WEEK 05

1. LAB ASSIGNMENT

1. Write a shell script to find out wheather an integer input through the Keyboard is an odd number or even number.

```
echo "Enter a number"
read n
echo ". Result:"
if [ `expr $n % 2` == 0 ]
then
echo " $n is even"
else
 echo " $n is odd"
 fi
```

2. Write a shell script to find out wheather any year input through the keyboard is a leap year or not if no argument is ~~opptied~~. supplied the current year should be used

```
echo "Enter a year :"
read leap
if ['expr . $ leap % 400 - eq 0]
then
echo "$ year is a leap year"
else['expr . $ leap % 100 n - eq 0]
echo " $ year is not a leap year"
```

```
elif [ `expr $leap %4` eq 0]
then
 echo leap year
else
 echo " not a leap year "
fi
```

3) Write a shell script to find the maximum of three number provided as command line argument.

```
echo "Enter Num1"
read num1
echo "Enter Num2"
read Num2
echo "Enter Num3"
read Num3
if [$ num1 -gt $num2] so &[$ num -gt $num3]
echo " $num1 is greater "
then
echo " $num2 is greater "
else
echo " $ num3 is greater"
fi
```

4) We use a shell script to check weather a given number is prime or not.

```
echo " Enter a number:"
read num
i=2
f=0
while [$i -le `expr $num/2`]
#runns a loop f on 2 to number/2
#checking if i is greater of number
if[`expr $num, $i` -eq 0]
then
  f=1
fi
#invent the loop value
i=`expr $i+1`
done
if [$f -eq 1]
then
echo "The number is composite"
else
echo "The number is Prime"
```

HOME ASSIGNMENT

Q1) Write a shell script to find the factorial value of any integer entered through the keyboard.

```
echo " Enter a number"
read Num
fact = 1
while [ $ num -gt 1 ]
do
fact = $ (( fact * num))
num = $((num-1))
done
echo $ fact
```

Q2) Write a shell script to generate all combinations of 1,2 &

```
for i in 1 2 3
do
for j in 123
do
fun K in 123
do
echo $ i$j $k
  done
 done
done
```

Q3) Write a shell script to print all prime number in a given range

```
echo " Enter m and n"
read m n
for a in $(seq $m $n)
do
 k=0
for i in $(seq 2 $(expr $a - 1))
do
if[ $(expr $a % $i) -eq 0]
fi
done
if[ $k -eq 0]
then
 echo $a
fi
done
```

Q4) Write a shell script to calculate the sum of digits of any number entered through keyboard.

```
echo " Enter a number"]
read num
sum=0
while [ $ num - gt 0]
```

```
do
mod = 1 expr $ num %. 10
sum = 'expr $ sum + $ mod'
num = 'expr $ num / 10
done
done
```

Output
Enter a number 721 10

Q5) Rajesh's basic salary (BASIC) is input through the keyboard this dearness ~~allowa~~ allowance (DA)'s is 1/. of BASIC. Contr is utory provident fund is 12 1/- of (BASIC + DA). Write a shell script to calculate his gross salary and take the home salary using the following formula

Gross salary = BASIC + DA + IKA

Take Home salary = Gross salary.

```
echo "Enter basic salary :"
read bs.
hra = expr $ bs \* 15 /100\
da = 'expr . $ bs\* 52/100
gross = 'expr $ bs + $ hra + $ da'
echo " Gross Salary is $ gross"
```

```
sum = `expr $bs + $da`
pf `expr $sum \* 12 / 100`
hs = `expr $gross - $pf
echo "Take home salary = $hs"
```

Output
Enter basic salary 9000 Gross salary : 1530 Take home salary : 11200

WEEK : 6.

ASSIGNMENTS.

Q1) Write a short shell program that takes a number from users and prints the reverse of the number

```
echo "Enter n
read n
num=0
while [ $n -gt 0 ]
do
num= $(expr $num \* 10)
k= $(expr $n %. 10)
num= $(expr $num + $ k)
n=$ .(expr $n /10)
done
echo number is $num.
```

Output

```
root@Sanchita:#sh rin reverse is
root@Sanchita:#sh reverse.sh
enter n
number is 123.
```

Q2

Write a shell script to determine ~~whether~~ weather two numbers two inputs through keyboard are prime to each other.

```
echo "Enter the first number:"
read a
echo "Enter the second number".
read b
if [$a -gt $b]
then
  num=$a
den=$b.
else
 num=$b
 den=$a.
fi
r=`expr $num %. $den`
while [$r -ne 0]
num=$den
den=$r
r=`expr $num %. $den`
done
ca=$den
if [ $gcd -eq 0 ]
then
  echo "Prime to each other"
  echo "Not prime to each other"
  fi
```

Output

```
Enter the first number
3
Enter the second number
 5
Prime to each other
```

Q3> Write a shell script find weather a number is divisib
by 11.

```
echo "Enter a number"
read n
c = `expr $n % 11`
if test $c -eq 0
then
echo '$n is divisible by 11"
else
echo " $n is not divisible by 11"
```

Output.
Enter the number 2 21 is divisible by 7 Enter the number. 23 23 is not divisible by 7.

Q4> Write a shell script that produces a shell calculator to perform the following operation

'Addition'
'Subtraction'
'Multiplication'
'Division'

2 Subtraction.
3 Multiplication.

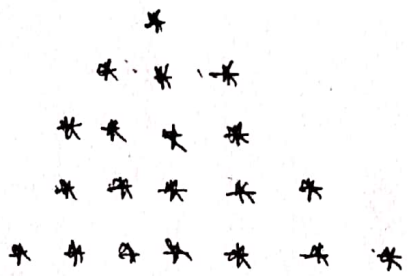
```
echo 'Enter the number'
read a
read b
echo "Enter choice :"
echo " 1. Addition
echo "2.Subtraction"
echo " 3. Multiplication"
echo "4. Divison"
read ch
Case $ch in
1) res = `echo $a + $b |bc
2) res = `` echo $a - $b |bc `
3) res = `echo . $a \* . $b |bc
4)res = `echo "scale=2; $a/$b "|bc
      ''
      //
esac
echo "Result $res"
```

Output

```
Enter two numbers
12
10
Enter choice
1. Addition
2 subtraction.
3 Multiplication.
4) division.
Result 22
```

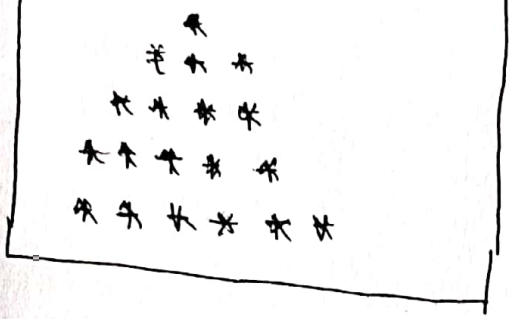
HOME ASSIGNMENT.

Q1) Write a shell script to print the solution pattern for any number of lines.



```
p=5
for ((m=1, m<=p; m++))
do
for ((a=m, a<-p; a++))
do
 for ((a=m, a<p, a++))
do
echo -ne
done
for ((n=1; n<=m; n++))
do
echo -ne " *"
for ((i=1; i<m; i++))
do
echo -ne " *"
done
echo
done
```

Output:



92) Write a shell script to test weather a given string is palindromic or not.

```
echo " Enter the String "
read s.
echo $ s > temp
revs = " $ (rev temp) "
if [ $ s = $ revs ]
then .
echo " it is palindromic
else
" It is not palindrom "
fi
```

Output:

Enter the string

abba

It is a palindrome

Enter the string.

abn

palindrome.

Q3) Write a shell script which counts the number of consonents and vowels in a given sentence.

```
echo -n "Enter a line of text":
read string.
vowcount = $(echo $string | grep -o.
                              -i "[aeiou]"
                              wc -line'
censcount = $(echo $string | grep -o -i
                [bcafghjklmnpqrstuwxyz]
echo "The given string has
      $vowcount vowels . and
      $censcount in it"
```

Output:

```
Enter a line of text
Hello World
The given string has 3 vowels.
and 7 consonent.
```

Q4) Write a shell script to display the list of users as well as the number of users connected to the system.

Output

1) for list the names using year counts the no. of integers in the account

2
The result is 2.

```
echo -e "\n"
```

[1] for listing the no of logged users.

[2] for counting the number of logged user accounts.

```
read user input
echo "The result is ="
case $ user, Input in
    1) who q| grep -v users
    2) who — count| grep users.
```

OS WEEK 7.

LAB ASSIGNMENTS.

1. Write a shell script that displays a list of all files in the current directory to which you have read, write and execute permissions.

Solutions.

```
for var in
do
if test -r $var -a -w $var -a -x $var -a ! -d $var
then
ls $var
fi done
```

2) Write a shell script that lists files by modification time when called with -m and by access time when called with -a. By default the script should show the listing of all files in the current directory.

Solution

```
case $1 in
-m) ls -lt;;
-a) ls -lut;;
*) ls -l;;
esac
```

3) Write a shell script to display the files created or update within fourteen days from the current day.

Solution:

```
find -atime -14 -mtime -14 | sort -u
```

4) Develope a shell script which displays all files with all attributes those have been created or modified in the month of November.

Solution:

```
for var in
do
set '-ls -l $var' if test "$6" = "Nov"
then
ls -l $var
fi
done.
```

DAY-8:

1) Write a shell script which reports names and sizes of all files in a directory whose exceeds 100 bytes. The filenames should be printed in decreasing order of their size. The total number of such files should be reported

Solution:

```
# !/bin/sh
if test $# -ne
then
echo "Please give a directory name and try again"
exit
fi
cd $1 find - size +100b | sort rr
echo "Total number of such files"
find - size +100b | grep c "*"
```

2) Write a shell script that shows the names of all the non-directory files in the current directory and calculate the sum of all size of them.

Solution

```
dir | awk '{total + $4}
END{ print total}
ls - l ;;
```

3) Write a shell script to list the names of files under current directory that starts with a vowel.

Solution

```
echo "Required files are :"
ls grep "^[aeiou]"
```

4) Write a shell script recieves two filenames as argum checks weather the two files contents are same or n If they are same then the second file should be de

Solution

```
if test $#_ ne 2.
then
echo " Please give two filenames "
exit
fi
  comp - S $1 $ 2
  if test $ ? - eq 0
then echo " $1 and $ 2 are same"
    $m $2
else
echo " $ 1 and $2 are not same"
fi
```

Write a shell script which deletes the linear contents the word UNIX for the files supplied as arguments this shell script.

→ # USAGE :- sh unixdeletes sh filenames (s)

If test $# -eq 0

then.

echo " Please give filenames"

fi

for var in $*

do

grep -v " UNIX " $ var > ff

cpff $ var

done

end of script.

Day-9.

1. A file called dist consists of several words. Write a shell script which will recieve a list of filenames, the first of which should be dist. The shell script should report all occurances of each word in dist in the rest of the files supplied as arguments.

→
```
if [ $# -lt $0 ]
then
echo " no arguments"
else
touch
" $1 > temp
Shift
for i in $ *
do
touch " " "
"< $i > temp 1.
y = " wc - l < temp"
j=1.
while [ $j - le $y ]
do
x = ' head - n $ j temp ) tail-1"
c = ' grep - c " $x" temp1
echo $x $c.
j = ' expr $j 1
done
done
fi
```