

Shell Code:

```
showmik@showmik-virtual-machine: ~  
showmik@showmik-virtual-machine:~$ cat /etc/shells  
# /etc/shells: valid login shells  
/bin/sh  
/bin/bash  
/usr/bin/bash  
/bin/rbash  
/usr/bin/rbash  
/usr/bin/sh  
/bin/dash  
/usr/bin/dash  
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~  
showmik@showmik-virtual-machine:~$ cat /etc/shells  
# /etc/shells: valid login shells  
/bin/sh  
/bin/bash  
/usr/bin/bash  
/bin/rbash  
/usr/bin/rbash  
/usr/bin/sh  
/bin/dash  
/usr/bin/dash  
showmik@showmik-virtual-machine:~$ which bash  
/usr/bin/bash  
showmik@showmik-virtual-machine:~$ hello.sh  
hello.sh: command not found  
showmik@showmik-virtual-machine:~$ nano  
showmik@showmik-virtual-machine:~$ ./hello.sh  
bash: ./hello.sh: Permission denied  
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~  
GNU nano 6.2 Into_variable.sh  
#!/bin/bash  
a=10  
b=20  
echo a=$a and b=$b  
  
[ Read 4 lines ]  
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location  
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

```
showmik@showmik-virtual-machine:~$ nano Into_variable.sh  
showmik@showmik-virtual-machine:~$ ./Into_variable.sh  
bash: ./Into_variable.sh: Permission denied  
showmik@showmik-virtual-machine:~$ chmod +rx Into_variable.sh  
showmik@showmik-virtual-machine:~$ ./Into_variable.sh  
a=10 and b=20  
showmik@showmik-virtual-machine:~$
```

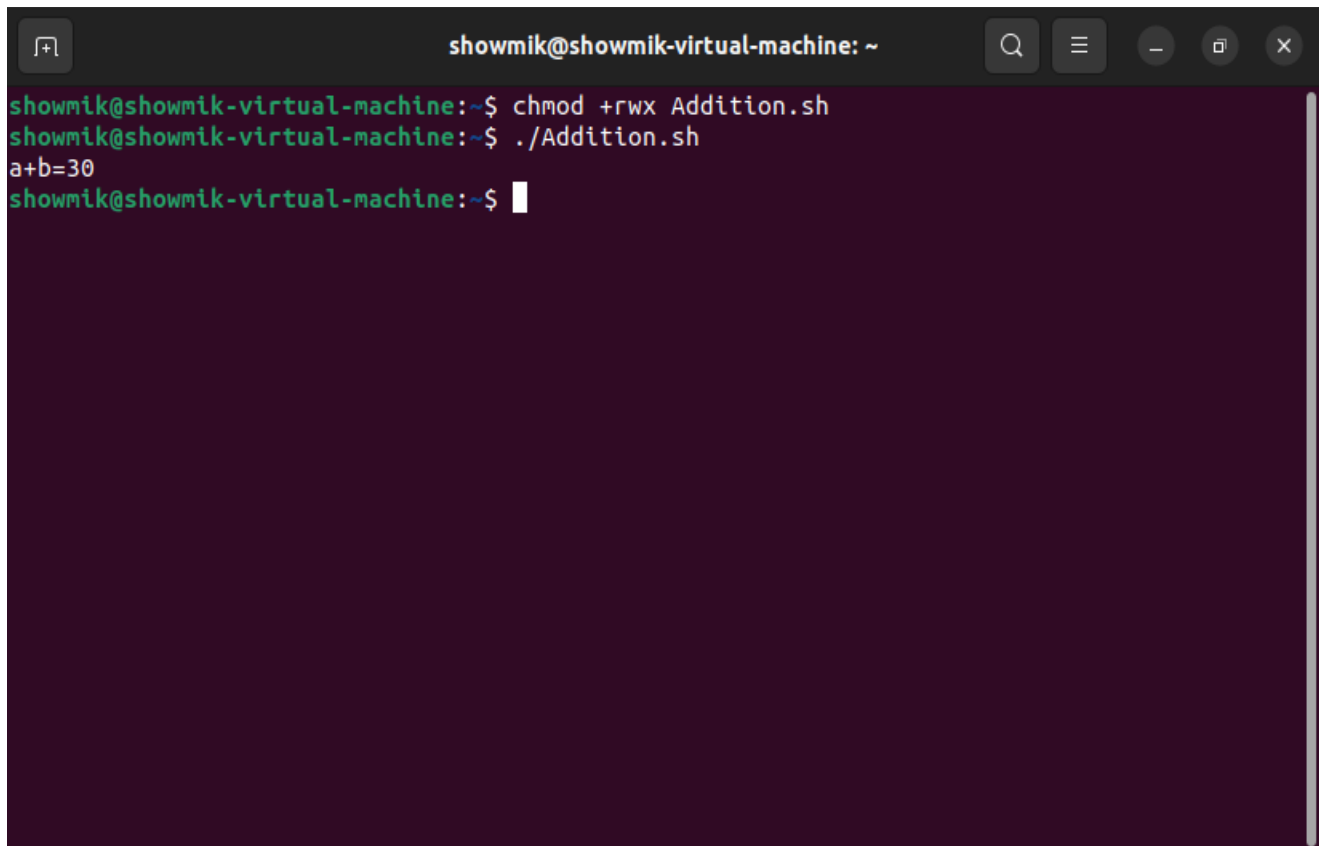
Arithmetic Operations:



```
GNU nano 6.2 Addition.sh
#!/bin/bash
a=10
b=20
echo a+b=$((a+b))
```

Read 4 lines

Help Write Out Where Is Cut Execute Location
Exit Read File Replace Paste Justify Go To Line



```
showmik@showmik-virtual-machine:~$ chmod +rwx Addition.sh
showmik@showmik-virtual-machine:~$ ./Addition.sh
a+b=30
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~  
GNU nano 6.2 Subtraction.sh *  
a=20  
b=10  
echo $((b-a))  
  
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location  
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

```
showmik@showmik-virtual-machine: ~  
showmik@showmik-virtual-machine:~$ chmod +rwx Subtraction.sh  
showmik@showmik-virtual-machine:~$ ./Subtraction.sh  
-10  
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~
GNU nano 6.2 Multiplication.sh
#!/bin/bash
a=20
b=10
c=$((a*b))
echo a*b =$c

[ Read 5 lines ]
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

```
showmik@showmik-virtual-machine: ~
showmik@showmik-virtual-machine:~$ nano Multiplication.sh
showmik@showmik-virtual-machine:~$ chmod +rwx Multiplication.sh
showmik@showmik-virtual-machine:~$ ./Multiplication.sh
a*b =200
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~
GNU nano 6.2 Division.sh
a=20
b=6
c=$((a/b))
echo a/b=$c

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

```
showmik@showmik-virtual-machine: ~
showmik@showmik-virtual-machine:~$ nano Division.sh
showmik@showmik-virtual-machine:~$ chmod +rwx Division.sh
showmik@showmik-virtual-machine:~$ ./Division.sh
a/b=3
showmik@showmik-virtual-machine:~$
```

```
GNU nano 6.2 Power.sh
a=10
b=20
c=$((a+b)**2))
echo a=$a,b=$b
echo "(a+b)^2="
echo $c

[ Read 6 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

```
showmik@showmik-virtual-machine: ~
showmik@showmik-virtual-machine:~$ nano Power.sh
showmik@showmik-virtual-machine:~$ ./Power.sh
a=10,b=20
(a+b)^2=
900
showmik@showmik-virtual-machine:~$
```

```
GNU nano 6.2 Precision.sh *
#!/bin/bash
echo "scale=5;11.211/3"|bc

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

```
showmik@showmik-virtual-machine: ~
showmik@showmik-virtual-machine:~$ touch Precision.sh
showmik@showmik-virtual-machine:~$ chmod +rwx Precision.sh
showmik@showmik-virtual-machine:~$ nano Precision.sh
showmik@showmik-virtual-machine:~$ ./Precision.sh
3.73700
showmik@showmik-virtual-machine:~$
```

```
GNU nano 6.2 PowerPrecision.sh
#!/bin/bash
echo "2^8"|bc -l
# -l is used to invoke math library

[ Read 3 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut      ^T Execute  ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify  ^/ Go To Line
```

```
showmik@showmik-virtual-machine: ~
showmik@showmik-virtual-machine:~$ touch PowerPrecision.sh
showmik@showmik-virtual-machine:~$ nano PowerPrecision.sh
showmik@showmik-virtual-machine:~$ chmod +rwx PowerPrecision.sh
showmik@showmik-virtual-machine:~$ ./PowerPrecision.sh
256
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~  
showmik@showmik-virtual-machine:~$ #square root  
showmik@showmik-virtual-machine:~$ echo "scale=10;sqrt(13)"|bc -l  
3.6055512754  
showmik@showmik-virtual-machine:~$
```

```
showmik@showmik-virtual-machine: ~  
showmik@showmik-virtual-machine:~$ x=$(echo "scale=10;sqrt(13)"|bc -l)  
showmik@showmik-virtual-machine:~$ echo $x  
3.6055512754  
showmik@showmik-virtual-machine:~$
```

```
GNU nano 6.2 InstantRead.sh  
#!/bin/bash  
read -p "Enter id:" id  
read -sp "Enter Password:" password  
echo id=$id and password=$password  
  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location  
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify  ^_ Go To Line
```



```
showmik@showmik-virtual-machine: ~
showmik@showmik-virtual-machine:~$ touch InstantRead.sh
showmik@showmik-virtual-machine:~$ chmod +rwx InstantRead.sh
showmik@showmik-virtual-machine:~$ nano InstantRead.sh
showmik@showmik-virtual-machine:~$ ./InstantRead.sh
Enter id:10
Enter Password:id=10 and password=qwerty
showmik@showmik-virtual-machine:~$
```

Even-Odd Detection:

```
GNU nano 6.2 EvenOdd.sh
#!/bin/bash
echo "Enter two numbers:"
read a b
c=$((a%2))
if [ $c -eq 0 ]
then
    echo $a is even
else
    echo $a is odd
fi
d=$((b%2))
if [ $d -eq 0 ]
then
    echo $b is even
else
    echo $b is odd
fi

[ Read 18 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

```
showmik@showmik-virtual-machine:~$ ./EvenOdd.sh
Enter two numbers:
20 21
20 is even
21 is odd
```

Prime Number 1 to 100:



```
GNU nano 6.2 Prime.sh *
#Prime Number 1 to 100.
for((i=2;i<=100;i++))
do
    a=0
    b=$((i/2))
    for((j=2;j<=b;j++))
    do
        c=$((i%j))
        if [ $c -eq 0 ]
        then
            a=1
        fi
    done
    if [ $a -eq 0 ]
    then
        echo $i
    fi
done
```

File Name to Write: Prime.sh

^G Help	M-D DOS Format	M-A Append	M-B Backup File
^C Cancel	M-M Mac Format	M-P Prepend	^T Browse

```
showmik@showmik-virtual-machine: ~  
showmik@showmik-virtual-machine:~$ touch Prime.sh  
showmik@showmik-virtual-machine:~$ chmod +rwx Prime.sh  
showmik@showmik-virtual-machine:~$ nano Prime.sh  
showmik@showmik-virtual-machine:~$ ./Prime.sh  
2  
3  
5  
7  
11  
13  
17  
19  
23  
29  
31  
37  
41  
43  
47  
53  
59  
61  
67  
71  
73  
79  
83  
89  
97  
showmik@showmik-virtual-machine:~$
```