

LAB – 3

AIM – Shell Scripting Programs

Shruti Mishra

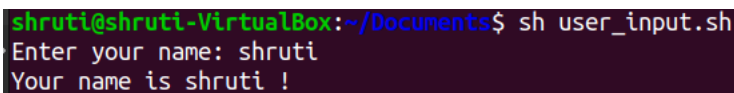
21BCP110

1) Write a shell script to print user input.

CODE :

```
read -p "Enter your name: " input
echo "Your name is $input !"
```

OUTPUT :



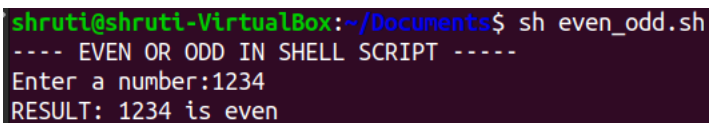
```
shruti@shruti-VirtualBox:~/Documents$ sh user_input.sh
Enter your name: shruti
Your name is shruti !
```

2) Write a shell script to find whether a number is even or odd.

CODE:

```
echo "---- EVEN OR ODD IN SHELL SCRIPT ----"
echo -n "Enter a number:"
read n
echo -n "RESULT: "
if [ `expr $n % 2` -eq 0 ]
then
    echo "$n is even"
else
    echo "$n is Odd"
fi
```

OUTPUT:



```
shruti@shruti-VirtualBox:~/Documents$ sh even_odd.sh
---- EVEN OR ODD IN SHELL SCRIPT ----
Enter a number:1234
RESULT: 1234 is even
```

3) Write a shell script to print table of a given number.

CODE:

```
read -p "Enter a Number:" n
i=1

while [ $i -le 10 ]
do
    echo " $n x $i = $(( n * i ))"
    i=$(( i + 1 ))
done
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh table_of_no.sh
Enter a Number:4
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40
```

4) Write a shell script to check whether a given number is prime or not.**CODE:**

```
read -p "Enter number:" num

for((i=2; i<=num/2; i++))
do
    if [  $((num\%i))$  -eq 0 ]
    then
        echo "$num is not a prime number."
        exit
    fi
done
echo "$num is a prime number."
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh prime_no.sh
Enter number:6
6 is not a prime number.
shruti@shruti-VirtualBox:~/Documents$ sh prime_no.sh
Enter number:5
5 is a prime number.
shruti@shruti-VirtualBox:~/Documents$
```

5) CODE:

```
read -p "Enter Amount:" p
read -p "Enter Time:" t
read -p "Enter Rate of Interest:" r

i=`expr $p \* $t \* $r`
i=`expr $i / 100`

echo "Simple Interest is: $i"
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh simple_interest.sh
Enter Amount:2500
Enter Time:2
Enter Rate of Interest:10
Simple Interest is: 500
```

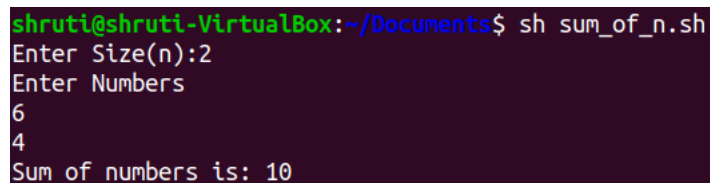
6) Write a shell script to find sum of n numbers.

CODE:

```
read -p "Enter Size(n):" n
sum=0
echo "Enter Numbers"
for((i=1 ; i<=n ; i++))
do
    read num
    sum=$((sum+num))
done

echo "Sum of numbers is:"$sum
```

OUTPUT:



```
shruti@shruti-VirtualBox:~/Documents$ sh sum_of_n.sh
Enter Size(n):2
Enter Numbers
6
4
Sum of numbers is: 10
```

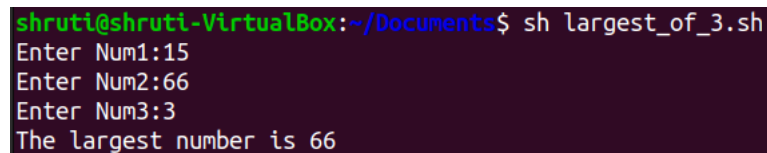
7) Write a shell script to find largest number among 3 numbers.

CODE:

```
read -p "Enter Num1:" num1
read -p "Enter Num2:" num2
read -p "Enter Num3:" num3

if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
then
    echo "The largest number is" $num1
elif [ $num2 -gt $num1 ] && [ $num2 -gt $num3 ]
then
    echo "The largest number is" $num2
else
    echo "The largest number is" $num3
fi
```

OUTPUT:



```
shruti@shruti-VirtualBox:~/Documents$ sh largest_of_3.sh
Enter Num1:15
Enter Num2:66
Enter Num3:3
The largest number is 66
```

8) Write a shell script for a menu driven format.

CODE:

```
sum=0
i="y"
echo "CALCULATOR PROGRAM"
read -p "Enter first number :" n1
read -p "Enter second number :" n2
while [ $i = "y" ]
do
echo "Menu"
echo "1.Addition"
echo "2.Subtraction"
echo "3.Multiplication"
echo "4.Division"
echo "Enter your choice"
read ch
case $ch in
1)sum=`expr $n1 + $n2`
echo "Sum ="$sum;;
2)sub=`expr $n1 - $n2`
echo "Sub = "$sub;;
3)mul=`expr $n1 \* $n2`
echo "Mul = "$mul;;
4)div=`echo $n1 / $n2 | bc -l`
echo "Div = "$div;;
*)echo "Invalid choice";;
esac
echo "Do u want to continue ? [y/n]"
read i
if [ $i != "y" ]
then
exit
fi
done
```

OUTPUT:

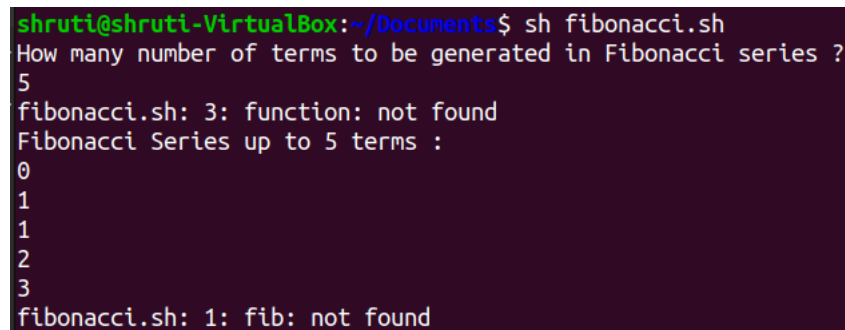
```
shruti@shruti-VirtualBox:~/Documents$ sh menu_driven.sh
CALCULATOR PROGRAM
Enter first number :15
Enter second number :40
Menu
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice
3
Mul = 600
Do u want to continue ? [y/n]
n
```

9) Write a shell script to display Fibonacci series up to n terms.

CODE:

```
echo "How many number of terms to be generated in Fibonacci series ?"
read n
function fib
{
x=0
y=1
i=2
echo "Fibonacci Series up to $n terms :"
echo "$x"
echo "$y"
while [ $i -lt $n ]
do
i=`expr $i + 1 `
z=`expr $x + $y `
echo "$z"
x=$y
y=$z
done
r=`fib $n`
echo "$r"
```

OUTPUT:



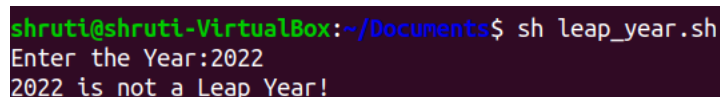
```
shruti@shruti-VirtualBox:~/Documents$ sh fibonacci.sh
How many number of terms to be generated in Fibonacci series ?
5
fibonacci.sh: 3: function: not found
Fibonacci Series up to 5 terms :
0
1
1
2
3
fibonacci.sh: 1: fib: not found
```

10) Write a shell script to check if the current year is a leap year or not.

CODE:

```
read -p "Enter the Year:" y
year=$y
y=$(( $y % 4 ))
if [ $y -eq 0 ]
then
echo "$year is Leap Year!"
else
echo "$year is not a Leap Year!"
fi
```

OUTPUT:



```
shruti@shruti-VirtualBox:~/Documents$ sh leap_year.sh
Enter the Year:2022
2022 is not a Leap Year!
```

11) Write a shell script to print half pyramid using numbers.

CODE:

```
num=1
rows=5
for((i=1; i<=rows; i++))
do
    for((j=1; j<=i; j++))
    do
        echo -n "$num "
        num=$((num + 1))
    done
    num=1
    echo
done
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh half_pyramid.sh
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

12) Write a shell script to convert lowercase to uppercase.

CODE:

```
read -p "Enter the string:" s
upperstr=$(echo $s | tr '[:lower:]' '[:upper:]')
echo "Inputed Lowercase String : $s"
echo "Uppercase String : $upperstr"
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh uppercase.sh
Enter the string:shruti
Inputed Lowercase String : shruti
Uppercase String : SHRUTI
```

13) Write a shell script to find reverse of a given number.

CODE:

```
read -p "Enter a number: " number
temp=$number
while [ $temp -ne 0 ]
do
    reverse=$((reverse*10+temp%10))
    temp=$((temp/10))
done
echo "Reverse of number is $reverse"
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh reverse_num.sh
Enter a number: 456
Reverse of number is 654
```

14) Write a shell script to print sum of all digit of a number.

CODE:

```
read -p "Enter a number:" num
sum=0
while [ $num -gt 0 ]
do
    mod=`expr $num % 10`
    sum=`expr $sum + $mod`
    num=`expr $num / 10`
done
echo "Sum of all digits in the number is "$sum
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh sum_of_all_digits.sh
Enter a number:234
Sum of all digits in the number is 9
```

15) Write a shell script to find factorial of a given number.

CODE:

```
read -p "Enter a number:" num
fact=1
for((i=2;i<=num;i++))
{
    fact=$((fact * i)) #fact = fact * i
}
echo "The factorial of $num is $fact"
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh factorial.sh
Enter a number: 5
The factorial of 5 is 120
```

16) Write a shell script which print "INVALID NUMBER OF ARGUMENTS " if more than 4 command line arguments otherwise print "VALID NUMBER OF ARGUMNETS".

CODE:

```
echo $1 $2 $3 $4
if [ $# -eq 4 ]
then
    echo "Valid arguments"
else
    echo "Invalid arguments"
fi
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents$ sh validate_args.sh 3 6 8 1
3 6 8 1
Valid arguments
shruti@shruti-VirtualBox:~/Documents$ sh validate_args.sh 5 7
5 7
Invalid arguments
```