

Shree M.M.Ghodasara Mahila College
Junagadh

Computer Science Department
B.C.A.
Lab Manual

Shell-Programming



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Examples of Shell Scripts

(1) Write a shell script that prints "Hello world"

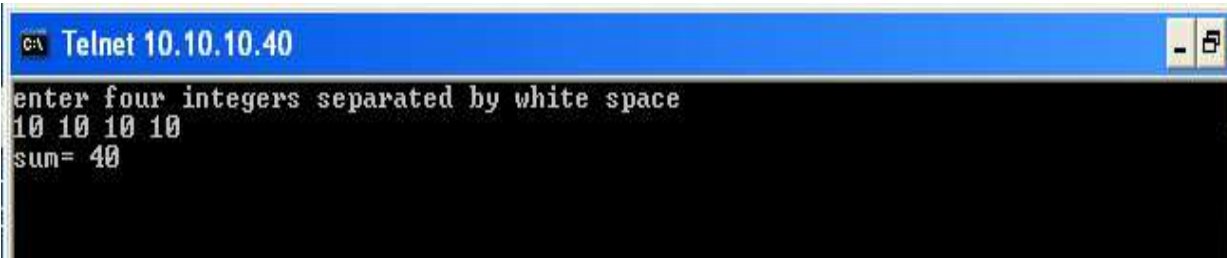
```
# shell script to print "Hello world" message  
clear  
echo "Hello World"
```



A screenshot of a Telnet terminal window with a blue title bar that reads "C:\ Telnet 10.10.10.40". The terminal content shows the output of the script: "Hello World".

(2) Write a shell script that adds four variables

```
# shell script to add four variables  
clear  
echo "Enter four integers separated by white space"  
read a b c d  
sum=`expr $a + $b + $c + $d` # use backquote  
echo "sum=" $sum
```



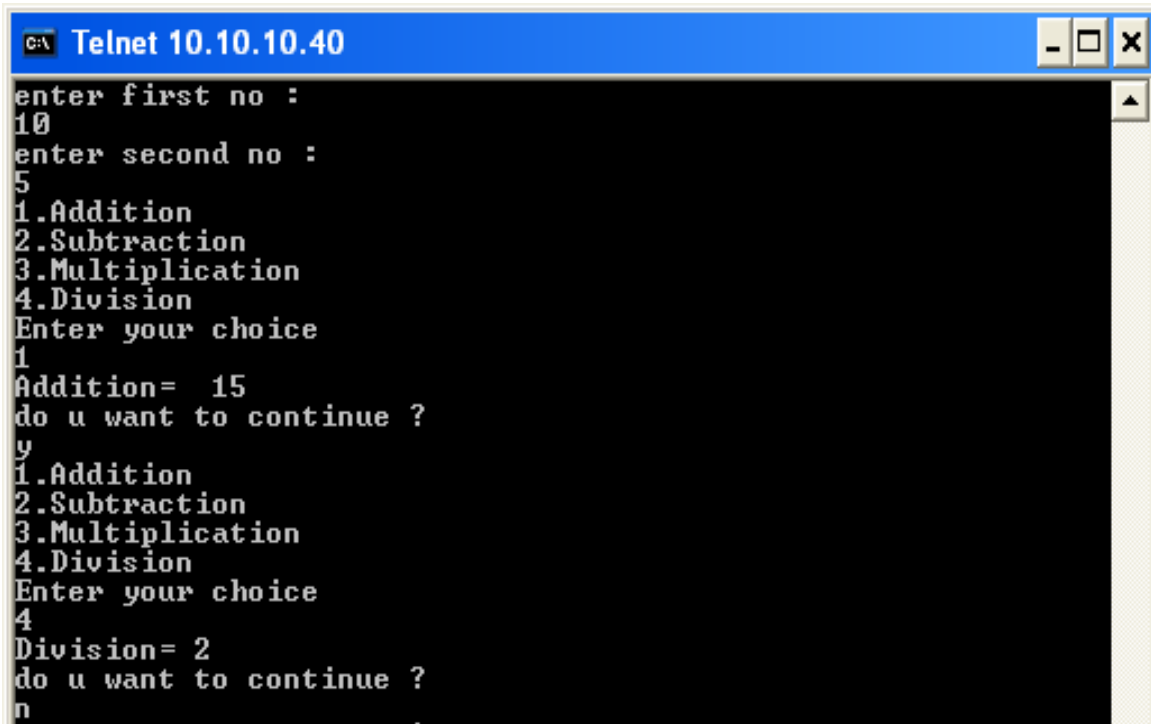
A screenshot of a Telnet terminal window with a blue title bar that reads "C:\ Telnet 10.10.10.40". The terminal content shows the execution of the script: "enter four integers separated by white space", followed by the input "10 10 10 10", and the output "sum= 40".

(3) Write a shell script for simple calculation which can display Addition, Subtraction, Multiplication and division of any two number as per user choice

```
# shell script for simple calculator
clear
sum=0
i="y"
echo "enter first no."
read n1
echo "enter second no."
read n2
while [ $i = "y" ]
do
    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 + $n2` #use backquote
            echo "Addition ="$sum
            ;;
        2)sub=`expr $n1 - $n2`
            echo "Subtraction ="$sub
            ;;
        3)mul=`expr $n1 \* $n2`
            echo "Multiplication ="$mul
            ;;
        4)div=`expr $n1 / $n2`
            echo "Division ="$div
            ;;
        *)
            echo "Invalid choice"
            ;;
    esac
    echo "Do u want to continue ?"
```

Subject :- Shell-Programming

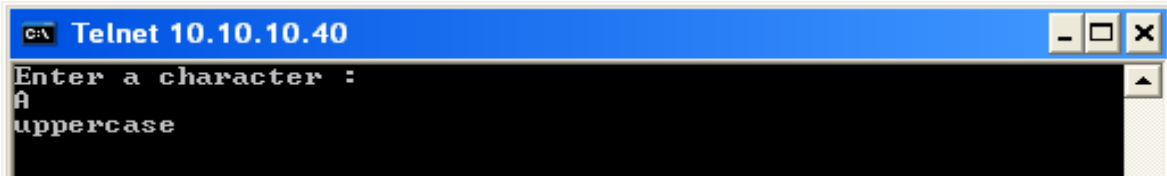
```
read i
if [ $i != "y" ]
then
    exit
fi
done
```



```
C:\> Telnet 10.10.10.40
enter first no :
10
enter second no :
5
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice
1
Addition= 15
do u want to continue ?
y
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice
4
Division= 2
do u want to continue ?
n
```

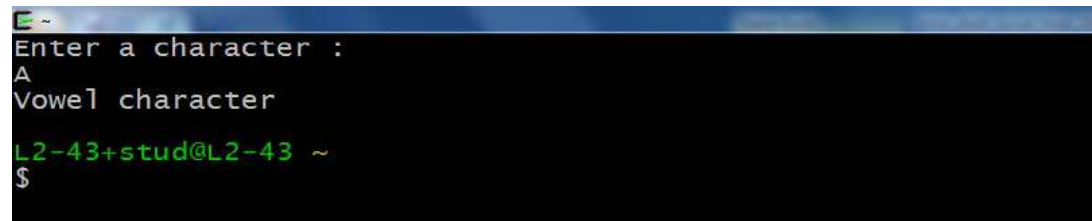
(4) Write a shell script that checks whether the entered character is lowercase, uppercase or digit.

```
# shell script to check whether char is lower ,upper or digit
clear
echo "Enter a Character:"
read ch
case $ch in
    [A-Z])echo "uppercase";;
    [a-z])echo "lowercase";;
    [0-9])echo "digit";;
    *)echo "invalid";;
esac
```



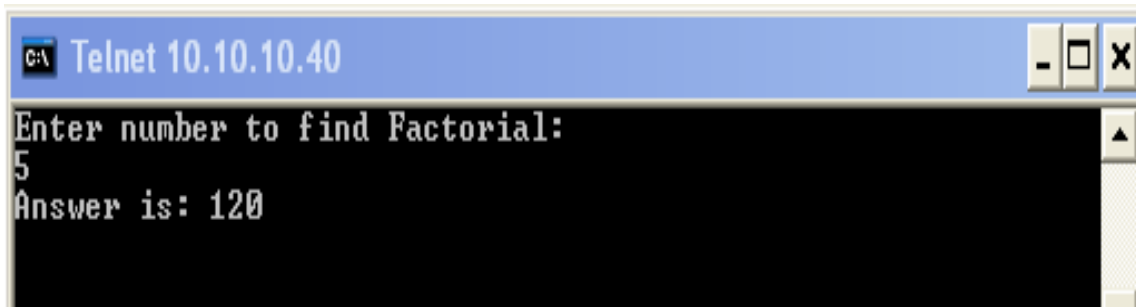
(5) Write a shell script that checks whether the entered character is vowel or not.

```
# shell script to check whether character is vowel or not
clear
echo "Enter a character : "
read ch
case $ch in
    [aeiouAEIOU])echo "Vowel character";;
    *)echo "Not a vowel character";;
esac
```



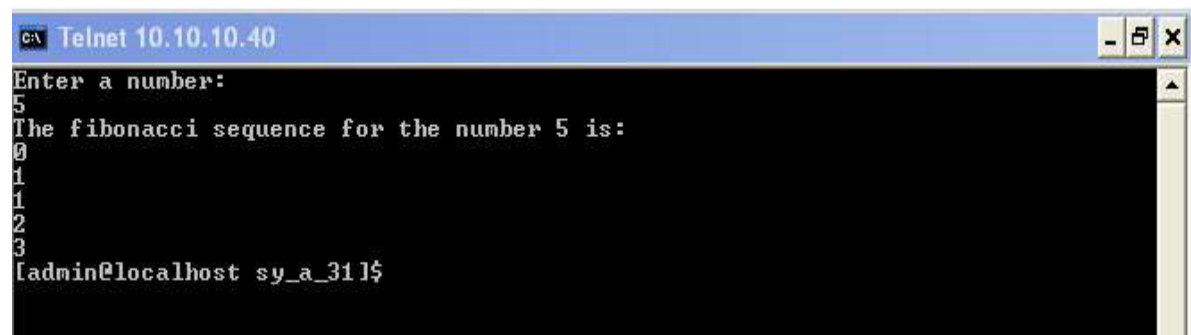
(6) Write a shell script that gives factorial of a number

```
# shell script to find factorial
clear
n=0
fact=1
echo "Enter number to find factorial : "
read n
while [ $n -ge 1 ]
do
    fact=`expr $fact * $n` #use backquote
    n=`expr $n - 1`
done
echo "Answer is : " $fact
```



(7) Write a shell script that give Fibonacci series upto given number

```
#shell script for Fibonacci series
clear
echo "Enter a number : "
read n
f1=0
f2=1
sum=0
i=1
echo "The Fibonacci sequence for the number " $n " is : "
echo $f1
echo $f2
for (( i=1;i<=n-2;i++ ))
do
    sum=`expr $f1 + $f2` #use backquote
    echo $sum
    f1=$f2
    f2=$sum
done
```

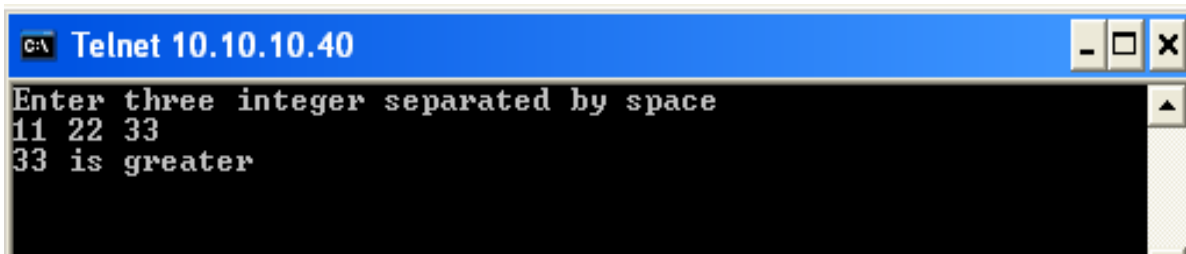


The screenshot shows a Telnet session with the following output:

```
C:\> Telnet 10.10.10.40
Enter a number:
5
The fibonacci sequence for the number 5 is:
0
1
1
2
3
[admin@localhost sy_a_31]$
```

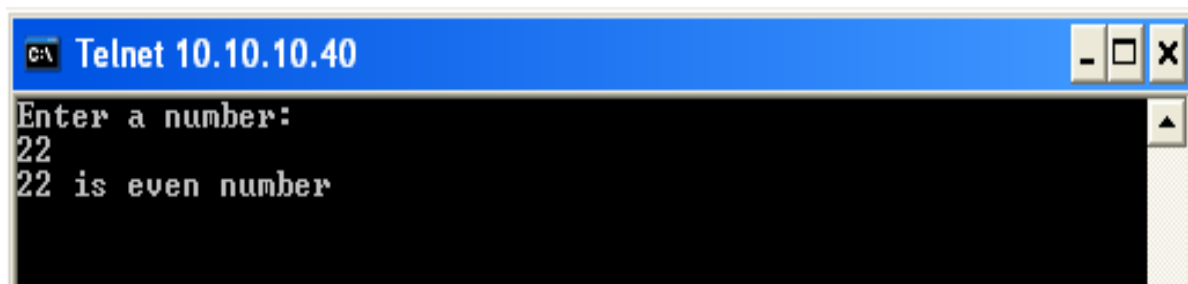
(8) Write a shell script that finds maximum number from given three number

```
# shell script to find max number from given 3 numbers
clear
echo "Enter three integers separated by space"
read no1 no2 no3
if [ $no1 -gt $no2 ]
then
    if [ $no1 -gt $no3 ]
    then
        echo $no1 "is greater"
    else
        echo $no3 "is greater"
    fi
else
    if [ $no2 -gt $no3 ]
    then
        echo $no2 "is greater"
    else
        echo "$no3 is greater"
    fi
fi
```



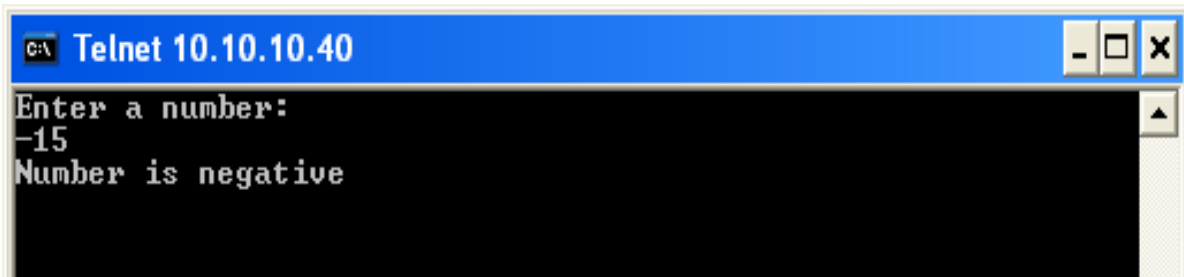
(9) Write a shell script that finds given number is odd or even

```
# shell script to find given number is odd or not
clear
echo "Enter a number : "
read n
rem=`expr $n % 2`
if [ $rem -eq 0 ]
then
    echo $n "is even number"
else
    echo $n "is odd number"
fi
```



(10) Write a shell script to print number is positive , negative or zero

```
# shell script to print whether number is positive, negative or not
clear
echo "Enter a number : "
read n
if [ $n -lt 0 ]
then
    echo "Number is negative"
elif [ $n -gt 0 ]
then
    echo "Number is positive"
else
    echo "Number is Zero"
fi
```



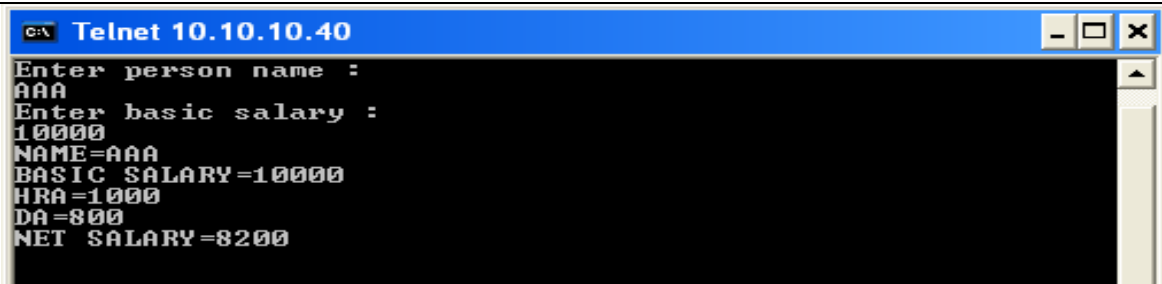
```
C:\ Telnet 10.10.10.40
Enter a number:
-15
Number is negative
```

(11) Write a shell script to enter name, city, and basic salary of employee and calculate the following things:

- BS is greater than 15000
HRA=10% of BS
DA=20% of BS
- BS is less than 15000
HRA=1000
DA=800

```
# shell script to calculate net salary according to given condition
```

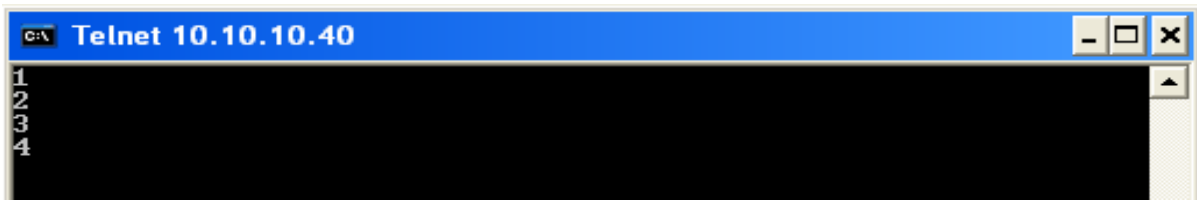
```
clear
echo "Enter Person Name : "
read nm
echo "Enter Basic Salary : "
read bs
hra=1000
da=800
if [ $bs -gt 15000 ]
then
hra=`expr $bs \* 10 / 100`
da=`expr $bs \* 2 / 100`
fi
tot=`expr $hra + $da`
net=`expr $bs - $tot`
echo "NAME=$nm"
echo "BASIC SALARY=$bs"
echo "HRA= "$hra
echo "DA= "$da
echo "NET SALARY= "$net
```



```
C:\> Telnet 10.10.10.40
Enter person name :
AAA
Enter basic salary :
10000
NAME=AAA
BASIC SALARY=10000
HRA=1000
DA=800
NET SALARY=8200
```

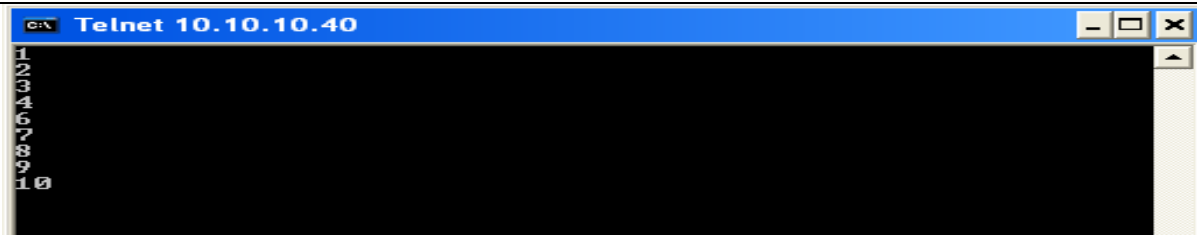
(12) Write a shell script for the use of “break”

```
# shell script for use of 'break'
clear
for (( i=1;i<=10;i++ ))
do
    if [ $i -eq 5 ]
    then
        break
    fi
    echo $i
done
```



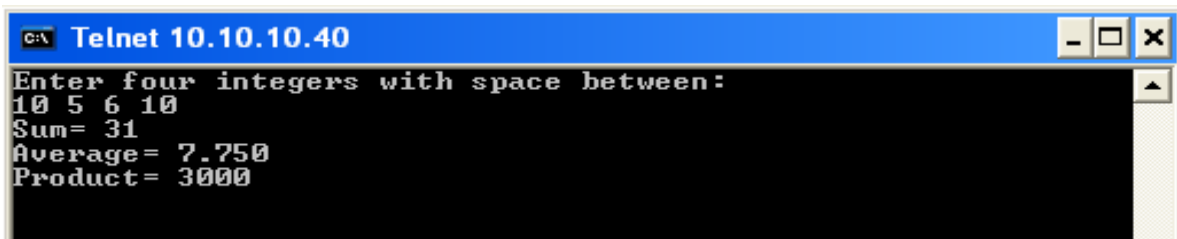
(13) Write a shell script for use of continue

```
# shell script for use of 'continue'
clear
for (( i=1;i<=10;i++ ))
do
    if [ $i -eq 5 ]
    then
        continue
    fi
    echo $i
done
```



(14) Write a shell script to find the sum, the average and the product of the four integers entered in Unix

```
# shell script to find sum, average and product of four integers
clear
echo "Enter four integers with space between: "
read a b c d
sum=`expr $a + $b + $c + $d`
avg=`expr $sum / 4`
dec=`expr $sum % 4`
dec=`expr \ $dec \* 1000 / 4`
product=`expr $a \* $b \* $c \* $d`
echo "Sum="$sum
echo "Average="$avg.$dec
echo "Product="$product
```



```
C:\> Telnet 10.10.10.40
Enter four integers with space between:
10 5 6 10
Sum= 31
Average= 7.750
Product= 3000
```

(15) Write a shell script that checks whether the given number is palindrome or not

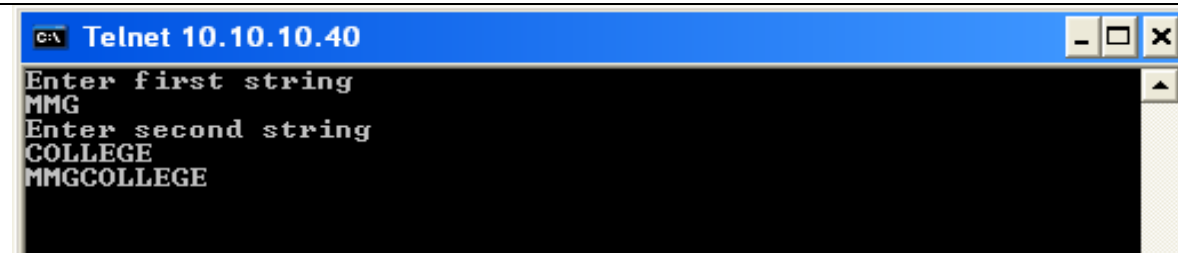
```
# shell script to check whether number is palindrome or not
clear
echo "Enter number : "
read n
# store single digit
sd=0
# store number in reverse order
rev=""
# store original number
on=$n
while [ $n -gt 0 ]
do
    sd=`expr $n % 10` # get Remainder
    n=`expr $n / 10` # get next digit
    # store previous number and current digit in reverse
    rev=$( echo $rev$sd )
done
if [ $on -eq $rev ]
then
    echo "Number is palindrome"
else
    echo "Number is not palindrome"
fi
```



```
C:\> Telnet 10.10.10.40
Enter number:
121
Number is palindrome
```

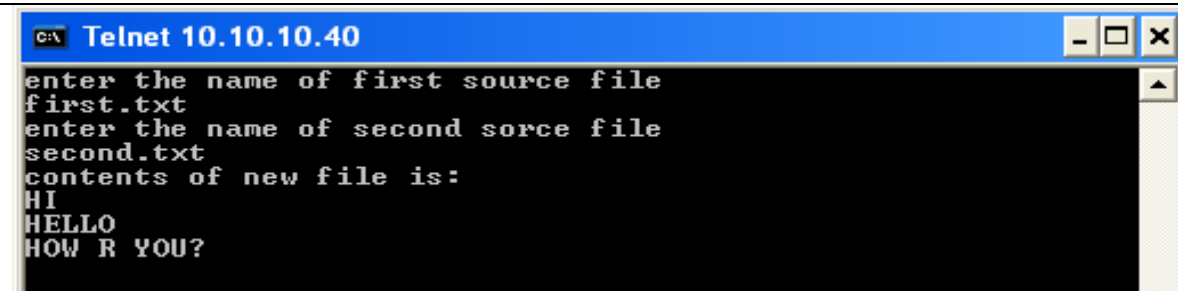

(16) Write a shell script to concatenation of two strings

```
# shell script for concatenation of two string
clear
echo "Enter First String:"
read s1
echo "Enter Second String:"
read s2
ans=$s1$s2
echo $ans
```



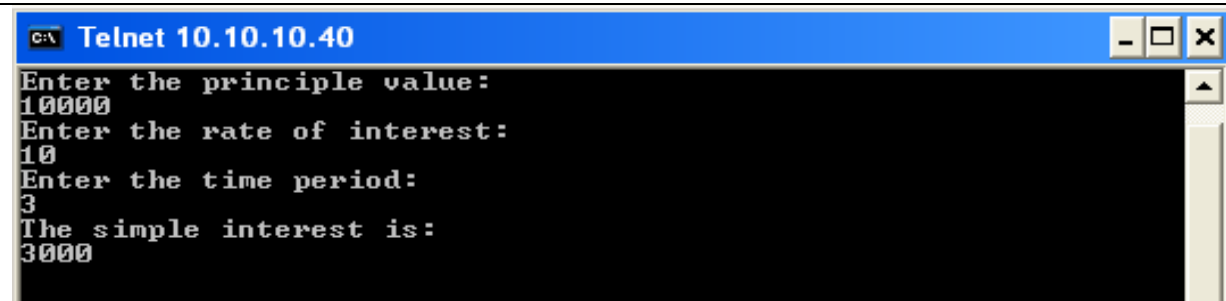
(17) Write a shell script concatenation of two file and save to third file

```
# shell script for concatenation of two files and save in third file
clear
echo "enter the name of first source file"
read first
echo "enter the name of second source file"
read second
cat $first>new.txt
cat $second>>new.txt
echo "contents of new file is:"
cat new.txt
```



(18) Write a shell script to find simple interest

```
#shell script for finding simple interest
clear
echo " Enter the principle value: "
read p
echo " Enter the rate of interest:"
read r
echo " Enter the time period:"
read n
mul=`expr $p \* $r \* $n`
si=`expr $mul / 100`
echo " The simple interest is "
echo $si
```

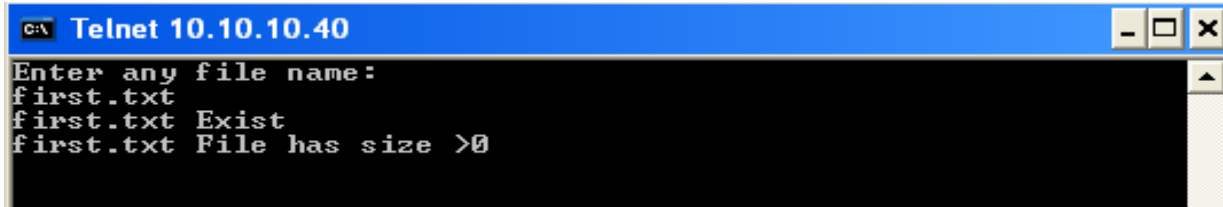


The screenshot shows a Telnet session with a blue title bar that reads "C:\ Telnet 10.10.10.40". The terminal window has a black background with white text. The text in the terminal is as follows:

```
Enter the principle value:
10000
Enter the rate of interest:
10
Enter the time period:
3
The simple interest is:
3000
```

(19) Write a shell script for finding file size

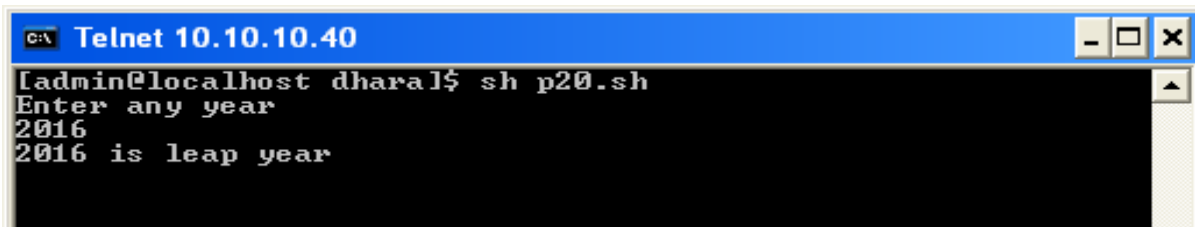
```
# shell script for finding file existence and size
clear
echo "Enter any file name: "
read filenm
if [ -e $filenm ]
then
    echo $filenm "Exist"
    if [ -s $filenm ]
    then
        echo $filenm" File has size >0"
    else
        echo $filenm" File is deleted which has size = 0"
    fi
else
    echo "File not exist"
fi
```



```
C:\ Telnet 10.10.10.40
Enter any file name:
first.txt
first.txt Exist
first.txt File has size >0
```

(20) Write a shell script to check whether enter year is leap year or not?

```
# shell script to check whether enter year is leap year or not?
clear
echo "Enter any year"      #enter four digit of year
read year
ans=`expr $year % 4`
if [ $ans -eq 0 ]
then
    echo $year "is leap year"
else
    echo $year "is not leap year"
fi
```

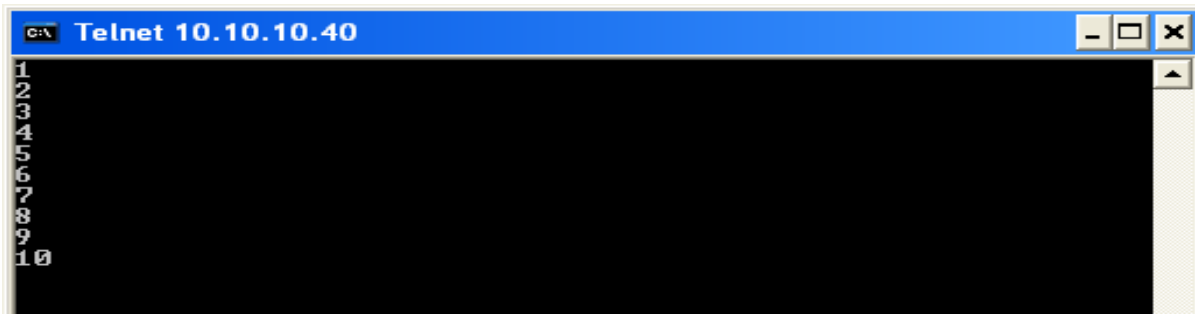


The screenshot shows a Telnet session with the title bar 'C:\ Telnet 10.10.10.40'. The terminal output is as follows:

```
[admin@localhost dhara]# sh p20.sh
Enter any year
2016
2016 is leap year
```

(21) Write a shell script to print 1 to 10 using for loop.

```
# shell script to print a 1 to 10
clear
for (( i=1;i<=10;i++ ))
do
    echo $i
done
```



The screenshot shows a Telnet session with the title bar 'C:\ Telnet 10.10.10.40'. The terminal output is as follows:

```
1
2
3
4
5
6
7
8
9
10
```

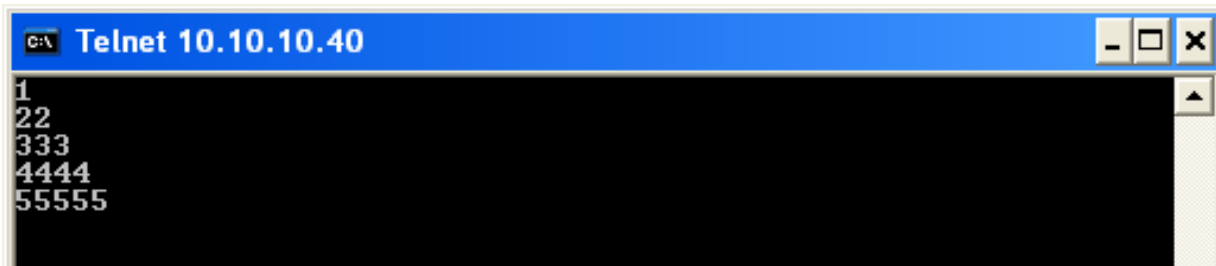
Subject :- Shell-Programming

(22) Write a shell script to print following pattern

```
1
22
333
4444
55555
```

shell script to print a piramid

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



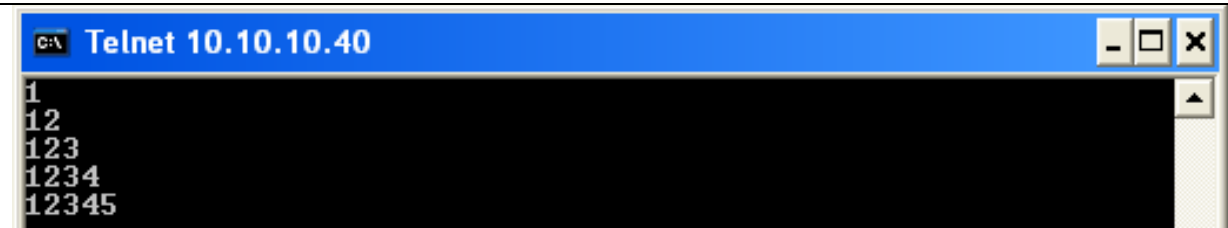
The screenshot shows a terminal window titled "Telnet 10.10.10.40". The terminal output displays the following pattern:

```
1
22
333
4444
55555
```

(23) Write a shell script to print following pattern

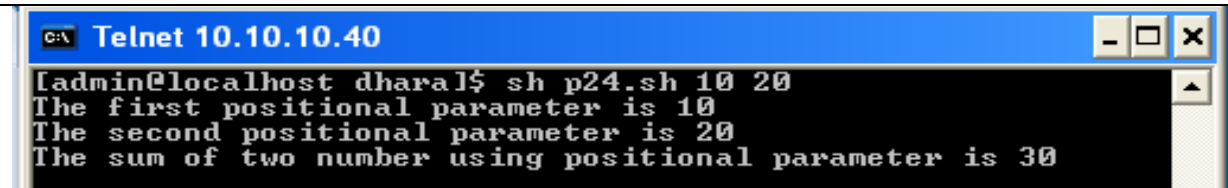
```
1
12
123
1234
12345
```

```
# shell script to print a piramid
clear
for (( i=1;i<=5;i++ ))
do
    for (( j=1;j<=i;j++ ))
    do
        echo -n $j
    done
    echo ""
done
```



(24) Write shell script to demonstrate sum of two number using positional parameter.

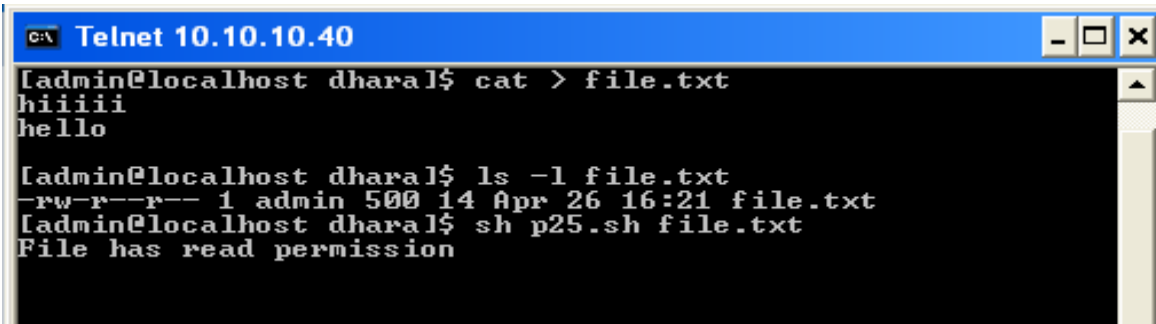
```
# shell script to demonstrate positional parameter
clear
echo "The first positional parameter is" $1
echo "The second positional parameter is" $2
sum=`expr $1 + $2`
echo "The sum of two number using positional parameter is" $sum
```



Subject :- Shell-Programming

(25) Write shell script to enter any file and check that file has read permission or not.

```
# shell script to check file has read permission or not
clear
if [[ -r $1 ]]
then
    echo "File has read permission"
else
    echo "File has no read permission"
fi
```



The screenshot shows a Telnet session on 10.10.10.40. The user 'admin' at 'localhost' runs the following commands and receives the following output:

```
[admin@localhost dhara1$ cat > file.txt
hiiii
hello


[admin@localhost dhara1$ ls -l file.txt
-rw-r--r-- 1 admin 500 14 Apr 26 16:21 file.txt
[admin@localhost dhara1$ sh p25.sh file.txt
File has read permission
```

(26) Write a shell script to check a number is prime or not.

```
# shell script to check whether no is prime or not?
clear
echo "Enter a number: "
read num
i=2

while [ $i -lt $num ]
do
  rem=`expr $num % $i`
  if [ rem -eq 0 ]
  then
    echo "$num is not a prime number"
    echo "Since it is divisible by $i"
    exit
  fi
  i=`expr $i + 1`
done

echo "$num is a prime number "
```



A terminal window screenshot showing the execution of a shell script. The prompt is 'L2-43+stud@L2-43 ~'. The user enters '\$ sh p26.sh'. The script prompts 'Enter a number: 13' and outputs '13 is a prime number'.

(27) Write a shell script to check a number is armstrong or not.

```
# shell script to check a number is armstrong or not?
```

```
Clear
```

```
echo "Enter a number: "
```

```
read num
```

```
x=$num
```

```
sum=0
```

```
r=0
```

```
n=0
```

```
while [ $x -gt 0 ]
```

```
do
```

```
    r=`expr $x % 10`
```

```
    n=`expr $r \* $r \* $r`
```

```
    sum=`expr $sum + $n`
```

```
    x=`expr $x / 10`
```

```
done
```

```
if [ $sum -eq $num ]
```

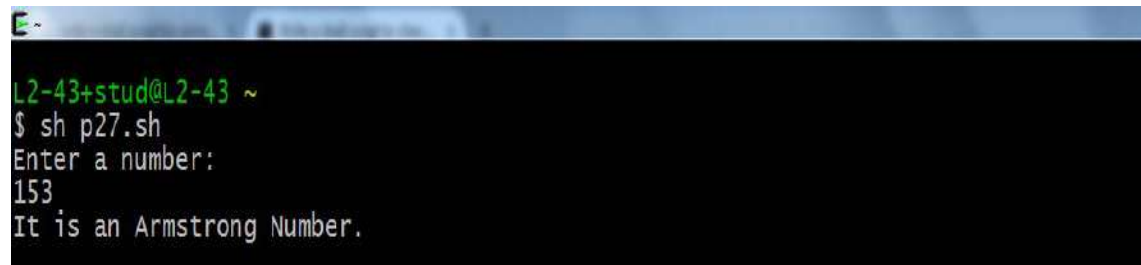
```
then
```

```
echo "It is an Armstrong Number."
```

```
else
```

```
echo "It is not an Armstrong Number."
```

```
fi
```



```
E~  
L2-43+stud@L2-43 ~  
$ sh p27.sh  
Enter a number:  
153  
It is an Armstrong Number.
```

Lab Manual
Developed at
Computer Science Laboratory
Of
Shree M.M.Ghodasara Mahila College
Under guidance of

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Lab Incharge	Mr. Rajesh Makwana
Faculty	Prof. Komal Makwana

~ There is no alteration of Hard work