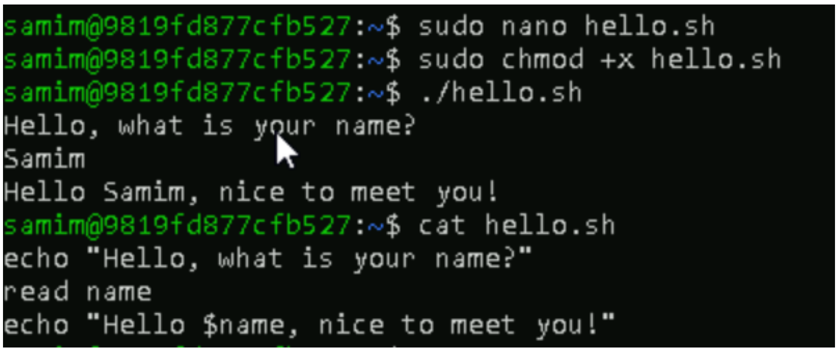
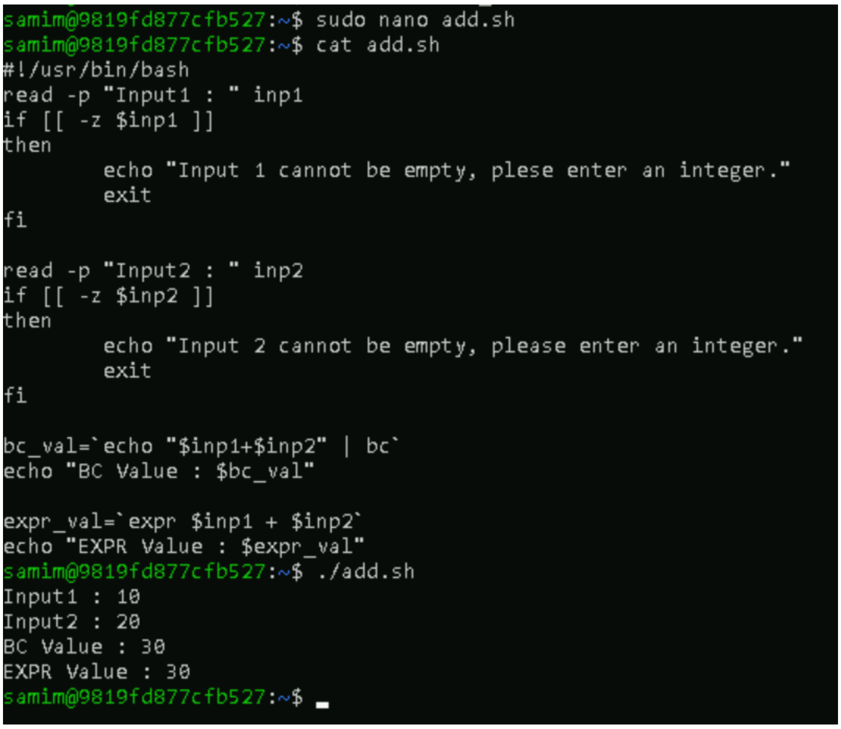
# Linux Programs

Program 1- shell script to read an input.



```
samim@9819fd877cfb527:~$ sudo nano hello.sh
samim@9819fd877cfb527:~$ sudo chmod +x hello.sh
samim@9819fd877cfb527:~$ ./hello.sh
Hello, what is your name?
Samim
Hello Samim, nice to meet you!
samim@9819fd877cfb527:~$ cat hello.sh
echo "Hello, what is your name?"
read name
echo "Hello $name, nice to meet you!"
```

Program 2- shell script to add 2 numbers.



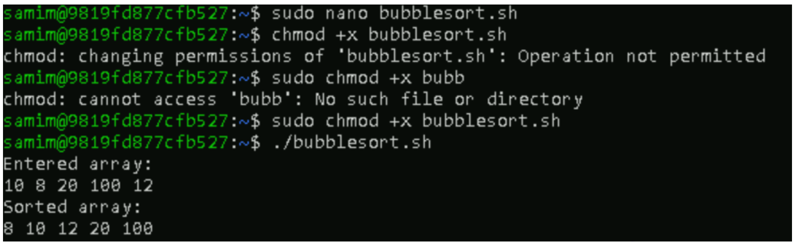
```
samim@9819fd877cfb527:~$ sudo nano add.sh
samim@9819fd877cfb527:~$ cat add.sh
#!/usr/bin/bash
read -p "Input1 : " inp1
if [[ -z $inp1 ]]
then
        echo "Input 1 cannot be empty, plese enter an integer."
        exit
fi

read -p "Input2 : " inp2
if [[ -z $inp2 ]]
then
        echo "Input 2 cannot be empty, please enter an integer."
        exit
fi

bc_val=`echo "$inp1+$inp2" | bc`
echo "BC Value : $bc_val"

expr_val=`expr $inp1 + $inp2`
echo "EXPR Value : $expr_val"
samim@9819fd877cfb527:~$ ./add.sh
Input1 : 10
Input2 : 20
BC Value : 30
EXPR Value : 30
samim@9819fd877cfb527:~$ _
```

Program 3- shell script for bubble sort.



```
samim@9819fd877cfb527:~$ sudo nano bubblesort.sh
samim@9819fd877cfb527:~$ chmod +x bubblesort.sh
chmod: changing permissions of 'bubblesort.sh': Operation not permitted
samim@9819fd877cfb527:~$ sudo chmod +x bubb
chmod: cannot access 'bubb': No such file or directory
samim@9819fd877cfb527:~$ sudo chmod +x bubblesort.sh
samim@9819fd877cfb527:~$ ./bubblesort.sh
Entered array:
10 8 20 100 12
Sorted array:
8 10 12 20 100
```

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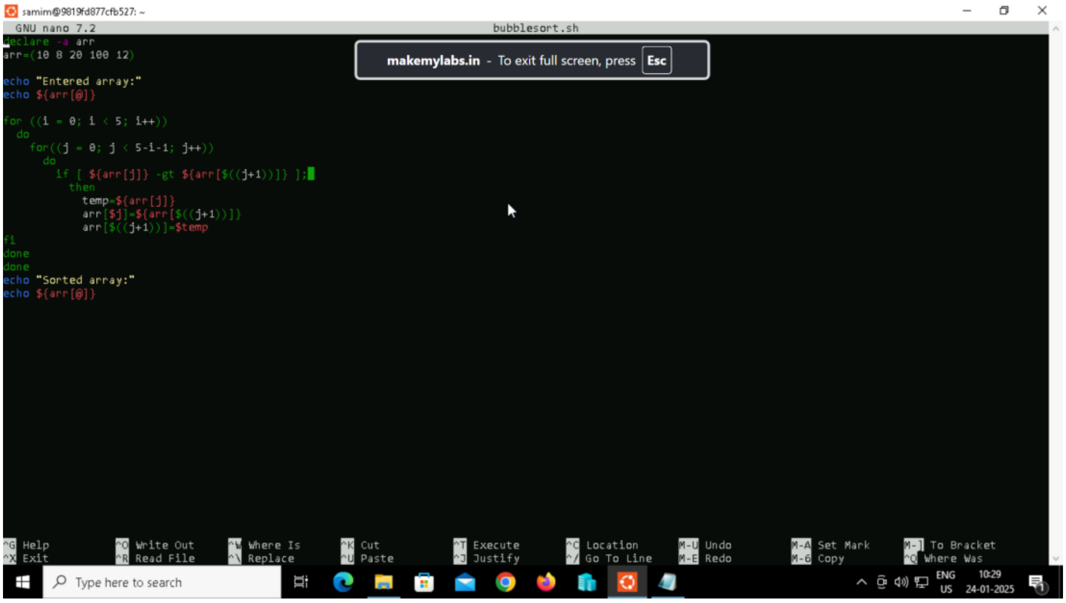
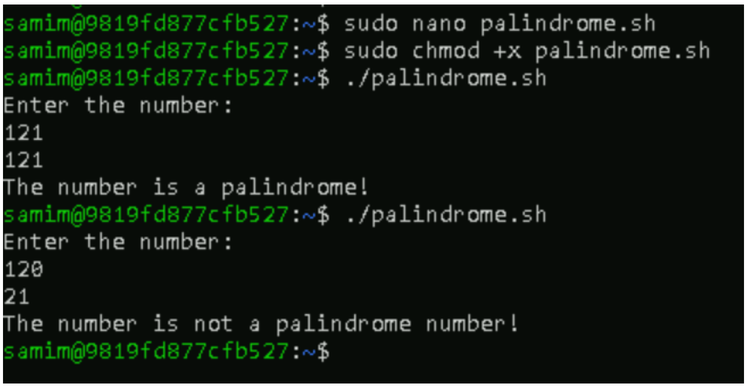
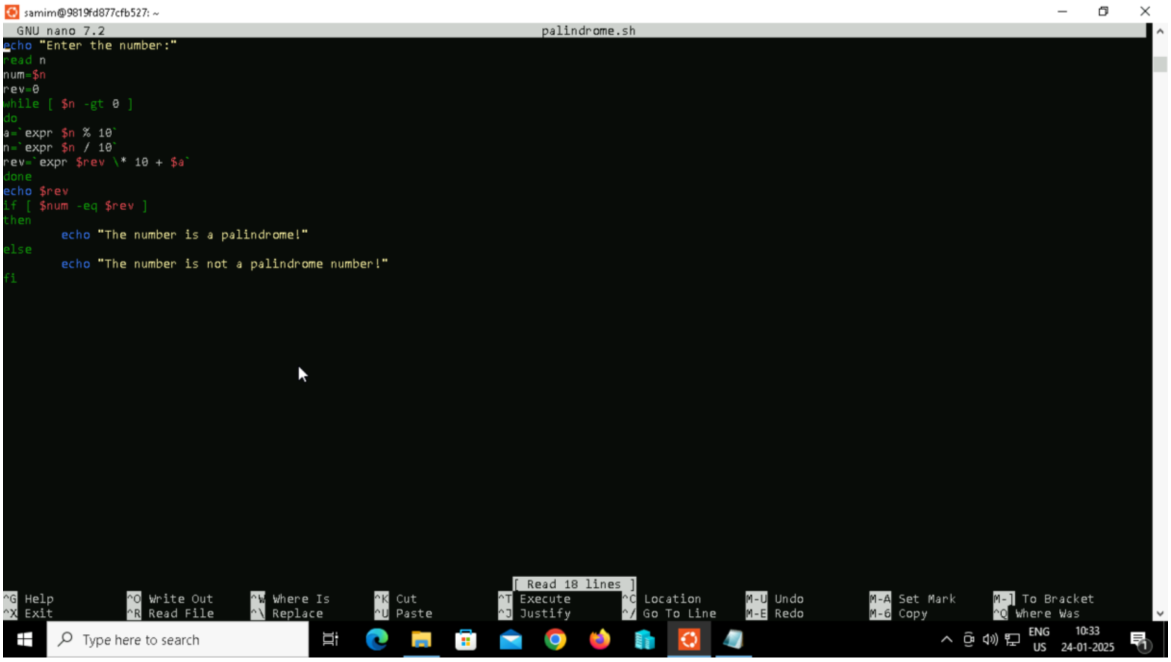


```
declare -a arr
arr=(10 8 20 100 12)

echo "Entered array:"
echo ${arr[@]}

for ((i = 0; i < 5; i++))
  do
    for((j = 0; j < 5-i-1; j++))
      do
        if [ ${arr[j]} -gt ${arr[$((j+1))]} ];
          then
            temp=${arr[j]}
            arr[$j]=${arr[$((j+1))]}
            arr[$((j+1))]=$temp
fi
done
done
echo "Sorted array:"
echo ${arr[@]}
```

Program 4- shell script for checking if a number is palindrome or not.



```
samim@9819fd877cfb527:~$ sudo nano palindrome.sh
samim@9819fd877cfb527:~$ sudo chmod +x palindrome.sh
samim@9819fd877cfb527:~$ ./palindrome.sh
Enter the number:
121
121
The number is a palindrome!
samim@9819fd877cfb527:~$ ./palindrome.sh
Enter the number:
120
21
The number is not a palindrome number!
samim@9819fd877cfb527:~$
```



```
echo "Enter the number:"
read n
num=$n
rev=0
while [ $n -gt 0 ]
do
a=`expr $n % 10`
n=`expr $n / 10`
rev=`expr $rev \* 10 + $a`
done
echo $rev
if [ $num -eq $rev ]
then
        echo "The number is a palindrome!"
else
        echo "The number is not a palindrome number!"
fi
```

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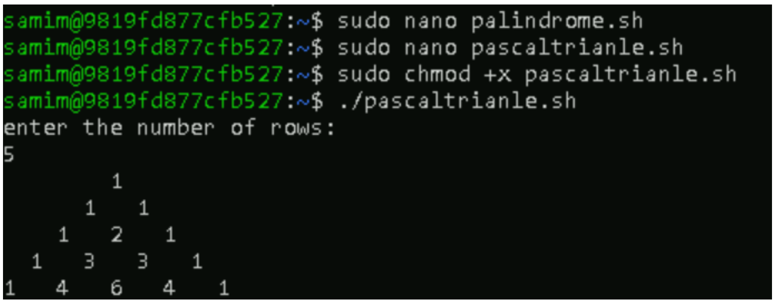
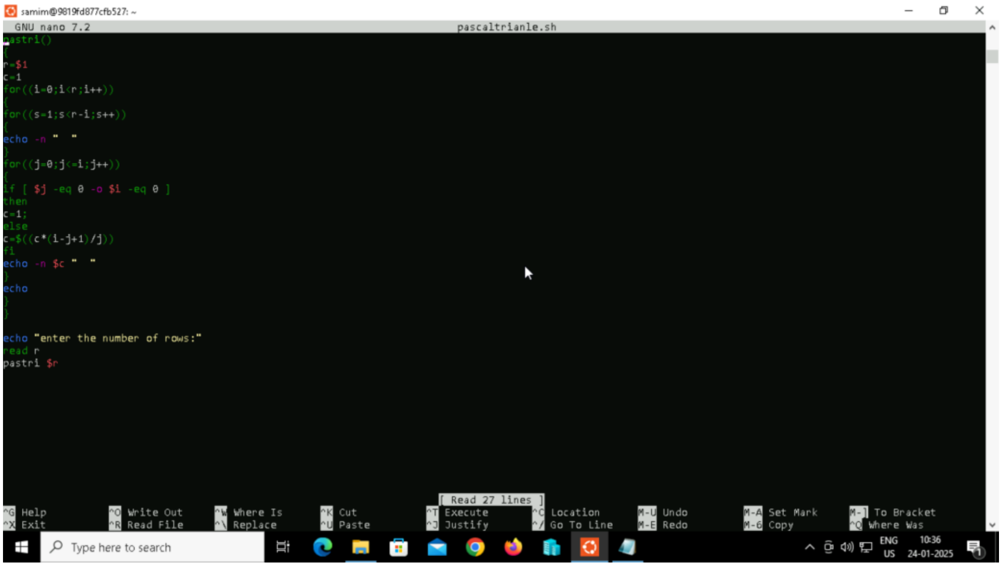
## Program 5- Pascal Triangle



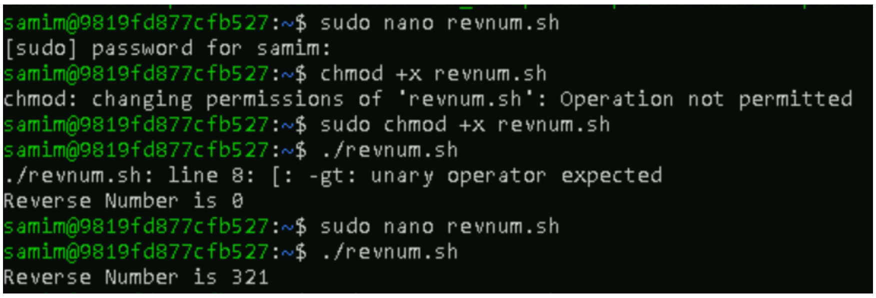
```
samim@9819fd877cfb527:~$ sudo nano palindrome.sh
samim@9819fd877cfb527:~$ sudo nano pascaltrianle.sh
samim@9819fd877cfb527:~$ sudo chmod +x pascaltrianle.sh
samim@9819fd877cfb527:~$ ./pascaltrianle.sh
enter the number of rows:
5
        1
      1   1
    1   2   1
  1   3   3   1
1   4   6   4   1
```



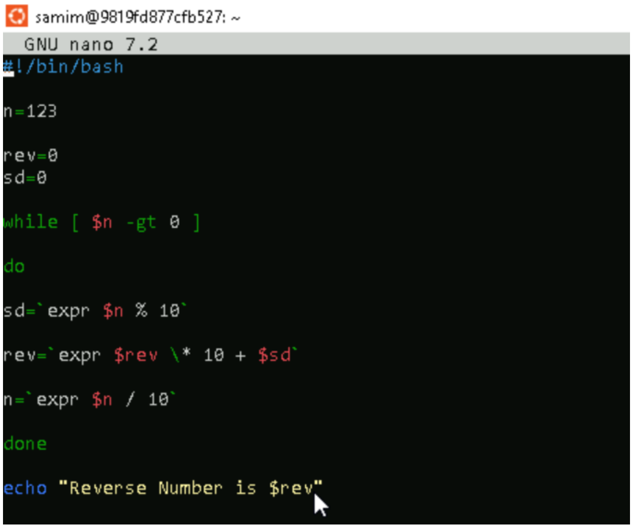
```
pastri()
{
r=$1
c=1
for((i=0;i<r;i++))
{
for((s=1;s<r-i;s++))
{
echo -n "  "
}
for((j=0;j<=i;j++))
{
if [ $j -eq 0 -o $i -eq 0 ]
then
c=1;
else
c=$((c*(i-j+1)/j))
fi
echo -n $c "  "
}
echo
}
}

echo "enter the number of rows:"
read r
pastri $r
```

## Program 6- to reverse a number



```
samim@9819fd877cfb527:~$ sudo nano revnum.sh
[sudo] password for samim:
samim@9819fd877cfb527:~$ chmod +x revnum.sh
chmod: changing permissions of 'revnum.sh': Operation not permitted
samim@9819fd877cfb527:~$ sudo chmod +x revnum.sh
samim@9819fd877cfb527:~$ ./revnum.sh
./revnum.sh: line 8: [: -gt: unary operator expected
Reverse Number is 0
samim@9819fd877cfb527:~$ sudo nano revnum.sh
samim@9819fd877cfb527:~$ ./revnum.sh
Reverse Number is 321
```



```
#!/bin/bash

n=123

rev=0
sd=0

while [ $n -gt 0 ]

do

sd=`expr $n % 10`

rev=`expr $rev \* 10 + $sd`

n=`expr $n / 10`

done

echo "Reverse Number is $rev"
```

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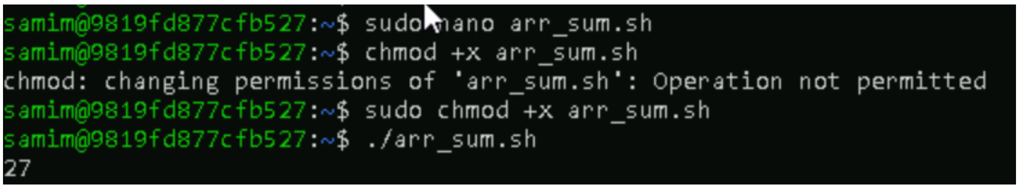
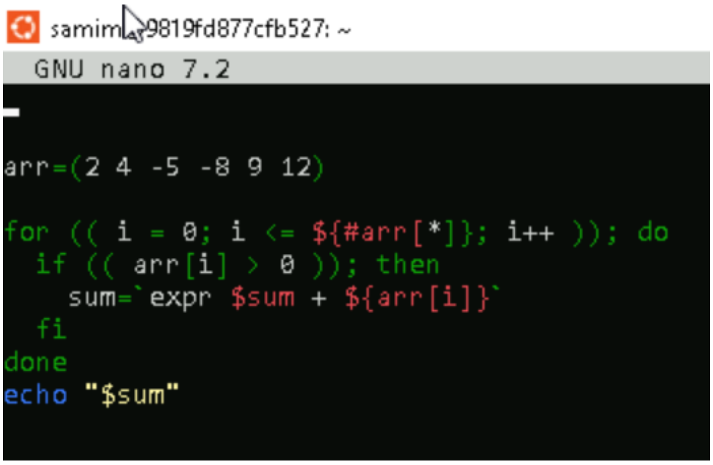
Program 7- sum of an array



```
samim@9819fd877cfb527:~$ sudo nano arr_sum.sh
samim@9819fd877cfb527:~$ chmod +x arr_sum.sh
chmod: changing permissions of 'arr_sum.sh': Operation not permitted
samim@9819fd877cfb527:~$ sudo chmod +x arr_sum.sh
samim@9819fd877cfb527:~$ ./arr_sum.sh
27
```



```

arr=(2 4 -5 -8 9 12)

for (( i = 0; i <= ${#arr[*]}; i++ )); do
  if (( arr[i] > 0 )); then
    sum=`expr $sum + ${arr[i]}`
  fi
done
echo "$sum"
```