e.g finding maximum from two number.

```
#! /bin/bash

 if [ $# -lt 2 ]
 then
   echo "Enter two number"
     read x
     read y
 else
       x=$1
        y=$2

  fi

if [ $x -gt $y ]
 then
       echo "$x is greater value"
```

```
elif [ $y -gt $x ]
  then
       echo "$y is greater value"
else
       echo "both are same"

fi
```

output :

```
student@mcastaff:~/script$ sh iftest1.sh 45 63
63 is greater value
student@mcastaff:~/script$ sh iftest1.sh 45
Enter two number
43
45
45 is greater value
```

- **String comparison**
  test can be used to compare strings with another set of operators.

Test	True if
S1=s2	If both string is equal
S1!=s2	If both are not equal
-n str	String str is not a null string
-z str	String str is null string

e.g String comparison example

```
#! /bin/bash
# string comparison
echo "enter string1"
read str1
echo "enter string2"
read str2

if [ “$str1” = “$str2” ] ; then
       echo "both strings are same"
else
       echo "both strings are not same"
fi
```

- File comparison

	Test Meaning
-s file	file Non empty file(size > 0)
-f file	file Is exist or normal file and not a directory
-d file	file Is Directory ,not a file
-w file	file Is writeable file
-r file	file Is read-only file
-x file	file Is file is executable
-e file	File exists (korn or bash shell only)

```
#! /bin/bash
#filetest1.sh
#displaying file content of existing fille
echo "enter existing file name "
read fname

if [ ! -e $fname ]       # -f also can be used
then
   echo "File is not available"
  exit(0)
fi
echo "content of the file is "
echo  "-----------------"

cat $fname
```

output ::

```
$sh filetest1.sh
enter existing file name
test
File is not available
```

- AND and OR operator

More than one condition can be tested in if expression.
-a operator is used for logical AND in expression statement wit if loop
-o operator is used for logical OR in expression statement with if loop

e.g

```
#! /bin/bash
echo "Enter the age between 21 to 60"
read age
if [ $age -lt 21 -o $age -gt 60 ]
   then
        echo "age out of bound"
```

```
elif [ $age -ge 21 -a $age -le 30 ]
then
      echo "age is in range to 21 to 30"
elif [ $age -ge 31 -a $age -le 40 ]
then
      echo "age is in range 31 to 40 "
elif [ $age -ge 41 -a $age -le 50 ]
then
      echo "age is in range 41 to 50 "
else
    echo "age is in range 51 to 60"
fi
```

```
Output : sh agetest.sh
Enter the age between 21 to 60
55
age is in range 51 to 60
student@mcastaff:~/script$ sh agetest.sh
Enter the age between 21 to 60
16
age out of bound
```

e.g Script for comparing two string.

```
#! bin/bash

#Script for comparing two string.

#strcmptest.sh
echo "enter the string"
read s1
echo "enter the string"
read s2

if [ -z "$s1" -o -z "$s2" ] ; then
    echo "String is empty"
     exit 1    //exit from program/script

elif [ "$s1" != "$s2" ] ; then
    echo "both the string are not equal"
else
    echo "$s1 and $s2 is are equal"

fi
```

Exercise

1	Write a shell script which takes filename as argument , if argument is not pass take input from the user and display the total words of given filename.
2	Write a shell script to find a minimum from 3 number.
3	Write a shell script which takes file/directory name form user input and check whether it is file or directory. Display proper message
4	Write a shell scripts which enter the basic salary and calculate the bonus on given condition. If salary is less than 5000 , bonus is 5%. If salary is between 5001 to 10,000 , bonus is 10%, If salary is between 10,001 to 15000 , bonus is 15% if salary about 15000 bonus is 20%
5	Write a shell script which takes two number and choice from user. If choice =1 then perform addition of two number, choice=2 then subtraction of two number , choice =3 then multiplication of two number , choice = 4 then division of two number. Display proper message for the invalid choice.
6	Write a shell script which takes filename as arguments. If file is not exists display proper message. If file is exists then display its attributes, display total number of lines of file. And copy the file with different name.
7	Write a shell script which takes fruitname form user. Check string is empty of not. If fruit is banana or mango print message " Tropical fruits" If fruit is grape or watermelon print message "juicy fruits" IF fruits is orange or pineapple print message "citrus fruits" . if fruits is not from all given then print message "berry fruits".