

1] Shell program to print reverse of command line argument

```
for i in $*
do
echo $i>>a
done
c=$#
while [ $c -gt 0 ]
do
rev=`head -$c a|tail -1`
echo $rev
c=`expr $c - 1`
done
rm a
```

Output

```
[root@localhost ~]# sh cmdrev 1 2 3 a b c
c
b
a
3
2
1
```

2] Shell program to find factorial of given number

```
echo enter the number
read n
fact=1
while [ $n -ge 1 ]
do
fact=`expr $fact '*' $n`
n=`expr $n - 1`
done
echo $fact
```

Output

```
[root@localhost ~]# sh fact
enter the number
6
720
```

```
[root@localhost ~]# sh fact
enter the number
5
120
```

3] Shell program to perform arithmetic operation using case statement

```

echo enter any two numbers
read a b
i=1
while [ $i -le 50 ]
do
echo "1.Addition"
echo "2.Substraction"
echo "3.Multiplication"
echo "4.Division"
echo "5.Exit"
echo enter your choice
read ch
case $ch in
1)c=`expr $a + $b`
  echo The addition is $c
  ;;
2)c=`expr $a - $b`
  echo The substraction is $c
  ;;
3)c=`expr $a '*' $b`
  echo The multiplication is $c
  ;;
4)c=`expr $a / $b`
  echo The division is $c
  ;;
5)exit
;;
*) echo "Enter proper value"
;;
esac
i=`expr $i + 1`
done

```

Output

```
[root@localhost ~]# sh arithcase
enter any two numbers
3 5
1.Addition
2.Substraction
3.Multiplication
4.Division
5.Exit
enter your choice
1
The addition is 8
1.Addition
2.Substraction
3.Multiplication
4.Division
5.Exit
enter your choice
3
The multiplication is 15
1.Addition
2.Substraction
3.Multiplication
4.Division
5.Exit
enter your choice
7
Enter proper value
1.Addition
2.Substraction
3.Multiplication
4.Division
5.Exit
enter your choice
5
```

4] Check given string is palindrome or not

```

clear
echo enter the string
read str
l=`echo $str|wc -c`
while [ $l -gt 0 ]
do
t=`echo $str|cut -c$l`
rev=`echo $rev$t`
echo $rev
l=`expr $l - 1`
done
echo reverse string is $rev
if [ $str == $rev ]
then
echo string is palindrom
else
echo string is not palindrom
fi

```

Output

```

[root@localhost ~]# sh palstr
enter the string
nitin

n
ni
nit
niti
nitin
reverse string is nitin
string is palindrome
[root@localhost ~]# sh palstr
enter the string
111
1
11
111
reverse string is 111

string is palindrom

```

5] Shell program to find sum of digit of given number

```
echo "Enter the number-"  
read n  
sum=0  
while [ $n -gt 0 ]  
do  
    r=`expr $n % 10`  
    sum=`expr $sum + $r`  
    n=`expr $n / 10`  
done  
echo $sum
```

Output

```
[root@localhost amit]# sh SumOfDigit  
Enter the number-  
132  
6
```

```
[root@localhost amit]# sh SumOfDigit  
Enter the number-  
333  
9
```

6] Write and execute a LINUX shell program that presents multiple choices question, gets the user's answer and reports back whether it is right or wrong. Finally it shall display the score

```
clear
echo Questions:
sc=0

echo "1 : Which Is The Capital Of India ? "
echo " Options : a) Delhi b) Mumbai c) Nagpur d) Dhule"
read key

if test $key = "a"
then
echo "Your Answer Is Correct "
sc=`expr $sc + 10`
else
echo "Your Answer Is Incorrect "
fi

echo "2 : Which Is The Largest River In World ? "
echo " Options : a) Ganga b) Yamuna c)Nile d)Panzra"
read key

if test $key = "c"
then
echo "Your Answer Is Correct "
sc=`expr $sc + 10`
else
echo "Your Answer Is Incorrect "
fi

echo "3 : How Many Keywords In C Language ? "
echo " Options : a) 40 b) 32 c) 33 d)34 "
read key

if test $key = "b"
then
echo " Your Answer Is Correct "
sc=`expr $sc + 10`
else
```

```
echo " Your Answer Is Incorrect "  
fi  
  
if [ $sc -gt 0 ]  
then  
echo "Congratulation"  
echo "Your Score : $sc "  
else  
echo "Sorry"  
echo "Your Score : $sc"  
fi
```

Output

[root@localhost amit]# sh queans

Questions:

1 : Which Is The Capital Of India ?

Options : a) Delhi b) Mumbai c) Nagpur d) Dhule

a

Your Answer Is Correct

2 : Which Is The Largest River In World ?

Options : a) Ganga b) Yamuna c) Nile d) Panzra

b

Your Answer Is Incorrect

3 : How Many Keywords In C Language ?

Options : a) 40 b) 32 c) 33 d) 34

b

Your Answer Is Correct

Congratulation

Your Score : 20

7] Linux shell program which simulate at least 5 DOS command

```

echo "dir"
echo "date"
echo "del"
echo "cls"
echo "md"
echo "exit"

while [ 1 ]           # While condition is always true if write 1
do
echo -e "C:\>"
read n
case $n in
dir) ls ;;
date) date ;;
del) echo -e "\n\n Enter the file name which you want to delete"
read fn
rm -i $fn
ls ;;
cls) clear ;;
md) echo -e "\n\n Give new directory name"
read d
mkdir $d
ls ;;
exit) exit ;;
*) echo Entered Wrong Command
esac
done

```

Output

```

[root@localhost ~]# sh doscmd
dir
date
del
cls
md
exit

```

```
C:\>  
date  
Wed Oct 10 21:09:26 IST 2012  
C:\>  
md
```

Give new directory name
Amit

```
C:\>  
del
```

Enter the file name which you want to delete
Mca

```
C:\>  
Dir
```

amit	demo1	lll	primeno
amit1	Desktop	ls	printperonly
ASD	f1	nilesh	tal
atr	f2	odd	temp

8] Write shell program get rollno, name and marks of different three file and calculate total and average in proper format

```
i=1
tot=0
n=`cat f1 | wc -l`
echo -e "\n_____MARKSHEET_____"
echo -e "\n\tRno\tName\tMark1\tMark2\tMark3\tTotal\tAvg\t"
while [ $i -le $n ]
do
rn=`cat f1 | head -$i | tail -1 | cut -d " " -f1`
nm=`cat f2 | head -$i | tail -1 | cut -d " " -f2`
m1=`cat f3 | head -$i | tail -1 | cut -d " " -f1`
m2=`cat f3 | head -$i | tail -1 | cut -d " " -f2`
m3=`cat f3 | head -$i | tail -1 | cut -d " " -f3`
tot=`expr $m1 + $m2 + $m3`
avg=`expr $tot / 3`
echo -e "\n\t$rn\t$nm\t$m1\t$m2\t$m3\t$tot\t$avg"
i=`expr $i + 1`
done
```

Out put

```
[root@localhost amit]# cat f1
10
20
30
```

```
[root@localhost amit]# cat f2
10 rahul
20 manoj
30 rani
```

```
[root@localhost amit]# cat f3
10 40 50 60
20 37 56 78
30 67 89 98
```

```
[root@localhost amit]# sh marksheet
```

MARKSHEET

Rno	Name	Mark1	Mark2	Mark3	Total	Avg
10	rahul	40	50	60	150	50
20	manoj	37	56	78	171	57
30	rani	67	89	98	254	84

9] write and execute a LINUX shell program which counts number of words from each file of the current directory and create a summary file with following details

Files with words <=100

Files with words >100 and <500

```
clear
echo "Files With Words <= 100 Are" >> sumary
echo
for i in *
do
if [ -f $i ]
then
words=`cat $i | wc -w`
if [ $words -le 100 ]
then
echo $i      $words >> sumary
fi
fi
done
echo
echo "Files With Words > 100 & < 500 Are" >> sumary
echo
for i in *
do
if [ -f $i ]
then
words=`cat $i | wc -w`
if [ $words -gt 100 -a $words -lt 500 ]
then
echo $i      $words >> sumary
fi
fi
done
```

Output

```
[root@localhost amit]# sh CntWordFile
```

```
[root@localhost amit]# cat summary
```

Files With Words ≤ 100 Are

arith 54

arithcase 79

arithmetic 40

atr 49

binary 91

weight 62

year 26

Files With Words > 100 & < 500 Are

CntWordFile 128

marksheet 146

que_ans 207

sumary 113

summaryword 185

vowel 154

10] WSP Enter the file name by command line and check give name is file,if it is file then removes interactively

```
if [ -f $* ]
then
echo "Give name is file"
rm -i $*
else
if [ -d $* ]
then
echo "Given name is directory."
else
echo "It is not valid directory or file name"
fi
fi
```

Output

```
[root@localhost amit]# sh cmdremove demo
Give name is file
rm: remove regular file `demo1'? y

[root@localhost amit]#
```

11] Shell program enter two numbers and calculate GCD of give number

```
echo Enter two numbers
read n1
read n2
while [ $n1 -ne $n2 ]
do
if [ $n1 -gt $n2 ]
then
n1=`expr $n1 - $n2`
else
n2=`expr $n2 - $n1`
fi
done
echo GCD of given number is $n2
```

Output

```
[root@localhost amit]# sh gcd
Enter two numbers
24
54
GCD of given number is 6

[root@localhost amit]#
```


12] Linux program to receive file name & inform file is exists or not If it's exists then give of access permission and its size.

```
clear
echo enter the file name
read name
if [ -s $name ]
then
if [ -f $name ]
then
echo File is Exist
size=`ls -l $name | cut -c 25-28`
per=`ls -l $name | cut -c 2-10`
echo The size of file $size
echo The Permission of file is $per
else
echo The given is not file
fi
else
echo File Does not exist
fi
```

Output

```
[root@localhost amit]#
enter the file name
sqr
File is Exist
The size of file 89
The Permission of file is  rw-r--r-
```

```
enter the file name
amit
File Does not exists
[root@localhost amit]#
```

13] Linux shell program that accept 3*3 matrix and find the row and column totals

```
clear
echo "Enter the elements of matrix"
i=0
while [ $i -lt 9 ]
do
read mtx[i]
i=`expr $i + 1`
done
echo "The given matrix is"
echo "${mtx[0]}" "${mtx[1]}" "${mtx[2]}"
echo "${mtx[3]}" "${mtx[4]}" "${mtx[5]}"
echo "${mtx[6]}" "${mtx[7]}" "${mtx[8]}"
echo " "
row1=`expr ${mtx[0]} + ${mtx[1]} + ${mtx[2]}`
row2=`expr ${mtx[3]} + ${mtx[4]} + ${mtx[5]}`
row3=`expr ${mtx[6]} + ${mtx[7]} + ${mtx[8]}`

clm1=`expr ${mtx[0]} + ${mtx[3]} + ${mtx[6]}`
clm2=`expr ${mtx[1]} + ${mtx[4]} + ${mtx[7]}`
clm3=`expr ${mtx[2]} + ${mtx[5]} + ${mtx[8]}`

totalrow=`expr $row1 + $row2 + $row3`
totalclm=`expr $clm1 + $clm2 + $clm3`
echo "The Addition of total row is:"
echo $totalrow
echo "The Addition of totalclm is:"
echo $totalclm
```

Output

```
[root@localhost amit]# sh mat_add
```

```
Enter the elements of matrix
```

```
3
```

```
3
```

```
3
```

```
3
```

```
3
```

```
3
```

```
3
```

```
3
```

```
3
```

```
The given matrix is
```

```
3 3 3
```

```
3 3 3
```

```
3 3 3
```

```
The Addition of total row is:
```

```
27
```

```
The Addition of totalclm is:
```

```
27
```

14] Find sum and average of the command line argument

```
sum=0
for i in $*
do
sum=`expr $sum + $i`
done
avg=`expr $sum / $#`
echo The Total is $sum
echo The Average is $avg
```

Output

```
[root@localhost amit] # sh sumavg 10 3
The Total is 13
The Average is 6
```

15] LINUX Shell program to count and print total number of files from given directory. The program should count files in subdirectories also which in turn may contain files and subdirectories

```

line=`ls -l | wc -l`
i=2
cnt=0
cnt0=0
cnt1=0
cnt2=0
while [ $i -le $line ]
do
fn=`ls -l | head -$i |tail -1 |cut -c 46-`
if [ -f $fn ]
then
cnt=`expr $cnt + 1`
else [ -d $fn ]
cnt1=`expr $cnt1 + 1`
cd $fn
echo `pwd`
ln=`ls -l |wc -l`
j=2
while [ $j -le $ln ]
do
fm=`ls -l | head -$j |tail -1 |cut -c 46-`
if [ -f $fm ]
then
cnt0=`expr $cnt0 + 1`
else [ -d $fm ]
cnt2=`expr $cnt2 + 1`
fi
j=`expr $j + 1`
done
echo *****Result Of Subdirectory*****
echo -e "\n Number of files in subdirectory =$cnt0"
echo -e "\n Number of dir in sub dir is =$cnt2"
cd ..
fi
i=`expr $i + 1`
done

```

```
echo *****Result Of Directory*****  
echo -e "\n Number of Files are =$cnt"  
  
echo -e "\n Number of Directory are =$cnt1"
```

Output

```
[root@localhost amit]# sh cnt_dir_file_subdir  
/root/amit/dd  
*****Result Of Subdirectory*****  
  
Number of files in subdirectory =3  
  
Number of dir in sub dir is =2  
*****Result Of Directory*****  
  
Number of Files are =55  
  
Number of Directory are =1  
[root@localhost amit]#
```

16] Linux program to count number of words that start with vowel and number of articles from given file

```

nv=0
na=0
echo Enter File Name
read fname

nl=`cat $fname | wc -l`
i=1

while [ $i -le $nl ]
do
x=`cat $fname | head -$i | tail -1`
nw=`echo $x | wc -w`
j=1

while [ $j -le $nw ]
do
w=`echo $x | cut -d " " -f$j`
c=`echo $w | cut -c1`
j=`expr $j + 1`

if test $w = "a" -o $w = "an" -o $w = "the"
then
na=`expr $na + 1`
fi

if test $c = "a" -o $c = "e" -o $c = "i" -o $c = "o" -o $c = "u"
then
nv=`expr $nv + 1`
fi
done
i=`expr $i + 1`
done
echo No. Of Words Start With Vowel=$nv
echo No. Of Article=$na

```

Output

```
[root@localhost amit]# cat amit
a apple.
earth good morning
hello.
bye bye
the
amit patil.
```

```
[root@localhost amit]# sh vowel
Enter File Name
amit
```

```
No. Of Words Start With Vowel=4
No. Of Article=2
```


17] Linux shell program to count number of article and sentence in give file

```

echo enter the file name
read fname
nl=`cat $fname | wc -l`i=1
na=0
ctw=0
cts=0
while [ $i -le $nl ]do
x=`cat $fname | head -$i | tail -1`
nw=`echo $x | wc -w`
j=1
nc=`echo $x | wc -c`
while [ $j -le $nc ] do
c=`echo $x | cut -c $j`
if ! [ -z $c ]           #The $c value is not null then
if test $c = "." then
cts=`expr $cts + 1`fi
fi
j=`expr $j + 1`
done
k=1
while [ $k -le $nw ]do
w=`echo $x | cut -d " " -f$k`
k=`expr $k + 1`
if test $w = "a" -o $w = "an" -o $w = "the" then
na=`expr $na + 1`fi
done
i=`expr $i + 1`
done
echo No. of sentence are = $cts
echo no. of articles = $na

```

Output

```

[root@localhost amit]# sh cnt_sent
enter the file name
amit
No. of sentence are = 3no.
of articles = 1

```

18] Shell Program print first five line and the line between 10 to 20 in givenfile

```
clear
echo Enter The File Name
read var
echo The first 5 line is
cat $var | head -5
echo The line between 10 to 20 is
cat $var | head -20 | tail -10
```

Output

```
[root@localhost amit]# sh tal
```

```
Enter The File Name
Inputfile
```

```
The first 5 line is
```

```
1
2
3
4
5
```

```
The line between 10 to 20 is
```

```
11
12
13
14
15
16
17
18
19
20
```

19] Find the junk file and remove this file interactively

```

clear
for i in *
do
if [ -f $i ]
then
s=`ls -l $i | cut -d " " -f5`
if [ $s -eq 0 ]
then
echo "$i is Junk File"
rm -i $i
fi
fi
done

```

Output

```
[root@localhost amit]# sh junk
```

```

dr is Junk File
rm: remove regular empty file `dr'? y
dr1 is Junk File
rm: remove regular empty file `dr1'? y
fg2 is Junk File
rm: remove regular empty file `fg2'? y

```

20] Find the Fibonacci series of given number

```
clear
a=0
b=1
i=3
echo Enter the no
read n
echo $a
echo $b
while [ $i -le $n ]
do
c=`expr $a + $b`
echo $c
a=$b
b=$c
i=`expr $i + 1`
done
```

Output

```
[root@localhost amit]# sh fib
```

```
Enter the no
```

```
5
```

```
0
```

```
1
```

```
1
```

```
2
```

```
3
```

21] To check whether number is divisible by 11 or not

```
echo "Enter any Number"
read n
r=`expr $n % 11`
if [ $r -eq 0 ]
then
echo $n " is divisible by 11"
else
echo $n " is not divisible by 11"
fi
```

1. Write a Shell program to check the given number is even or odd. PROGRAM

```
echo "Enter a number:" read n
if [ `expr $n % 2` = 0 ] then
echo "Even number"
else
echo "Odd number"
fi
```

Write a Shell program to check the given number is palindrome or not.

```
echo enter n
read n
num=0
on=$n
while [ $n -gt 0 ]
do
num=$(expr $num \* 10)
k=$(expr $n % 10)
num=$(expr $num + $k)
n=$(expr $n / 10)
done
if [ $num -eq $on ]
then
echo palindrome
else
echo not palindrome
fi
```

write a shell program find the sum of odd and even numbers from a set of numbers in shell program

```
echo "enter"
read num
rev=0
even=0
odd=0
while [ $num -gt 0 ]
do
tmp=$(( $num % 10 ))
if(( $tmp % 2 == 0 ))
then
even=$(( $even + $tmp ))
else
odd=$(( $odd + $tmp ))
fi
rev=$(( $rev * 10 + $tmp ))
num=$(( $num / 10 ))
done
echo the sum of even number
$even
echo the sum of odd number
$odd
```

write a program to check the number prime or not

```
number=53
i=2
flag=0
while test $i -le `expr $number /`
2`
do
if test `expr $number % $i` -eq
0
then
flag=1
fi
i=`expr $i + 1`
done if test $flag -eq 1
then
echo "The number is Not
Prime"
else
echo "The number is Prime"
Fi
```

write a shell program to generate prime numbers between 1 and 50

```
clear
echo "enter the range"
read n
echo "the prime no are:"
m=2
while [ $m -le $n ] do
i=2 flag=0
while [ $i -le `expr $m / 2` ] do
if [ `expr $m % $i` -eq 0 ] then
flag=1 break fi
i=`expr $i + 1`
done
if [ $flag -eq 0 ]
then echo $m fi
m=`expr $m + 1`
done
```

write a shell program to count the number of vowels in a line of text
clear

```
echo "Entre a string to find the
number of Vowels "
read st
len=`expr $st | wc -c`
len=`expr $len - 1`
count=0
while [ $len -gt 0 ]
do
ch=`expr $st | cut -c $len`
case $ch in
[aeiou,AEIOU]) count=`expr
$count + 1` ;;
esac
len=`expr $len - 1`
done
echo "Number of vowels in the
give string is $count"
```

write a shell program to get marks of students from user file percentage basev on percentage display students grade

```

echo "*****"
echo "Student Marksheet"
echo "*****"
echo "Enter Operating System
Marks:"
read os
echo "Enater C++ Marks:"
read cpp
echo "Enater Java Marks:"
read java
echo "*****"
total=`expr $os + $cpp + $java`
echo "Total Marks:$total
percentage=`expr $total / 3`
echo "Percentage:" $percentage
%
if [ $percentage -ge 60 ]
then
echo "Class: First Class
Distinction"
elif [ $percentage -ge 50 ]
then
echo "Class: First class"
elif [ $percentage -ge 40 ]
then
echo "Class: Second class"
else
echo "Class: Fail"
fi

```


**write a shell program to find the smallest number from a set of numbers
or**

write a shell program to find the smallest digit from a number

```

echo "enter a: "
read a
echo "enter b : "
read b
echo "enter c : "
read c
s=$a
if [ $b -lt $s ]
then
s=$b
fi
if [ $c -lt $s ]
then
s=$c
fi
echo Smallest of $a $b $c is $s

```

write a shell program to find the sum of odd digits and even digits from a given number

```
echo enter n value
read n
sumodd=0
sumeven=0
i=0
while [ $i -ne $n ]
do
echo "Enter Number"
read num
if [ `expr $num % 2` -ne 0 ]
then
sumodd=`expr $sumodd + $num`
sumeven=`expr $sumeven+$num`
fi
i=`expr $i + 1`
done
echo Sum of odd numbers = $sumodd
echo Sum of even numbers = $sumeven
```

write a shell program to find the largest number between three numbers

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

write a shell program to print the reverse of a given 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
```

write a shell program to find the sum of n different number

```
echo "Enter Size(N)"
read N

i=1
sum=0

echo "Enter Numbers"
while [ $i -le $N ]
do
    read num
    sum=$((sum + num))
    i=$((i + 1))
done

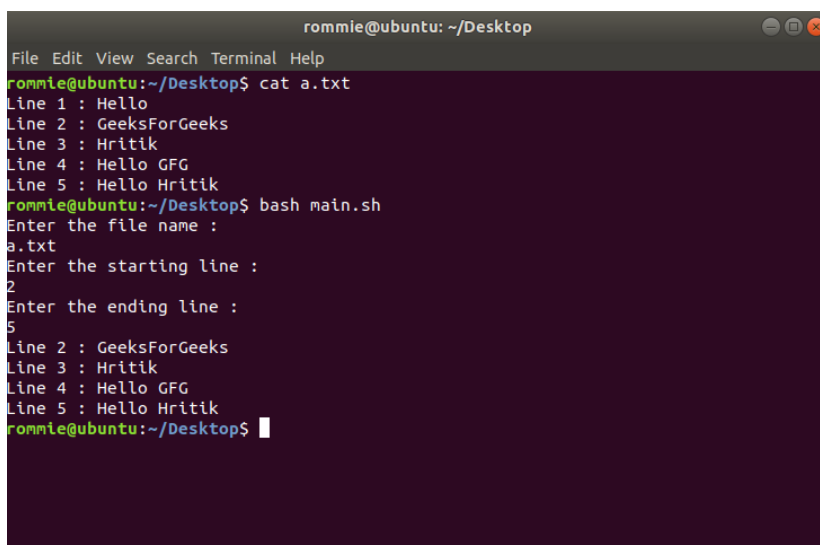
echo $sum
```

write a shell script to find the sum product and average of the command line argument

```
echo "enter four integers"
read a b c d
sum=$(echo "$a + $b + $c + $d" | bc -l)
average=$(echo "$sum / 4" | bc -l)
product=$(echo "$a * $b * $c * $d" | bc -l)
echo "sum = $sum"
echo "Average = $average"
echo "Product = $product"
```

write a shell script to display the line of given file from 10 to 20

```
echo "Enter the file name : "
read f
echo "Enter the starting line : "
read s
echo "Enter the ending line : "
read e
sed -n $s,$e\p $f
```



```
rommie@ubuntu: ~/Desktop
File Edit View Search Terminal Help
rommie@ubuntu:~/Desktop$ cat a.txt
Line 1 : Hello
Line 2 : GeeksForGeeks
Line 3 : Hritik
Line 4 : Hello GFG
Line 5 : Hello Hritik
rommie@ubuntu:~/Desktop$ bash main.sh
Enter the file name :
a.txt
Enter the starting line :
2
Enter the ending line :
5
Line 2 : GeeksForGeeks
Line 3 : Hritik
Line 4 : Hello GFG
Line 5 : Hello Hritik
rommie@ubuntu:~/Desktop$
```