

1)GREET

```
prab@8f7b90438d62516: ~  
GNU nano 7.2 greet.sh  
#!/bin/bash  
  
# Prompt the user for their name  
echo "Hello! What's your name?"  
read name  
  
# Greet the user with a personalized message  
echo "Hello, $name! Welcome to the world of shell scripting!"
```

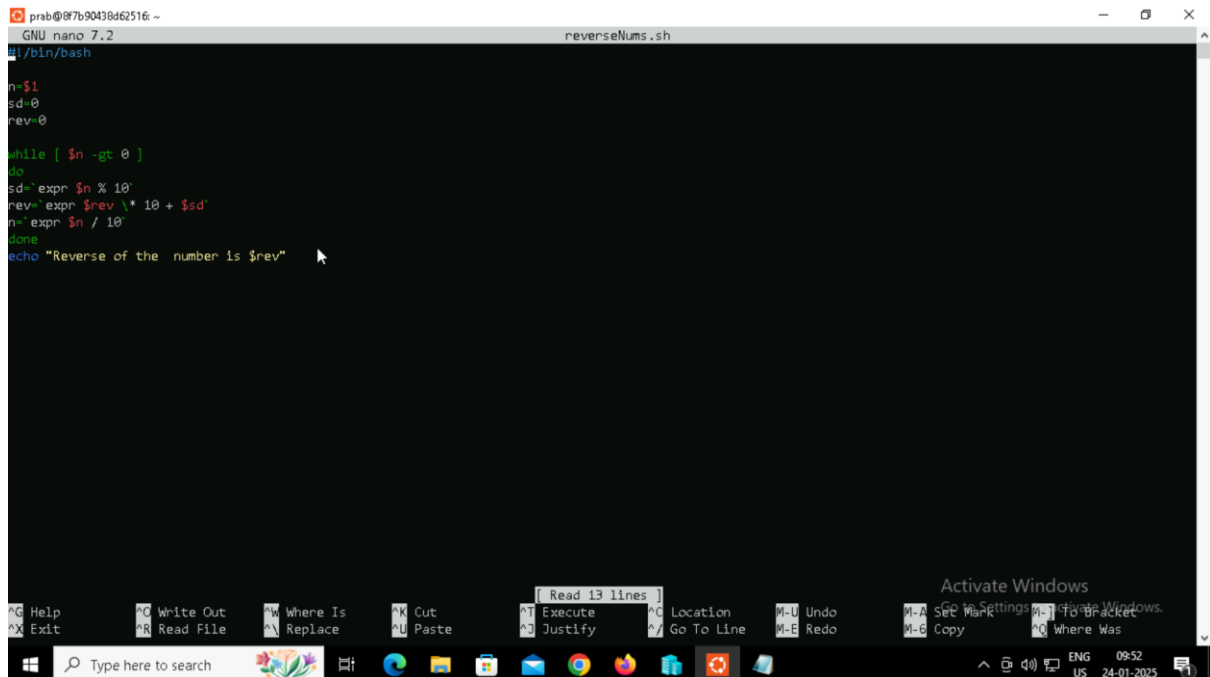
```
prab@8f7b90438d62516: ~  
prab@8f7b90438d62516:~$ touch greet.sh  
prab@8f7b90438d62516:~$ chmod +x greet.sh  
prab@8f7b90438d62516:~$ nano greet.sh  
prab@8f7b90438d62516:~$ ./greet.sh  
Hello! What's your name?  
Prabhakar  
Hello, Prabhakar! Welcome to the world of shell scripting!
```

2)Add Two Numbers

```
prab@8f7b90438d62516: ~  
GNU nano 7.2  
#Shell program to add two integer values  
#and check if any input is given or not  
  
#!/usr/bin/bash  
read -p "Input1 : " inp1  
if [[ -z $inp1 ]]  
then  
    echo "Input 1 cannot be empty, please 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"
```

```
prab@8f7b90438d62516: ~  
prab@8f7b90438d62516:~$ touch arithmetic.sh  
prab@8f7b90438d62516:~$ nano arithmetic.sh  
prab@8f7b90438d62516:~$ chmod a+x arithmetic.sh  
prab@8f7b90438d62516:~$ ./arithmetic.sh  
Input1 : 3  
Input2 : 5  
BC Value : 8  
EXPR Value : 8  
prab@8f7b90438d62516:~$
```

3) Reverse the number

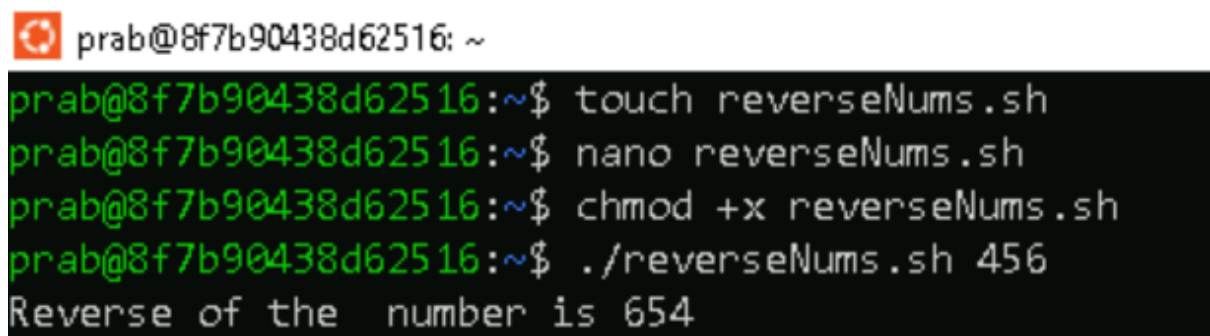


The screenshot shows a terminal window with the nano 7.2 editor open. The file being edited is named 'reverseNums.sh'. The script contains the following code:

```
#!/bin/bash
n=$1
sd=0
rev=0

while [ $n -gt 0 ]
do
sd=`expr $n % 10`
rev=`expr $rev \* 10 + $sd`
n=`expr $n / 10`
done
echo "Reverse of the number is $rev"
```

The terminal window has a standard Windows taskbar at the bottom with various application icons and a system tray showing the date and time as 09:52 on 24-01-2025.



The screenshot shows a terminal window with the following commands and output:

```
prab@8f7b90438d62516: ~
prab@8f7b90438d62516:~$ touch reverseNums.sh
prab@8f7b90438d62516:~$ nano reverseNums.sh
prab@8f7b90438d62516:~$ chmod +x reverseNums.sh
prab@8f7b90438d62516:~$ ./reverseNums.sh 456
Reverse of the number is 654
```

4) Array Sum

```
prab@8f7b90438d62516: ~  
GNU nano 7.2 arraySum.sh *  
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"
```

```
prab@8f7b90438d62516:~$ touch arraySum.sh  
prab@8f7b90438d62516:~$ chmod +x arraySum.sh  
prab@8f7b90438d62516:~$ nano arraySum.sh  
  
prab@8f7b90438d62516:~$ ./arraySum.sh  
40
```

5) Bubble Sort

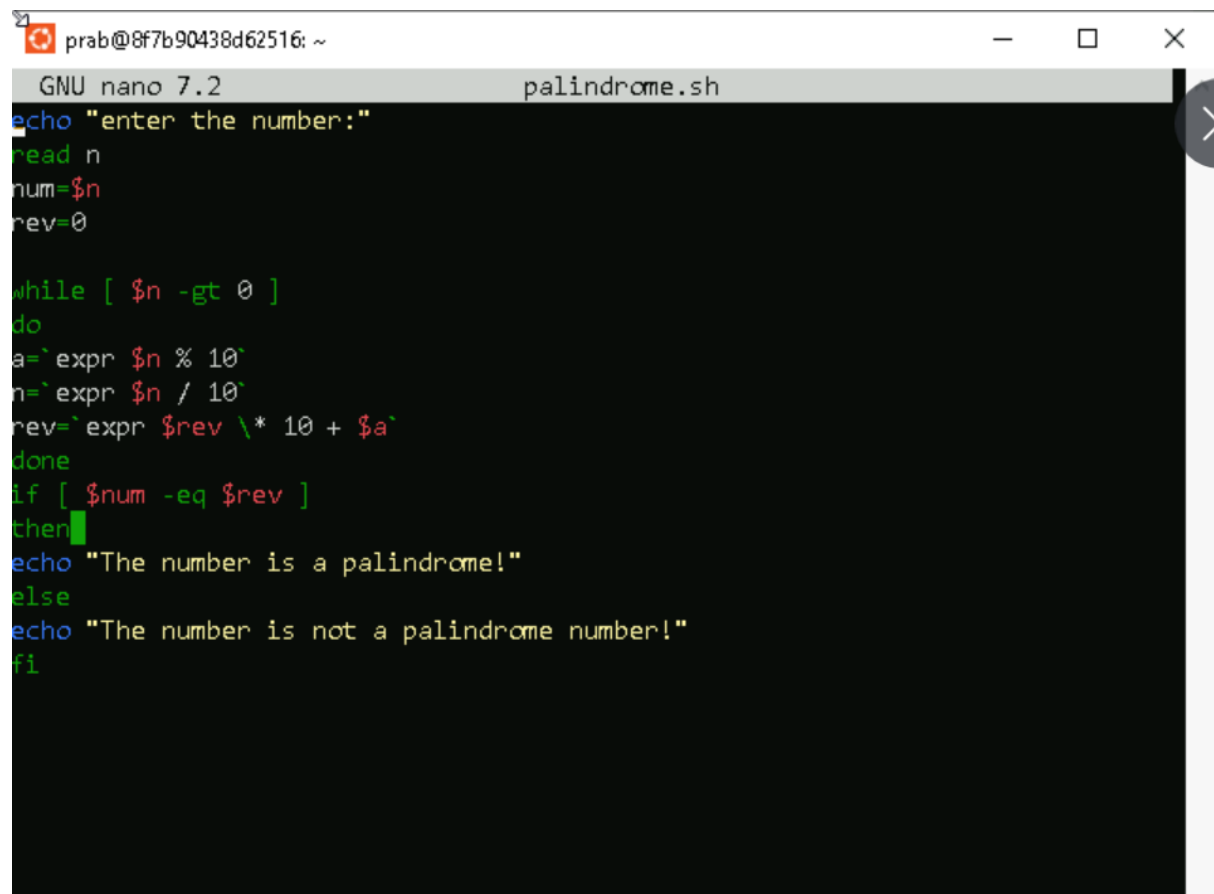
```
prab@8f7b90438d62516: ~  
GNU nano 7.2 bubble_sort.sh  
declare -a arr  
arr=(10 8 20 100 12)  
  
echo "Enter array:"  
echo ${arr[@]}  
  
for((i=0; i<5;i++))  
do  
    for((j=0;j<5-i-1;j++))  
    do  
        if [ ${arr[j]} -gt ${arr[j+1]} ];  
        then  
            temp=${arr[j]}  
            arr[j]=${arr[j+1]}  
            arr[j+1]=$temp  
        fi  
    done  
done  
echo "Sorted Array:"  
echo ${arr[@]}
```

```
prab@8f7b90438d62516:~$ touch bubble_sort.sh  
prab@8f7b90438d62516:~$ chmod +x bubble_sort.sh
```

```
prab@8f7b90438d62516:~$ nano bubble_sort.sh
```

```
prab@8f7b90438d62516:~$ ./bubble_sort.sh  
Enter array:  
10 8 20 100 12  
Sorted Array:  
8 10 12 20 100
```

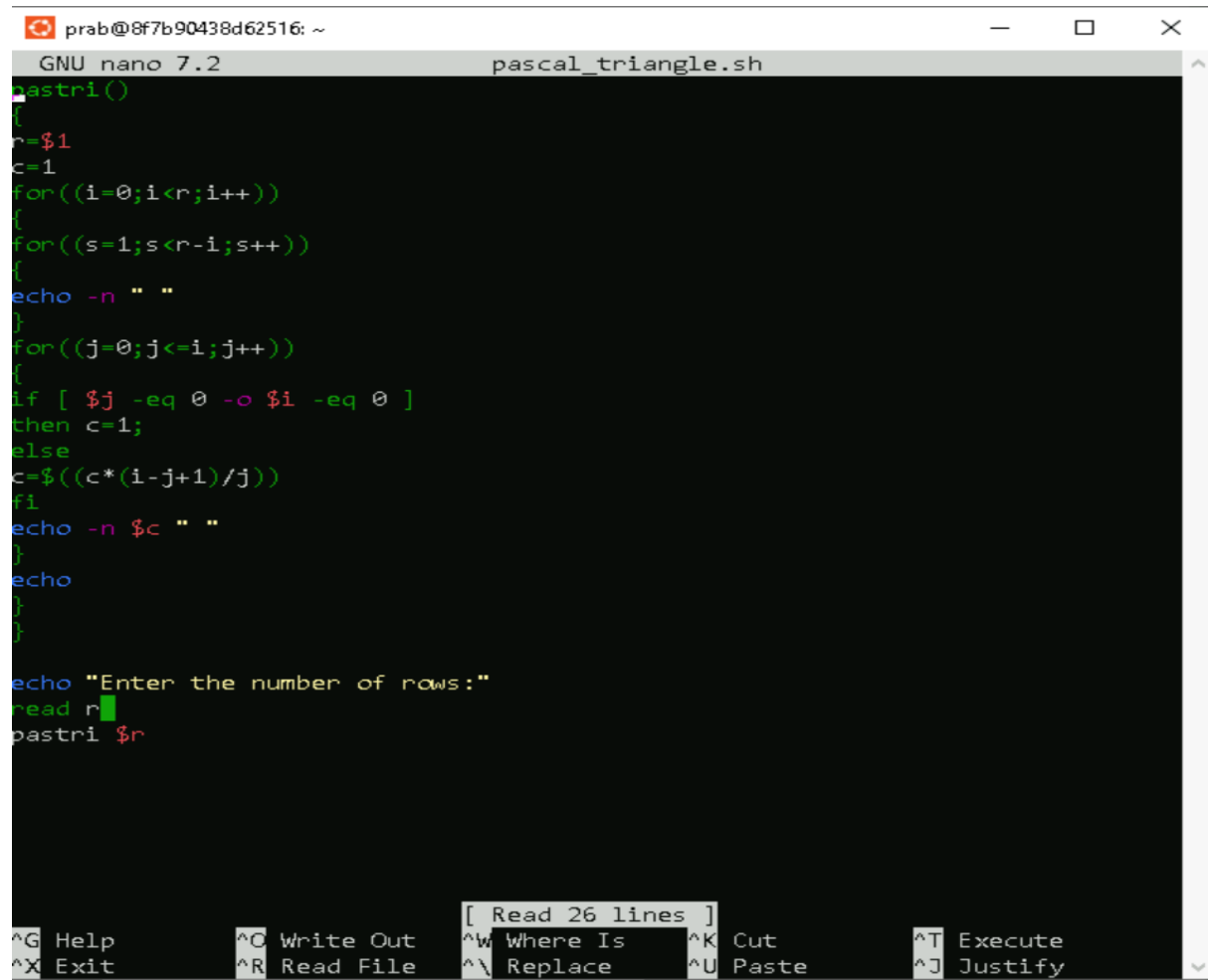
6) Palindrome



```
prab@8f7b90438d62516: ~  
GNU nano 7.2      palindrome.sh  
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  
if [ $num -eq $rev ]  
then  
echo "The number is a palindrome!"  
else  
echo "The number is not a palindrome number!"  
fi
```

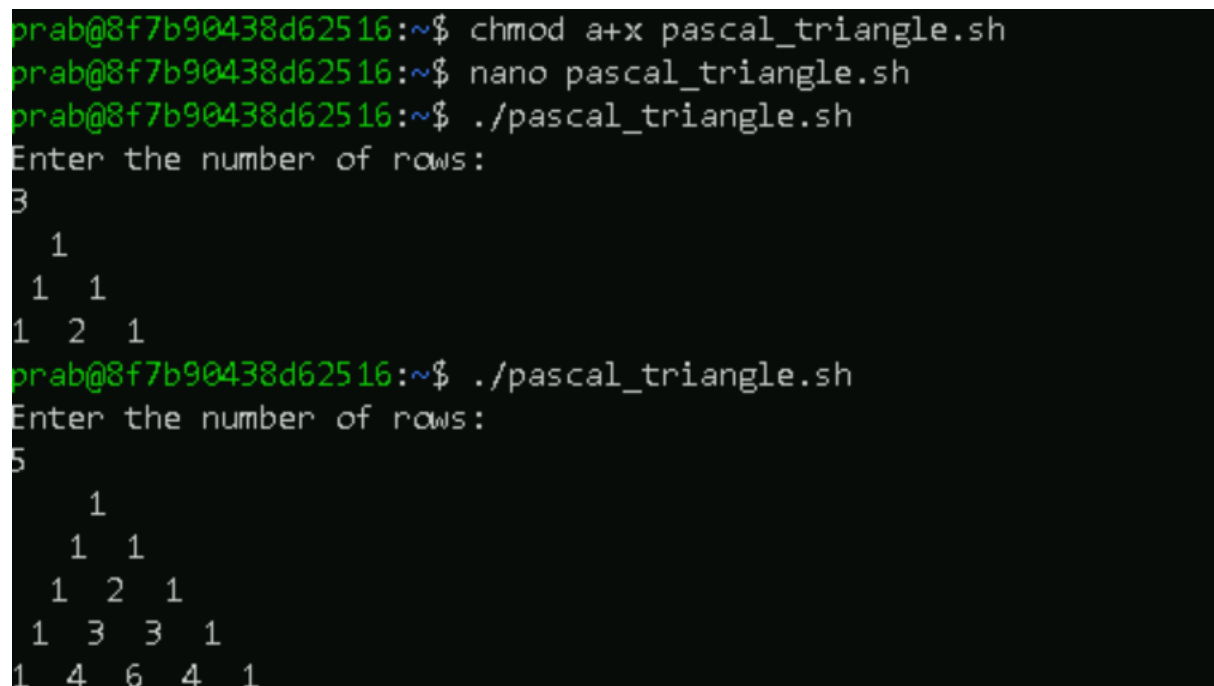
```
prab@8f7b90438d62516:~$ touch palindrome.sh  
prab@8f7b90438d62516:~$ chmod +x palindrome.sh  
prab@8f7b90438d62516:~$ nano palindrome.sh  
prab@8f7b90438d62516:~$ ./palindrome.sh  
enter the number:  
414  
The number is a palindrome!
```

7) Pascal Triangle



```
prab@8f7b90438d62516: ~  
GNU nano 7.2 pascal_triangle.sh  
pstri()  
{  
  n=$1  
  c=1  
  for((i=0;i<n;i++))  
  {  
    for((s=1;s<n-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 n  
  pstri $n  
}
```

^G Help ^C Write Out [Read 26 lines] ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^_ Replace ^U Paste ^J Justify



```
prab@8f7b90438d62516:~$ chmod a+x pascal_triangle.sh  
prab@8f7b90438d62516:~$ nano pascal_triangle.sh  
prab@8f7b90438d62516:~$ ./pascal_triangle.sh  
Enter the number of rows:  
3  
1  
1 1  
1 2 1  
prab@8f7b90438d62516:~$ ./pascal_triangle.sh  
Enter the number of rows:  
5  
1  
1 1  
1 2 1  
1 3 3 1  
1 4 6 4 1
```