

1. Write a script to find area of a circle

```
echo -n "Enter the radius of a circle : "  
read r  
area=$(echo "scale=2;3.14 * ($r * $r)" |  
bc)  
d=$(echo "scale=2;2 * $r"|bc)  
circumference=$(echo "scale=2;3.14 * $d"|  
bc)  
echo "Area of circle is $area"  
echo "Circumference of circle is  
$circumference"
```

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

```
echo "Enter a number "  
read n  
if [ `expr $n % 2` -eq 0 ]  
then  
echo "Given number $n is even"  
else  
echo "Given number $n is Odd"  
fi
```

3. Write a shell script to make a menu driven calculator using case

```
clear  
sum=0  
i="y"
```

```
echo " Enter one 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 + $n2`
    echo "Sum ="$sum;;
    2)sum=`expr $n1 - $n2`
    echo "Sub = "$sum;;
    3)sum=`expr $n1 \* $n2`
    echo "Mul = "$sum;;
    4)sum=`expr $n1 / $n2`
    echo "Div = "$sum;;
    *)echo "Invalid choice";;
esac
echo "Do u want to continue ?"
read i
if [ $i != "y" ]
then
    exit
fi
done
```

4. Write a shell script to find the greatest of three numbers

```
echo Enter First Number
read a
echo Enter Second Number
read b
echo Enter Third Number
read c
l=$a
if [ $b -gt $l ]
then
l=$b
fi
if [ $c -gt $l ]
then
l=$c
fi
echo Largest of $a $b $c is $l
```

5. Write a shell script to compute mean and standard deviation of three numbers

```
echo Enter first numbers
read a
echo Enter second Number
read b
echo Enter Third Number
read c
m=$(( ($a + $b + $c) / 3))
p=`expr $a - $m`
q=`expr $b - $m`
```

```

r=`expr $c - $m`
d=$(( ($p * $p + $q * $q + $r * $r) / 3 ))
w=$(echo "sqrt ( $d )" | bc -l)
echo "Mean of $a, $b, $c is $m"
echo "Standard deviation is $w"

```

6. Write a shell script to find sum of all digits from a given number

```

echo Enter a number
read n
s=0
p=$n
while [ $n -gt 0 ]
do
r=`expr $n % 10`
s=`expr $s + $r`
n=`expr $n / 10`
done
echo "Sum of digit of given no $p is $s "

```

7. Write a shell script to find reverse of a number

```

echo Enter a number
read n
s=0
p=$n
while [ $n -gt 0 ]
do
r=$(( $n % 10 ))

```

```

        s=$(( $s * 10 + $r ))
        n=$(( $n / 10 ))
done
echo "Reverse of given no $p is $s "

```

8. Write a shell script to find prime numbers upto a given number

```

echo Enter a limit
read limit
n=2
while [ $n -le $limit ]
do
    i=2
    f=0
    while [ $i -lt $n ]
    do
        if [ `expr $n % $i` -eq 0 ]
        then
            f=1
            break;
        fi
        i=`expr $i + 1`
    done
    if [ $f -eq 0 ]
    then
        echo $n
    fi
    n=`expr $n + 1`
done

```

9. Write a shell script to find n fibonacci numbers

```
echo Enter a Limit
read num
a=1
b=0
c=0
n=1
while [ $n -le $num ]
do
    echo $c
    c=$(( $a + $b ))
    a=$b
    b=$c
    n=$(( $n + 1 ))
done
```

10. Write a shell script to check whether a given number is Armstrong or not

```
echo Enter a Number
read n
s=0
p=$n
while [ $n -gt 0 ]
do
    r=$(( $n % 10 ))
    s=$(( $s + $r * $r * $r ))
    n=$(( $n / 10 ))
done
if [ $p -eq $s ]
then
    echo Given number is Armstrong
```

```
else
echo Given number is Not Armstrong
fi
```

11. Write a shell script to reverse a string and check whether a given string is palindrom or not

```
echo "Enter a string "
read s
t=`echo $s|wc -c`
t=`expr $t - 1`
while [ $t -ne 0 ]
do
temp=`echo $s|cut -c $t`
tem1=`echo $tem1$temp`
t=`expr $t - 1`
done
echo "Reverse of the string is $tem1"
if [ "$s" == "$tem1" ]
then
echo Given String $s is Palindrom
else
echo Given String $s is Not Palindrom
fi
```

12. Write a shell script to count no of line, words and characters of a input file

```
echo Enter the filename
read file
w=`cat $file | wc -w`
```

```
c=`cat $file | wc -c`  
l=`grep -c "." $file`  
echo Number of characters in $file is $c  
echo Number of words in $file is $w  
echo Number of lines in $file is $l
```

13. Code for Write a shell program to convert all the contents into the uppercase in a particular file in Unix

```
echo Enter the filename  
read filename  
echo Contents of $filename before converting  
to uppercase  
echo -----  
-----  
cat $filename  
echo -----  
-----  
echo Contents of $filename after converting to  
uppercase  
echo -----  
-----  
cat $filename | tr '[a-z]' '[A-Z]'  
echo -----  
-----
```

14. Write a script to find the value of one number raised to the power of another. Two numbers are entered through the keyboard.

```
echo "Input number"
```



```
read no
echo "Input power"
read power
counter=0
ans=1
while [ $power -ne $counter ]
do
    ans=`expr $ans \* $no`
    counter=`expr $counter + 1`
done
echo "$no power of $power is $ans"
```

15. Write a shell script find the factorial of a given number

```
echo "Total no of factorial wants"
read n

fact=1
while [ $n -gt 0 ]
do
    fact=`expr $fact \* $n`
    n=`expr $n - 1`
done
echo "Total of factorial is $fact"
```

16. An employee Basic salary is input through keyboard where da is 40% of basic salary and hra is 20% of basic salary. Write a program to calculate gross salary

```
echo "Enter ur basic salary "
```

```
read sal
```

```
da=`expr $sal \* 40 / 100`  
ha=`expr $sal \* 20 / 100`  
Nsal=`expr $sal + $da + $ha`  
echo "ur Basic Salary          $sal "  
echo "ur Dearness Allowance    $da "  
echo "Ur House rent           $ha "  
echo "                        -----
```

```
--"
```

```
echo "Ur Net Salary is      Rs. $Nsal "
```

17. Write a shell script to find the average of the number entered as command line arguments

```
sum=0  
for i in $*  
do  
    sum=`expr $sum + $i`  
done  
echo "Summation of "$#" no. is: "$sum
```

18. Code for Shell script which whenever gets executed displays the message "Good Morning/Good afternoon /Good Evening" depending on the time it get executed"

```
clear  
hours=`date|cut -c12-13`  
if [ $hours -le 12 ]  
then
```

```

        echo "Good Morning"
else
    if [ $hours -le 16 ]
    then
        echo "Good Afternoon"
    elif [ $hours -le 20 ]
    then
        echo "Good Evening"
    else
        echo "Good Night"
    fi
fi
fi

```

19. Write a shell script to Display Banner, calander of given year

```

echo Enter a word for banner
read b
banner $b
echo Enter a year
read y
cal $y

```

20. Code for a program to display current date and time, number of users , terminal name, login date and time

```

u=`who am i | cut -f1 -d' '`
d=`who am i | cut -f10 -d' '`
t=`who am i | cut -f11 -d' '`
echo "Today is `date +%D`"
echo "Current time is `date | cut -f5 -d' '`"

```

```
echo "As of now `who | wc -l` user are login  
to the system"  
echo "My details :-----"  
echo "User Name $u"  
echo "Login Date is $d"  
echo "Current Login Time is $t"
```

21. Write a shell script which uses all the file test operators

```
echo "Enter a file name "  
read file  
if [ -e $file ]  
then  
    echo "File exists"  
  
    if [ -r $file ]  
    then  
        echo "File has read access"  
    else  
        echo "File does not have read access"  
    fi  
  
    if [ -w $file ]  
    then  
        echo "File has write permission"  
    else  
        echo "File does not have write  
permission"  
    fi  
  
    if [ -x $file ]
```

```
then
    echo "File has execute permission"
else
    echo "File does not have execute
permission"
fi

if [ -f $file ]
then
    echo "File is an ordinary file"
else
    echo "This is sepcial file"
fi

if [ -d $file ]
then
    echo "File is a directory"
else
    echo "This is not a directory"
fi

if [ -s $file ]
then
    echo "File size is zero"
else
    echo "File size is not zero"
fi

else
    echo "File does not exist"
fi
```

22. Write a shell script to copy the contents of file to another. Input file names through command line. The copy should not be allowed if second file exists.

```
if [ -e $1 ]
then
    if [ -e $2 ]
    then
        echo File $2 already exists does not make
copy
    else
        cp $1 $2
    fi
else
    echo File $1 Does not exists
fi
```

23. Write a shell script to find number of vowels, consonants, numbers in a given string.

```
clear
echo "Type any String"
read string

length=`echo $string | wc -c`
nvowels=0
nconsonants=0
ndigits=0
```

```

while [ $length -gt 1 ]
do
    length=`expr $length - 1`
    h=`echo $string | cut -c$length`

    case $h in
        [AaEeIiOoUu]) nvowels=`expr $nvowels +
1`
        ;;

        [BbCcDdFfGgHhJjKkLlMmNnPpQqRrSsTtVvWwXxYyZz])
            nconsonants=`expr $nconsonants + 1`
            ;;

        [0-9]) ndigits=`expr $ndigits + 1`
        ;;
    esac
done

echo "Number of Vowels      : $nvowels"
echo "Number of Consonants   : $nconsonants"
echo "Number of Digits       : $ndigits"

```

24. Code for Shell script to perform operations like display, list, make directory and copy, rename, delete

```

i="y"
while [ $i = "y" ]
do
    echo "1.Display current dir"

```

```
    echo "2.Listing the dir"
    echo "3.Make a dir"
    echo "4.Copy a file"
    echo "5.Rename file"
    echo "6.Delete file"
    echo "7.Exit"
echo "Enter your choice"
read ch
case $ch in
    1)echo "Current Dir is : "
    pwd;;
    2)echo "Directories are"
    ls;;
    3)echo "Enter dir name to create"
    read d
    mkdir $d
    echo "$d Dir is created";;
    4)echo "Enter filename from copy"
    read f1
    echo "Enter filenm2 to be copied"
    read f2
    cp $f1 $f2
    echo "$f2 is copied from $f1 ";;
    5)echo "Enter file name to rename"
    read f1
    echo "Enter new name of file"
    read f2
    mv $f1 $f2
    echo "$f1 is renamed as $f2 ";;
    6)echo "Enter any filenm to be delete"
    read f1
    rm $f1
```



```
        echo $f1" is deleted";;
        *)echo "Invalid choice entered";;
    esac
    echo "Do u want to continue ? "
    read i
    if [ $i != "y" ]
    then
        exit
    fi
done
```

25. Write a shell script to compare two files and remove one of them if they are same

```
echo "Enter first file name "
read file1
echo "Enter second file name "
read file2
if [ -f $file1 ]
then
    if [ -f $file2 ]
    then
        if [ `cmp $file1 $file2` =='' ]
        then
            rm $file2
            echo "File $file2 Removed "
        fi
    else
        echo File $file2 does not Exists
    fi
else
    echo File $file1 does not Exist
```

fi

26. Write a shell script to create a file phonebook and do the following, add name and phonenumber, display all records , search for a record, delete a record

```
ch=0
while [ $ch -lt 5 ]
do
clear
echo "1. Add new Record "
echo "2. Display"
echo "3. Search"
echo "4. Delete"
echo "5. Exit"
echo "Enter your choice "
read ch
case $ch in
1)      echo Enter name
        read name
        echo Enter Phone Number
        read phone
        echo "$name $phone" >> phonebook ;;
2)      echo "Name          Phone "
        cat phonebook;;
3)      echo "Enter a name to search "
        read sname
        nm=`grep $sname  phonebook | cut -f2`
        echo "Phone number of $sname is $nm";;
4)      echo "Enter a name to delete "
        read nm
```

```

while read line
do

    if [ `echo $line | cut -f1 -d' '` != $nm
]
    then
        echo $line >> temp
    fi

done < phonebook
cp temp phonebook
rm temp
echo Record of $nm deleted;;
esac
read
done

```

27) Write a shell script to accept student number, name, marks in 5 subjects. Find total, average and grade.

```

Rules:  avg>=90 then grade A
        Avg<90  && Avg>=80 then grade B
        Avg<80  && Avg>=60 then grade C
        Avg<60  && Avg>=40 then grade D
        Avg<40  then grade E

```

```

echo -n "Enter Regno "
read regno
echo -n "Enter Name   "
read sname

```

```

for i in 1 2 3 4 5
do
    echo -n "Enter mark of subject$i "
    read mark[$i]
done
s=0
a=0
for i in 1 2 3 4 5
do
    s=`expr $s + ${mark[$i]} `
done
a=`expr $s / 5 `
if [ $a -ge 90 ]
then
gr="A"
elif [ $a -ge 80 ]
then
gr="B"
elif [ $a -ge 60 ]
then
gr="C"
elif [ $a -ge 40 ]
then
gr="D"
else
gr="E"
fi

```

```

echo "Register number      :    $regno "
echo "Student Name        :    $sname "
echo "Total Mark of 5 Subjects    :    $s      "
echo "Average Mark of 5 Subject :    $a      "

```

```
echo "Grade          : $gr "
```

28) Write a shell script to read 10 numbers in a array and sort the number in assending order

```
for i in {1..10}
do
    echo "Enter a number "
    read a[$i]
done

for i in {1..10}
do
    for j in {1..10}
    do
        if [ ${a[$i]} -lt ${a[$j]} ]
        then
            t=${a[$i]}
            a[$i]=${a[$j]}
            a[$j]=$t
        fi
    done
done
echo "Sorted Numbers ....."
echo "===== "
for i in {1..10}
do
    echo ${a[$i]}
done
```