1. Write a shell program to print "HELLO WORLD"

```
echo "Hello World!"
```

Output

```
> chmod 755 hellowoord.sh
> ./hellowoorld.sh
> Hello World!
```

2. Write a program to find factorial of Number

```
factorial()
{
    if(( $1 <= 1 ))
    then
        echo 1;
    else
        res=$(factorial $(($1-1)));
        echo $(($1 * res ));
    fi
}
```

```
echo "Enter Range:";
read n;
factorial $n;
```

Output

```
> bash factsh
> Enter Range: 5
> 120
```

3. Write a shell script to find the largest among the 3 given numbers

```
echo "Enter the 3 numbers"
read a b c

if (( $a > $b ))
    then
        if (( $a > $c ))
        then
            echo "$a is the largest"
        else
            echo "$c is the largest"
        fi
fi
```

```
else if (( $a < $b ))
    then
        if (( $b > $c ))
        then
            echo "$b is the largest"
        else
            echo "$c is the largest"
        fi
    fi
```

Output

```
> bash 3largest.sh
> Enter the 3 numbers 32 102 -11
> 102 is the largest
```

4. Write a shell script program to develop a calculator.

```
echo "Simple calculator"
res=0
i="y"
```

```
while [ $i = "y" ]
do
    echo "enter first and second
          number space separated"
    read n1 n2
    echo "1. Addition"
    echo "2. Subtraction"
    echo "3. Multiplication"
    echo "4. Division"
    echo "Enter choice"
    read ch

    case $ch in
        1). res=$(echo "$n1 + $n2" | bc)
            echo "Addition is = "$res;;
        2) res=$(echo "$n1 - $n2" | bc)
            echo "Subtraction is = "$res;;
        3) res=$(echo "$n1 * $n2" | bc)
            echo "Mul is = "$res;;
```

```
4) res=$(echo "$n1/$n2" | bc)
        echo "div is :" $res ;;
*) echo "Invalid choice"

esac

echo "Do you want to continue"
    read i
if [ $i != "y" ]
then
        exit
fi

done
```

output

```
> bash calculator.sh
> Simple Calculator
> enter first and second number space
  separated 20 10

> 1. Addition
  2. Subtraction
  3. Multiplication
  4. Division

  Enter choice, 1
```

> Addition is 30

> Enter Do you want to continue ? y

: (20, 10)

> Enter choice 2

> Subtraction is 10

> Do you want to continue y

: (20, 10)

> Enter choice 3

> Mul is 200

> Do you want to continue y

: (20, 10)

> Enter choice 4

> DN is 2

> Do you want to continue n

5. Write a shell script to find how many terminals has this user logged in

```
if [$# -eq 1]
 then
      who > user.1st
      echo "$1 User is logged at"
      grep -c $1 user.1st
 else
      echo "Pls enter User Name"
 fi
```

Output

```
> bash users.sh deepak
>deepak User is logged at
 1
```

6. Write a shell script to reverse the contents of a file.

```
if [$# -eq 1]
then
    if [-f $1]
    then
        a=`rev $1`
        echo "Reverse of $1"
        cat $1
        echo " is --> $a"
        else
        echo "File does not exist"
    fi
else
    echo "Please enter file name or path"
fi
```

an.txt

```
This is the anonymous file...
```

Output

Reverse of

> bash reverse_file.sh an.txt

> Reverse of an.txt

This is the anonymous file...

is -> ... elif suomynona eht si sihT

7. Write a shell script program to check whether the given number is even or odd

```
echo "Enter the value"
read n
res=$(( $n % 2 ))
if (( $res != 0 ))
  then
    echo "$n is odd"
else
    echo "$n is even"
fi
```

Output

```
>bash oddeven.sh
> Enter the value 5
> 5 is odd
```

2. Shell Script program to check whether given file is a directory or not

```
echo -> "Please enter Directory name you
        wish to search"
read dir
for filename in "/home/me/Desktop/$dir"/*
do
    if (-f $filename)
    then
      echo $filename
    fi
done
```

Output

9. Shell script program to count number of files in a Directory

```
if [-d "$@"]
then
    find "$@" -type f | ls -l "$@" | wc -l
        echo "Number of files is $@"
    find "$@" -type d | ls -l "$@" | wc -l
        echo "Number of directories is $@"
```

Output

10. Shell program to reverse a number

```
echo "Enter a number"
read n
sd=0
rev=0
while [ $n -gt 0 ]
do
   sd=$(( $n % 10 ))
   rev=$(( $rev * 10 + $sd ))
   n=$(( $n/10 ))
done
echo "Reverse number is" $rev
```

Output

```
> bash reverse.sh
> Enter a number
  123
  Reverse number is 321
```

11. Write a shell script to add and subtract two numbers.

```
echo "Enter two values space seperated"
read a b
add=$(( $a + $b ))
sub=$(( $a - $b ))
echo "Addition of $a and $b is $add"
echo "Subtraction of $a and $b is $sub"
```

Output

```
>bash addsub.sh
> Enter two values space seperated.
  30 20
  Addition of 30 and 20 is 50
  Subtraction of 30 and 20 is 10
```

12. Write a shell script to read scores and find the total.

```
echo "Enter your name"
read name
echo "Enter two scores space seperated"
read s1 s2
```

```
total=$(( $s1 + $s2 ))
echo "Hello $name"
echo "Total mark: $total"
```

Output

```
>bash score.sh
>Enter your name
 Deepak
 Enter two scores space separated
 50 50
 Hello Deepak
 Total mark: 100
```

13 Combine String variables

```
string1="Linux"
string2="Hint"
echo "$string1 $string2"
string3="$string1 $string2"
string3+=" is a good tutorial blog site"
echo $string3
```

Output

```
>bash stringconcat.sh
> Linux Hint
  Linux Hint is a good tutorial blog site
```

14. Get substring of string

```
str= "Learn Linux from Linux Hint"
substr= ${str:6:5}
echo "$substr"
```

Output

```
Linux
```

15. Make Directory

```
echo "Enter directory name"
read ndir
`mkdir $ndir`
```

Output

```
>Ebash makedir.sh
> Enter directory name
   Jack
>ls
  Jack
```

16. Read a file

book.txt

1. Pro AngularJS
2. Learning JQuery
3. PHP Programming
4. CodeIgniter 3

readfile.sh

```
file='book.txt'
while read line;
do
    echo $line
done < $file
```

~~test~~ Output

```
>bash readfile.sh
> 1. Pro AngularJS
  2. Learning JQuery
  3. PHP Programming
  4. CodeIgniter 3
```

17. Delete a file

```
echo "Enter filename to remove"
read fn
rm -i $fn
```

Output

```
>ls
>an.txt  deletefile.sh
>bash deletefile.sh
> Enter filename to remove
  an.txt
  rm: remove regular file 'an.txt'? y
>ls
> deletefile.sh
```

18. Append to File

```
echo "Before appending the file"
cat book.txt
echo "5. Learning Laravel 5" >> book.txt
echo "After appending the file"
cat book.txt
```

Output

> bash append.sh

> Before appending the file

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3. PHP Programming
4. CodeIgniter 3

After appending the file

1. Pro AngularJS
2. Learning JQuery
3. PHP Programming
4. CodeIgniter 3
5. Learning Laravel 5

14. Test if file exist

```
filename=$1
if [-f "$filename" ];
 then
    echo "file exists"
else
   echo "file does not exists"
fi
```

Output

```
>bash fileexist.sh 'book.txt'
>File exists
```

20. Get Parse Current Date

```
Year='date +%Y'
Month='date +%m'
Day='date +%d'
Hour='date +%H'
Minute='date +%S'
echo 'date'
echo "Current Date is : $Day-$Month-$Year"
echo "Current Time is : $Hour:$Minute:$Second"
```

Output

```
>bash 20.sh
>Sunday 29 May 2022 11:29:07 AM IST
 Current Date is : 29-05-2022
 Current Time is : 11:29:07
```

21. Wait Command

```
echo "wait command" &
process_id=$!
wait $process_id
echo "Exited with status $?"
```

Output

```
wait command
Exited with status 0
```

22. Sleep Command

```
echo "wait for 5 seconds"
sleep 5
echo "Completed"
```

Output

```
wait for 5 seconds
Completed
```

23. Write shell script to show various system configuration.

```
echo "Logged in users:"
who
echo "Logging Names:"
users
echo "Current Shell:"
echo $SHELL
echo "Home Directory:"
echo $HOME
echo "Operating System type:"
uname -O
echo $OSTYPE
Echo "Path Settings:
~~Current working directory:~~"
~~Pwd~~ echo $PATH
echo "Current working directory:"
pwd
echo "No. of logged in users:"
users | wc -w
```

Output

```
Logged in users:
deepak   :0           2022-05-29 10:39 (:0)

Login Names:
deepak

Current shell:
/bin/bash

Operating System type:
GNU/Linux

Linux-gnu

Path Settings:
/usr/local/sbin:/usr/local/bin:/usr/sbin
/usr/bin:/sbin:/bin:/usr/games:/usr/local/
games:/snap/bin

Current working directory:
/home/deepak/Desktop/Shell

No. of logged in users:
1
```