# Q1. Commands - 5 marks

**1. Write a shell program to display a list of users currently logged in.**

```
#!/bin/sh
echo "No of users logged in: "
who | wc -l
```

```
delta24@ITA2-39:~/Desktop/Shell$ nano p1.sh
delta24@ITA2-39:~/Desktop/Shell$ chmod +x p1.sh
delta24@ITA2-39:~/Desktop/Shell$ ./p1.sh
No of users logged in:
2
delta24@ITA2-39:~/Desktop/Shell$
```

**2. Write a shell program to perform arithmetic operations.**

```
#!/bin/sh
echo -n "Enter 1st number: "
read num1
echo -n "Enter 2nd number: "
read num2
echo "Addition result is: `expr $num1 + $num2`"
echo "Subtraction result is: `expr $num1 - $num2`"
echo "Multiplication result is: `expr $num1 \* $num2`"
echo "Division result is: `expr $num1 / $num2`"
echo "Modulos result is: `expr $num1 % $num2`"
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ nano p2.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ chmod +x p2.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ ./p2.sh
Enter 1st number: 9
Enter 2nd number: 2
Addition result is: 11
Subtraction result is: 7
Multiplication result is: 18
Division result is: 4
Modulos result is: 1
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$
```

**3. Write a grep script to find the number of matched characters, words and lines in a file.**

```
#!/bin/sh
echo "The no. of matched characters in a file is: "
grep -o "echo" New.txt | wc -c
echo "The number of matched words in a file is: "
grep -o "echo" New.txt |wc -w
echo "The number of matched lines in a file: "
grep -o "Hello" New.txt | wc -l
```

```
delta24@ITA2-39:~/Desktop/Shell/10.a$ nano 1.sh
delta24@ITA2-39:~/Desktop/Shell/10.a$ chmod +x 1.sh
delta24@ITA2-39:~/Desktop/Shell/10.a$ ./1.sh
The no. of matched characters in a file is:
20
The number of matched words in a file is:
4
The number of matched lines in a file:
2
```

**4. Write a grep script to find the number of words character, words and lines in a file.**

```
#!/bin/sh
echo "The no. of characters in a file is: "
grep "" New.txt | wc -c
echo "The number of words in a file is: "
grep "" New.txt |wc -w
```

```
echo "The number of lines in a file: "
grep "" New.txt | wc -l
```

```
delta24@ITA2-39:~/Desktop/Shell/10.a$ nano 2.sh
delta24@ITA2-39:~/Desktop/Shell/10.a$ chmod +x 2.sh
delta24@ITA2-39:~/Desktop/Shell/10.a$ ./2.sh
The no. of characters in a file is:
99
The number of words in a file is:
18
The number of lines in a file:
3
```

**5. Write an interactive perl script to convert temperature from Centigrade to Fahrenheit.**

```
#!/usr/bin/perl
print("Enter the temperature in Centigrade: ");
$centigrade=<STDIN>;
$fahrenheit=$centigrade * 9/5 + 32;
print "The temperature in fahrenheit is: $fahrenheit\n";
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/10.c$ nano 2.pl
delta24@dms24081999-ubuntu-l:~/Desktop/shell/10.c$ chmod +x 2.pl
delta24@dms24081999-ubuntu-l:~/Desktop/shell/10.c$ perl 2.pl
Enter the temperature in Centigrade: 10
The temperature in fahrenheit is: 50
delta24@dms24081999-ubuntu-l:~/Desktop/shell/10.c$
```

**6. Write a shell program to check whether the given number is even or odd.**

```
#!/bin/sh
echo -n "Enter number: "
read n
rem=$(( $n % 2 ))
if [ $rem -eq 0 ]
then
   echo "$n is an even number."
else
   echo "$n is an odd number."
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ nano 5p1.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ chmod +x 5p1.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ ./5p1.sh
Enter number: 6
6 is an even number.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ ./5p1.sh
Enter number: 3
3 is an odd number.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$
```

**7. Write a shell program to copy contents of one file to another.**

```
#!/bin/sh
echo -n "Enter file name: "
read f
echo -n "Enter new file name: "
read nf
if test -f $f
then
   cat $f >> $nf
else
   echo "File path is invlid."
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ cat /home/delta24/Desktop/shell/practicals/file.txt
Hello
How are you?

delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 7.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 7.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./7.sh
Enter file name: /home/delta24/Desktop/shell/practicals/file.txt
Enter new file name: /home/delta24/Desktop/shell/f.txt
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ cat /home/delta24/Desktop/shell/f.txt
Hello
How are you?

delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**8. Write a perl script to compute the power of a given number.**

```
#!/usr/bin/perl
print "Enter a number: ";
$num=<STDIN>;
print "Enter the power of the number: ";
$p=<STDIN>;
$res=$num**$p;
printf("%i raise to %i is: %i\n",$num,$p,$res);
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ nano 5p2.pl
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ chmod +x 5p2.pl
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$ ./5p2.pl
Enter a number: 2
Enter the power of the number: 4
2 raise to 4 is: 16
delta24@dms24081999-ubuntu-l:~/Desktop/shell/7$
```

**9. Write an interactive shell script to convert distance from meters to kilometers, inches and feet.**

```
#!/bin/sh
echo -n "Enter distance (in meters) : "
read meter
km=$(echo "scale=3; $meter / 1000" | bc)
feet=$(echo $meter \* 3.2808 | bc)
inches=$(echo $feet \* 12 | bc)
echo "in kilometers is: $km"
echo "in inches is: $inches"
echo "in feet is: $feet"
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p5.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p5.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p5.sh
Enter distance (in meters) : 5
in kilometers is: .005
in inches is: 196.8480
in feet is: 16.4040
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**10. Write a shell program to find whether the triangle is equilateral, isosceles or scalene.**

```
#!/bin/sh
echo -n "Enter 1st side of triangle: "
read x
echo -n "Enter 2nd side of triangle: "
read y
echo -n "Enter 3rd side of triangle: "
read z
if [ $x -eq $y -a $x -eq $z ]
then
   echo "Its an equilateral triangle."
```

```
elif [ $x -eq $y -o $x -eq $z -o $y -eq $z ]
then
   echo "Its an Isosceles triangle."
else
   echo "Its a Scalene triangle."
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p6.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p6.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p6.sh
Enter 1st side of triangle: 4
Enter 2nd side of triangle: 4
Enter 3rd side of triangle: 4
Its an equilateral triangle.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p6.sh
Enter 1st side of triangle: 4
Enter 2nd side of triangle: 4
Enter 3rd side of triangle: 3
Its an Isosceles triangle.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p6.sh
Enter 1st side of triangle: 4
Enter 2nd side of triangle: 3
Enter 3rd side of triangle: 6
Its a Scalene triangle.
```

**11. Write a shell program to generate multiplication table.**

```
#!/bin/sh
echo -n "Enter a number: "
read n
echo -n "Enter the range: "
read r
i=0
while [ $i -le $r ]
do
   echo "$n x $i = `expr $n \* $i`"
   i=`expr $i + 1`
done
```

```
delta24@ITA2-39:~/Desktop/Shell/8$ nano 4.sh
delta24@ITA2-39:~/Desktop/Shell/8$ chmod +x 4.sh
delta24@ITA2-39:~/Desktop/Shell/8$ ./4.sh
Enter a number: 9
Enter the range: 15
9 x 0 = 0
9 x 1 = 9
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 = 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
9 x 10 = 90
9 x 11 = 99
9 x 12 = 108
9 x 13 = 117
9 x 14 = 126
9 x 15 = 135
```

**12. Write a shell program to check whether number is divisible by 2 or not.**

```
#!/bin/sh
```

```
echo -n "Enter the number: "
read n
c=`expr $n % 2`
if [ $c -eq 0 ]
then
        echo "$n is divisible by 2"
else
        echo "$n is not divisible by 2"
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p7.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p7.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p7.sh
Enter the number: 7
7 is not divisible by 2
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p7.sh
Enter the number: 4
4 is divisible by 2
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**13. Write a shell program to check whether number is divisible by 5 or not.**

```
#!/bin/sh
echo -n "Enter the number: "
read n
c=`expr $n % 5`
if [ $c -eq 0 ]
then
        echo "$n is divisible by 5"
else
        echo "$n is not divisible by 5"
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p8.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p8.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p8.sh
Enter the number: 9
9 is not divisible by 5
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p8.sh
Enter the number: 10
10 is divisible by 5
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**14. Write a shell program to add three numbers entered by user.**

```
#!/bin/sh
echo -n "Enter 1st number: "
read a
echo -n "Enter 2nd number: "
read b
echo -n "Enter 3rd number: "
read c
sum=`expr $a + $b + $c`
echo "$a + $b + $c = $sum"
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p9.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p9.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p9.sh
Enter 1st number: 6
Enter 2nd number: 4
Enter 3rd number: 7
6 + 4 + 7 = 17
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**15. Write a shell program to find greater of two numbers entered by user.**

```
#!/bin/sh
echo -n "Enter first number: "
read first
echo -n "Enter second number: "
read sec
if [ $first -gt $sec ]
then
   echo "$first is the greatest number."
else
   echo "$sec is the greatest number."
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p9.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p9.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p9.sh
Enter 1st number: 6
Enter 2nd number: 4
Enter 3rd number: 7
6 + 4 + 7 = 17
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p10.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p10.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p10.sh
Enter first number: 4
Enter second number: 9
9 is the greatest number.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**16. Write a shell program to find smaller of two numbers entered by user.**

```
#!/bin/sh
echo -n "Enter first number: "
read first
echo -n "Enter second number: "
read sec
if [ $first -lt $sec ]
then
   echo "$first is the smallest number."
else
   echo "$sec is the smallest number."
fi
```

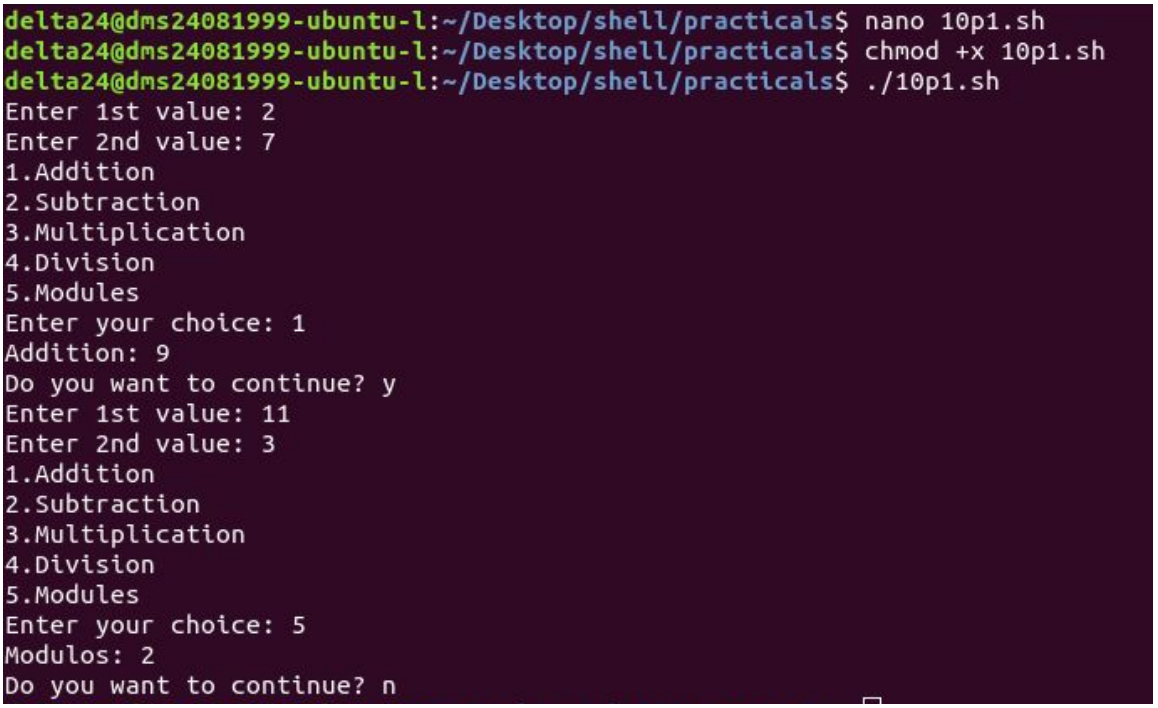
```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 5p11.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 5p11.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./5p11.sh
Enter first number: 4
Enter second number: 9
4 is the smallest number.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

## Q2. Shell script-10 marks

**1. Write a menu driven shell program to perform arithmetic operations.**

```
#!/bin/sh
i="y"
while [ $i = "y" ]
do
   echo -n "Enter 1st value: "
   read a
   echo -n "Enter 2nd value: "
```

```
    read b
    echo "1.Addition\n2.Subtraction\n3.Multiplication\n4.Division\n5.Modules"
    echo -n "Enter your choice: "
    read choice
    case $choice in
            1)echo "Addition: `expr $a + $b`";;
            2)echo "Suubtraction: `expr $a - $b)`";;
            3)echo "Multiplication: `expr $a \* $b)`";;
            4)echo "Division: `expr $a / $b`";;
            5)echo "Modulos: `expr $a % $b`";;
            *)echo "This is not a choice";;
    esac
    echo -n "Do you want to continue? "
    read i
done
```




**2. Write a shell program to search whether element is present in the list or not.**

```
#!/bin/sh
count=0
list="5 10 20 25 30"
echo "Enter number to be searched: "
read num
echo "Entered number is: $num"
for number in $list
do
    if [ $num -eq $number ]
    then
            echo "$num is present in list"
            count=1
    fi
done
if [ $count -eq 0 ]
then
    echo "$num is not present in list"

fi
```

```
delta24@ITA2-39:~/Desktop/Shell$ nano p3.sh
delta24@ITA2-39:~/Desktop/Shell$ chmod +x p3.sh
delta24@ITA2-39:~/Desktop/Shell$ ./p3.sh
Enter number to be searched:
20
Entered number is: 20
20 is present in list
delta24@ITA2-39:~/Desktop/Shell$ ./p3.sh
Enter number to be searched:
16
Entered number is: 16
16 is not present in list
```

**3. Write a shell script to perform various operations on given strings.**

```
#!/bin/sh
clear
i='y'
while [ $i = 'y' ]
do
   clear
   echo "Enter 1 for string compare."
   echo "Enter 2 for string concatenation."
   echo "Enter 3 for string length."
   echo "Enter 4 for EXIT."
   echo -n "Enter your choice: "
   read ch
   case $ch in
         1) echo -n "Enter 1st string: "
         read s1
         echo -n "Enter 2nd string: "
         read s2
         if [ $s1 = $s2 ]
         then
                  echo "Strings are equal!"
         else
                  echo "Strings are not equal!"
         fi;;
         2) echo -n "Enter 1st string: "
         read s1
         echo -n "Enter 2nd string: "
         read s2
         echo "$s1 $s2";;
         3) echo -n "Enter the string: "
         read s
         t=`expr "$s" | wc -c`
         t=`expr $t - 1`
         echo "Length of string is $t";;
         4) exit;;
         *) echo "Invalid Choice!";;
   esac
   echo -n "Do you want to continue? "
   read i
done
```

```
delta24@ITA2-39:~/Desktop/Shell/8$ nano 3.1.sh
delta24@ITA2-39:~/Desktop/Shell/8$ chmod +x 3.1.sh
delta24@ITA2-39:~/Desktop/Shell/8$ ./3.1.sh
```

```
Enter 1 for string compare.
Enter 2 for string concatenation.
Enter 3 for string length.
Enter 4 for EXIT.
Enter your choice: 1
Enter 1st string: Hello
Enter 2nd string: Hello
Strings are equal!
Do you want to continue? y
```

```
Enter 1 for string compare.
Enter 2 for string concatenation.
Enter 3 for string length.
Enter 4 for EXIT.
Enter your choice: 1
Enter 1st string: Hello
Enter 2nd string: hello
Strings are not equal!
Do you want to continue? y
```

```
Enter 1 for string compare.
Enter 2 for string concatenation.
Enter 3 for string length.
Enter 4 for EXIT.
Enter your choice: 2
Enter 1st string: Hello
Enter 2nd string: World
Hello World
Do you want to continue? y
```

```
Enter 1 for string compare.
Enter 2 for string concatenation.
Enter 3 for string length.
Enter 4 for EXIT.
Enter your choice: 3
Enter the string: Hello world
Length of string is 11
Do you want to continue? y
```

```
Enter 1 for string compare.
Enter 2 for string concatenation.
Enter 3 for string length.
Enter 4 for EXIT.
Enter your choice: 4
delta24@ITA2-39:~/Desktop/Shell/8$
```

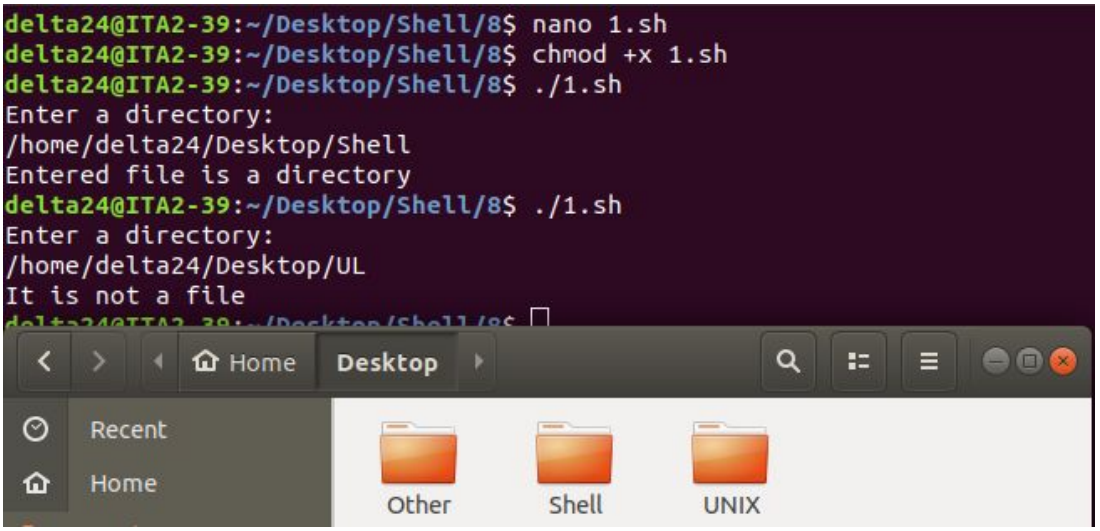
**4. Write a shell program to compute GCD and LCM of two numbers.**

```
#!/bin/sh
echo "Enter two numbers: "
read num1 num2
if [ $num1 -lt $num2 ]
then
   temp=$num1
else
   temp=$num2
fi
while [ $temp -ne 0 ]
do
   x=`expr $num1 % $temp`
   y=`expr $num2 % $temp`
   if [ $x -eq 0 -a $y -eq 0 ]
   then
         gcd=$temp
         break
   fi
   temp=`expr $temp - 1`
done
lcm=`expr $num1 \* $num2 / $gcd`
echo "GCD of $num1 and $num2 is $gcd"
echo "LCM of $num1 and $num2 is $lcm"
```

```
delta24@ITA2-39:~/Desktop/Shell/8$ nano 2.sh
delta24@ITA2-39:~/Desktop/Shell/8$ chmod +x 2.sh
delta24@ITA2-39:~/Desktop/Shell/8$ ./2.sh
Enter two numbers:
2 4
GCD of 2 and 4 is 2
LCM of 2 and 4 is 4
delta24@ITA2-39:~/Desktop/Shell/8$ ./2.sh
Enter two numbers:
7 13
GCD of 7 and 13 is 1
LCM of 7 and 13 is 91
delta24@ITA2-39:~/Desktop/Shell/8$
```

**5. Write a shell program to check whether given file is a directory or not.**

```
#!/bin/sh
echo "Enter a directory: "
read pathname
if test -d $pathname
then
   echo "Entered file is a directory"
else
   if test -f $pathname
   then
        echo "It is a file"
   else
        echo "It is not a file"
   fi
fi
```




**6. Write a shell program to count number of files in a Directory.**

```
#!/bin/sh
echo -n  "Enter a directory: "
read pathname
d=0
f=0
if test -d $pathname
then
   x=`ls $pathname`
   for i in $x
   do
        name="$pathname/$i"
        if test -d $name
        then
             d=`expr $d + 1`
        elif test -f $name
        then
             f=`expr $f + 1`
        fi
   done
   echo "No. of Directories in given Directory: $d\nNo. of Files in given Directory: $f"
else
   echo "Its not a directory"
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/8$ nano p2.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/8$ chmod +x p2.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/8$ ls /home/delta24/Desktop/shell
10.a  10.b  10.c  7  8  9  New.txt  practicals  studentout.txt  student.txt
delta24@dms24081999-ubuntu-l:~/Desktop/shell/8$ ./p2.sh
Enter a directory: /home/delta24/Desktop/shell
No. of Directories in given Directory: 7
No. of Files in given Directory: 3
delta24@dms24081999-ubuntu-l:~/Desktop/shell/8$
```

**7. Write an egrep script to display list of files starting with particular letter in the directory. (eg.:10)**

```
#!/bin/sh
echo "Enter name of Directory: "
read dir
if [ -d $dir ]
then
   echo "List of files starting with '10': "
   ls $dir|egrep "^10"
else
   echo "Provide proper directory."
fi
```

```
delta24@ITA2-39:~/Desktop/Shell/10.a$ nano 4.sh
delta24@ITA2-39:~/Desktop/Shell/10.a$ chmod +x 4.sh
delta24@ITA2-39:~/Desktop/Shell/10.a$ ./4.sh
Enter name of Directory:
/home/delta24/Desktop/Shell/10.a
List of files starting with '10':
10.1
10.2 and 3.png
10.2.png
10.3.png
delta24@ITA2-39:~/Desktop/Shell/10.a$ ./4.sh
Enter name of Directory:
/home/delta24/Desktop/Sh
Provide proper directory.
```

**8. Write an awk script to develop a Fibonacci series.**

```
awk 'BEGIN{
   for(i=1;i<=10;i++){
         if(i<=1) {
                  print i;
                  x=0;
                  y=1;
         } else {
                  z=x+y;
                  print z;
                  x=y;
                  y=z;
         }
   }
}'
```

```
delta24@ITA2-39:~/Desktop/Shell/10.b$ nano 1.sh
delta24@ITA2-39:~/Desktop/Shell/10.b$ chmod +x 1.sh
delta24@ITA2-39:~/Desktop/Shell/10.b$ ./1.sh
1
1
2
3
5
8
13
21
34
55
```

**9. Write a perl script to check whether the year is leap year or not.**

```
#!/usr/bin/perl
print "Enter a year: ";
$year=<STDIN>;
chomp($year);
if($year % 4 == 0){
   if($year % 100 == 0){
        if($year %400 == 0){
             print "$year is a leap year.\n";
        }else{
             print "$year is not a leap year.\n";
        }
   }else{
        print "$year is a leap year.\n";
   }
}else{
   print "$year is not a leap year.\n";
}
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 10p2.pl
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 10p2.pl
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ perl 10p2.pl
Enter a year: 2016
2016 is a leap year.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ perl 10p2.pl
Enter a year: 2019
2019 is not a leap year.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**10. Write an awk script to replace the Nth occurrence of a pattern.**

```
awk 'BEGIN{count=0}
{
   if($1=="AAA") {
        count++;
   }
   if(count==4) {
        sub("AAA","ZZZ",$1);
   }
}
{
   print $0;
}' New.txt
```

```
delta24@ITA2-39:~/Desktop/Shell/10.b$ nano 2.sh
delta24@ITA2-39:~/Desktop/Shell/10.b$ chmod +x 2.sh
delta24@ITA2-39:~/Desktop/Shell/10.b$ cat New.txt
AAA
BBB
CCC
XXX
AAA
DDD
AAA
AAA
AAA
XXX
delta24@ITA2-39:~/Desktop/Shell/10.b$ ./2.sh
AAA
BBB
CCC
XXX
AAA
DDD
AAA
ZZZ
AAA
XXX
```

**11. Write a perl script to check whether the entered number is prime or not.**

```
#/usr/bin/perl
print "Enter number to be checked: ";
$n=<>;
$d=0;
if($n==2){
   print "Prime number.\n";
}else{
   for($c=2;$c<=$n-1;$c++){
        if($n % $c == 0){
                $d=1;
                break;
        }
   }
   if($d==1){
        print "Not a Prime number.\n";
   }else{
        print "Prime number.\n";
   }
}
```

```
delta24@ITA2-39:~/Desktop/Shell/10.c$ nano 3.pl
delta24@ITA2-39:~/Desktop/Shell/10.c$ chmod +x 3.pl
delta24@ITA2-39:~/Desktop/Shell/10.c$ perl 3.pl
Enter number to be checked: 2
Prime number.
delta24@ITA2-39:~/Desktop/Shell/10.c$ perl 3.pl
Enter number to be checked: 9
Not a Prime number.
delta24@ITA2-39:~/Desktop/Shell/10.c$ perl 3.pl
Enter number to be checked: 5
Prime number.
```

**12. Write a shell program to find greatest of three numbers entered by user.**

```
#!/bin/sh
echo -n "Enter first number: "
read first
```

```
echo -n "Enter second number: "
read sec
echo -n "Enter third number: "
read third
if [ $first -gt $sec ]
then
   if [ $first -gt $third ]
   then
        echo "$first is the greatest number."
   else
        echo "$third is the greatest number."
   fi
else
   if [ $sec -gt $third ]
   then
        echo "$sec is the greatest number."
   else
        echo "$third is the greatest number."
   fi
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 10p3.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 10p3.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./10p3.sh
Enter first number: 3
Enter second number: 8
Enter third number: 4
8 is the greatest number.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

**13. Write a shell program to find smallest of three numbers entered by user.**

```
#!/bin/sh
echo -n "Enter first number: "
read first
echo -n "Enter second number: "
read sec
echo -n "Enter third number: "
read third
if [ $first -lt $sec ] ; then
   if [ $first -lt $third ] ; then
        echo "$first is the smallest number."
   else
        echo "$third is the smallest number."
   fi
else
   if [ $sec -lt $third ] ; then
        echo "$sec is the smallest number."
   else
        echo "$third is the smallest number."
   fi
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ nano 10p4.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ chmod +x 10p4.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$ ./10p4.sh
Enter first number: 4
Enter second number: 3
Enter third number: 8
3 is the smallest number.
delta24@dms24081999-ubuntu-l:~/Desktop/shell/practicals$
```

# Q3. Exp 6/Exp 9/Post Exp Exercise questions- 5 marks

## EXP-6

### 1. head  2. tail

```
delta24@ITA2-39:~/Desktop$ cat >New.txt
Hello World
This is delta24
Welcome to SFIT
near Borivali
In the west side
Of Mumbai
CMPN,INFT,EXTC
are the courses offered
This is UNIX lab
In lab 309B
Handled by Alvina Ma'am
This is the end of the topic
delta24@ITA2-39:~/Desktop$ head New.txt
Hello World
This is delta24
Welcome to SFIT
near Borivali
In the west side
Of Mumbai
CMPN,INFT,EXTC
are the courses offered
This is UNIX lab
In lab 309B
delta24@ITA2-39:~/Desktop$ head -n 2 New.txt
Hello World
This is delta24
delta24@ITA2-39:~/Desktop$ tail New.txt
Welcome to SFIT
near Borivali
In the west side
Of Mumbai
CMPN,INFT,EXTC
are the courses offered
This is UNIX lab
In lab 309B
Handled by Alvina Ma'am
This is the end of the topic
delta24@ITA2-39:~/Desktop$ tail -n 3 New.txt
In lab 309B
Handled by Alvina Ma'am
This is the end of the topic
delta24@ITA2-39:~/Desktop$ tail -n +4 New.txt | head -n 3
near Borivali
In the west side
Of Mumbai
delta24@ITA2-39:~/Desktop$ tail -n +10 New.txt
In lab 309B
Handled by Alvina Ma'am
This is the end of the topic
```

### 3. cut

```
delta24@ITA2-39:~/Desktop$ cut -c 3-6 New.txt
llo
is i
lcom
ar B
 the
 Mum
PN,I
e th
is i
 lab
ndle
is i
```

```
delta24@ITA2-39:~/Desktop$ cut -c 2,7 New.txt
eW
hs
ee
eo
n
fb
MN
re
hs
n
ad
hs
delta24@ITA2-39:~/Desktop$ cut -c -4,10-25 New.txt
Hellld
Thiselta24
Welco SFIT
nearvali
In tst side
Of M
CMPN,EXTC
are ourses offered
ThisNIX lab
In l9B
Handy Alvina Ma'am
Thishe end of the to
delta24@ITA2-39:~/Desktop$
```

```
delta24@ITA2-39:~/Desktop$ cat >student.txt
Evita,61,IT,A
Jaineel,5,IT,A
Rishan,27,IT,A
Bhagya,50,IT,B
Hollis,35,IT,B
Nelson,1,IT,B
Dominic,39,IT,A
Gaurav,41,CMPN,B
Sanket,21,CMPN,A
delta24@ITA2-39:~/Desktop$ cut -d ',' -f 1,3 student.txt
Evita,IT
Jaineel,IT
Rishan,IT
Bhagya,IT
Hollis,IT
Nelson,IT
Dominic,IT
Gaurav,CMPN
Sanket,CMPN
delta24@ITA2-39:~/Desktop$ cut -d ',' -f 1,3 student.txt >studentcut1.txt
delta24@ITA2-39:~/Desktop$ cut -d ',' -f 2,4 student.txt >studentcut2.txt
```

Open ▾ | stu... ~/Des... | Save

```
Evita,IT
Jaineel,IT
Rishan,IT
Bhagya,IT
Hollis,IT
Nelson,IT
Dominic,IT
Gaurav,CMPN
Sanket,CMPN
```

Open ▾ | stu... ~/Des... | Save

```
61,A
5,A
27,A
50,B
35,B
1,B
39,A
41,B
21,A
```

## 4. paste

```
delta24@ITA2-39:~/Desktop$ paste studentcut1.txt studentcut2.txt
Evita,IT        61,A
Jaineel,IT      5,A
Rishan,IT       27,A
Bhagya,IT       50,B
Hollis,IT       35,B
Nelson,IT       1,B
Dominic,IT      39,A
Gaurav,CMPN     41,B
Sanket,CMPN     21,A
delta24@ITA2-39:~/Desktop$ paste studentcut1.txt studentcut2.txt student.txt >studentm
erge.txt
delta24@ITA2-39:~/Desktop$ paste -d '|' studentcut1.txt studentcut2.txt student.txt
Evita,IT|61,A|Evita,61,IT,A
Jaineel,IT|5,A|Jaineel,5,IT,A
Rishan,IT|27,A|Rishan,27,IT,A
Bhagya,IT|50,B|Bhagya,50,IT,B
Hollis,IT|35,B|Hollis,35,IT,B
Nelson,IT|1,B|Nelson,1,IT,B
Dominic,IT|39,A|Dominic,39,IT,A
Gaurav,CMPN|41,B|Gaurav,41,CMPN,B
Sanket,CMPN|21,A|Sanket,21,CMPN,A
delta24@ITA2-39:~/Desktop$ paste -s student.txt
Evita,61,IT,A   Jaineel,5,IT,A  Rishan,27,IT,A  Bhagya,50,IT,B  Hollis,35,IT,B  Nelson
,1,IT,B Dominic,39,IT,A Gaurav,41,CMPN,B        Sanket,21,CMPN,A
delta24@ITA2-39:~/Desktop$ paste -s -d '|' student.txt
Evita,61,IT,A|Jaineel,5,IT,A|Rishan,27,IT,A|Bhagya,50,IT,B|Hollis,35,IT,B|Nelson,1,IT,
B|Dominic,39,IT,A|Gaurav,41,CMPN,B|Sanket,21,CMPN,A
```

Open ▾ | studentmerge.txt ~/Desktop | Save

```
Evita,IT        61,A    Evita,61,IT,A
Jaineel,IT      5,A     Jaineel,5,IT,A
Rishan,IT       27,A    Rishan,27,IT,A
Bhagya,IT       50,B    Bhagya,50,IT,B
Hollis,IT       35,B    Hollis,35,IT,B
Nelson,IT       1,B     Nelson,1,IT,B
Dominic,IT      39,A    Dominic,39,IT,A
Gaurav,CMPN     41,B    Gaurav,41,CMPN,B
Sanket,CMPN     21,A    Sanket,21,CMPN,A
```

## 5. sort

```
delta24@ITA2-39:~/Desktop$ sort student.txt
Bhagya,50,IT,B
Dominic,39,IT,A
Evita,61,IT,A
Gaurav,41,CMPN,B
Hollis,35,IT,B
Jaineel,5,IT,A
Nelson,1,IT,B
Rishan,27,IT,A
Sanket,21,CMPN,A
delta24@ITA2-39:~/Desktop$ sort studentcopy.txt
Bhagya,50,IT,B
Bhagya,50,IT,B
Dominic,39,IT,A
Evita,61,IT,A
Evita,61,IT,A
Hollis,35,IT,B
Jaineel,5,IT,A
Michelle,10,IT,B
delta24@ITA2-39:~/Desktop$
```

```
delta24@ITA2-39:~/Desktop$ sort -k 2 numeric.txt
2565
2885
496
6555
894
894
delta24@ITA2-39:~/Desktop$ sort -n numeric.txt
496
894
894
2565
2885
6555
delta24@ITA2-39:~/Desktop$ sort -u numeric.txt
2565
2885
496
6555
894
delta24@ITA2-39:~/Desktop$ sort -m numeric.txt newnumeric.txt
845
254
894
2565
496
2885
894
6555
```

**6. uniq**

```
delta24@ITA2-39:~/Desktop$ uniq sort.txt
256
288
496
655
894
delta24@ITA2-39:~/Desktop$ uniq -u sort.txt
256
288
496
655
delta24@ITA2-39:~/Desktop$ uniq -c sort.txt
      1 256
      1 288
      1 496
      1 655
      2 894
delta24@ITA2-39:~/Desktop$ uniq -d sort.txt
894
```

# EXP-6 POST EXP

(Engineering College)

DATE : _____ PAGE NO. : _____

7. Post experiment Exercise:-

1) Will this command work in UNIX? cut -d: -c1 -f2 foo

→ This command will not work since the "c" option doesn't work with "d" option and the delimiter specified is invalid.

2) How will you ~~user~~ use sort and cut to read a file's lines in reverse order?

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell$ cat student.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
50,Bhagya,IT,B
35,Hollis,IT,B
1,Nelson,IT,B,IT
39,Dominic,IT,A,IT
delta24@dms24081999-ubuntu-l:~/Desktop/shell$ nl student.txt | sort -nr | cut -f 2
39,Dominic,IT,A,IT
1,Nelson,IT,B,IT
35,Hollis,IT,B
50,Bhagya,IT,B
27,Rishan,IT,A
5,Jaineel,IT,A
61,Evita,IT,A
delta24@dms24081999-ubuntu-l:~/Desktop/shell$
```

# EXP-9

**student.txt file**

```
delta24@ITA2-39:~/Desktop/Shell$ cat student.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
50,Bhagya,IT,B
35,Hollis,IT,B
1,Nelson,IT,B,IT
39,Dominic,IT,A,IT
41,Gaurav,CMPN,B
21,Sanket,CMPN,A
```

## (A) LINE ADDRESSING:

**Q.1) Write an sed command to display first 2 lines of a file and quit?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed '2q' student.txt
61,Evita,IT,A
5,Jaineel,IT,A
```

**Q.2) Write an sed command to print the first 4 lines of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n '4p' student.txt
50,Bhagya,IT,B
```

**Q.3) Write an sed command to print from line 1 to line 3 of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n '1,3p' student.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
```

**Q.4) Write an sed command to print from line 5 to line 7 of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n '5,7p' student.txt
35,Hollis,IT,B
1,Nelson,IT,B,IT
39,Dominic,IT,A,IT
```

**Q.5) Write an sed command to print the last line of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n '$p' student.txt
21,Sanket,CMPN,A
```

**Q.6) Write an sed command to print from line 1 to line 3 and from line 5 to line 7 and the last line of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n -e '1,3p' -e '5,7p' -e '$p' student.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
35,Hollis,IT,B
1,Nelson,IT,B,IT
39,Dominic,IT,A,IT
21,Sanket,CMPN,A
```

## (B) CONTEXT ADDRESSING:

**Q.1) Write an sed command to display all lines of a file containing 'IT'?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n '/IT/p' student.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
50,Bhagya,IT,B
35,Hollis,IT,B
1,Nelson,IT,B,IT
39,Dominic,IT,A,IT
```

**Q.2) Write an sed command to print all lines of a file containing 'IT' in a separate output file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed -n '/IT/w studentout.txt' student.txt
delta24@ITA2-39:~/Desktop/Shell$ cat studentout.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
50,Bhagya,IT,B
35,Hollis,IT,B
1,Nelson,IT,B,IT
39,Dominic,IT,A,IT
```

**Q.3) Write an sed command to delete lines containing 'IT'?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed '/IT/d' student.txt
41,Gaurav,CMPN,B
21,Sanket,CMPN,A
```

## (C) SUBSTITUTION:

**Q.1) Write an sed command to replace ',' with '|' only of first occurrence, on all the lines of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed 's/,/|/' student.txt
61|Evita,IT,A
5|Jaineel,IT,A
27|Rishan,IT,A
50|Bhagya,IT,B
35|Hollis,IT,B
1|Nelson,IT,B,IT
39|Dominic,IT,A,IT
41|Gaurav,CMPN,B
21|Sanket,CMPN,A
```

**Q.2) Write an sed command to replace ',' with '|' of all global occurrence, on all the lines of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed 's/,/|/g' student.txt
61|Evita|IT|A
5|Jaineel|IT|A
27|Rishan|IT|A
50|Bhagya|IT|B
35|Hollis|IT|B
1|Nelson|IT|B|IT
39|Dominic|IT|A|IT
41|Gaurav|CMPN|B
21|Sanket|CMPN|A
```

**Q.3) Write an sed command to replace ',' with '|' of all global occurrence, from line 2 to line 6, of a file?**

```
delta24@ITA2-39:~/Desktop/Shell$ sed '2,6s/,/|/g' student.txt
61,Evita,IT,A
5|Jaineel|IT|A
27|Rishan|IT|A
50|Bhagya|IT|B
35|Hollis|IT|B
1|Nelson|IT|B|IT
39,Dominic,IT,A,IT
41,Gaurav,CMPN,B
21,Sanket,CMPN,A
```

# EXP-9 POST EXP

**Write a sed command to duplicate each line in a file in Unix.**

```
#!/bin/sh
echo "Enter a directory: "
read pathname
if test -f $pathname
then
        sed -n '{p;p;}' $pathname >$pathname.bak
        mv $pathname.bak $pathname
else
        echo "It is not a file"
fi
```

```
delta24@dms24081999-ubuntu-l:~/Desktop/shell$ cat student.txt
61,Evita,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
50,Bhagya,IT,B
39,Dominic,IT,A,IT
delta24@dms24081999-ubuntu-l:~/Desktop/shell$ chmod +x p1.sh
delta24@dms24081999-ubuntu-l:~/Desktop/shell$ ./p1.sh
Enter a directory:
/home/delta24/Desktop/shell/student.txt
delta24@dms24081999-ubuntu-l:~/Desktop/shell$ cat student.txt
61,Evita,IT,A
61,Evita,IT,A
5,Jaineel,IT,A
5,Jaineel,IT,A
27,Rishan,IT,A
27,Rishan,IT,A
50,Bhagya,IT,B
50,Bhagya,IT,B
39,Dominic,IT,A,IT
39,Dominic,IT,A,IT
delta24@dms24081999-ubuntu-l:~/Desktop/shell$
```