

PALINDROME:

```
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch palindrome.sh  
meghana@3148c6658f7456b:~$ chmod +x palindrome.sh  
meghana@3148c6658f7456b:~$ vi palindrome.sh  
meghana@3148c6658f7456b:~$ ./palindrome.sh  
-bash: ./palindrome.sh: cannot execute: required file not found  
meghana@3148c6658f7456b:~$ vi palindrome.sh  
meghana@3148c6658f7456b:~$ ./palindrome.sh  
Enter the number:  
1234321  
1234321  
The number is a palindrome!  
meghana@3148c6658f7456b:~$ vi palindrome.sh
```

```
meghana@3148c6658f7456b:~$  
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
```

SUM OF ELEMENTS IN ARRAY:

```
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch array_sum.sh  
meghana@3148c6658f7456b:~$ chmod +x array_sum.sh  
meghana@3148c6658f7456b:~$ vi array_sum.sh  
meghana@3148c6658f7456b:~$ ./array_sum.sh  
Enter the elements of the array separated by spaces:  
45 3 8 56 32 1  
Sum of positive numbers: 145  
meghana@3148c6658f7456b:~$
```

```
meghana@3148c6658f7456b:~$  
#!/bin/bash  
echo "Enter the elements of the array separated by spaces:"  
read -a arr  
  
sum=0  
for (( i = 0; i < ${#arr[@]}; i++ )); do  
    if (( arr[i] > 0 )); then  
        sum=$((sum + arr[i]))  
    fi  
done  
  
echo "Sum of positive numbers: $sum"
```

REVERSE OF A NUMBER:

```
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch ReverseNums.sh  
meghana@3148c6658f7456b:~$ chmod +x ReverseNums.sh  
meghana@3148c6658f7456b:~$ vi ReverseNums.sh  
meghana@3148c6658f7456b:~$ ./ReverseNums.sh 4567  
Reverse Number is 7654  
meghana@3148c6658f7456b:~$ ./ReverseNums.sh 987645432  
Reverse Number is 234546789  
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$
```

```
meghana@3148c6658f7456b: ~  
#!/bin/bash  
  
n=$1  
  
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"
```

PASCAL TRIANGLE:

```
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch pascal_triangle.sh  
meghana@3148c6658f7456b:~$ chmod +x pascal_triangle.sh  
meghana@3148c6658f7456b:~$ vi pascal_triangle.sh  
meghana@3148c6658f7456b:~$ ./pascal_triangle.sh  
enter the number of rows:  
6  
  
      1  
     1 1  
    1 2 1  
   1 3 3 1  
  1 4 6 4 1  
 1 5 10 10 5 1  
meghana@3148c6658f7456b:~$ ./pascal_triangle.sh  
enter the number of rows:  
8  
  
      1  
     1 1  
    1 2 1  
   1 3 3 1  
  1 4 6 4 1  
 1 5 10 10 5 1  
1 6 15 20 15 6 1  
1 7 21 35 35 21 7 1  
meghana@3148c6658f7456b:~$
```

```
meghana@3148c6658f7456b: ~  
#Shell program to print Pascal triangle
```

```
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
```

BUBBLE SORT:

```
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch bubble_sort.sh  
meghana@3148c6658f7456b:~$ chmod +x bubble_sort.sh  
meghana@3148c6658f7456b:~$ vi bubble_sort.sh  
meghana@3148c6658f7456b:~$ ./bubble_sort.sh  
Entered array:  
10 8 20 100 12  
./bubble_sort.sh: line 11: syntax error near `j++)`  
./bubble_sort.sh: line 11: `    for((j = 0; j < 5-i-1; j++))`  
meghana@3148c6658f7456b:~$ vi bubble_sort.sh  
meghana@3148c6658f7456b:~$ ./bubble_sort.sh  
Entered array:  
10 8 20 100 12  
Sorted array:  
8 10 12 20 100  
meghana@3148c6658f7456b:~$ vi bubble_sort.sh  
meghana@3148c6658f7456b:~$ ./bubble_sort.sh  
Enter the elements of the array separated by spaces:  
77 9 34 87 44 5  
Entered array:  
77 9 34 87 44 5  
Sorted array:  
5 9 34 44 77 87  
meghana@3148c6658f7456b:~$
```

```

meghana@3148c6658f7456b: ~
#!/bin/bash
echo "Enter the elements of the array separated by spaces:"
read -a arr

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

n=${#arr[@]}
for ((i = 0; i < n; i++))
do
    for ((j = 0; j < n-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[@]}
~
~

```

PERSONALIZED MESSAGE:

```

meghana@3148c6658f7456b:~$
meghana@3148c6658f7456b:~$ touch personalized.sh
meghana@3148c6658f7456b:~$ chmod +x personalized.sh
meghana@3148c6658f7456b:~$ vi personalized.sh
meghana@3148c6658f7456b:~$ ./personalized.sh
Hello! What's your name?
meghana
Hello, meghana! welcome to the world of shell scripting!
meghana@3148c6658f7456b:~$
meghana@3148c6658f7456b:~$

```

```

#!/bin/bash
echo "Hello! What's your name?"
read name
echo "Hello, $name! welcome to the world of shell scripting!"
~
~
~

```

ARITHMETIC OPERATIONS:

```

meghana@server-name:~$
meghana@server-name:~$ touch add.sh
meghana@server-name:~$ vi add.sh
meghana@server-name:~$ chmod +x add.sh
meghana@server-name:~$ ./add.sh
Input1 : 11
Input2 : 22
BC Value : 33
EXPR Value : 33
meghana@server-name:~$

```

meghana@server-name: ~

```
#!/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"
```

```
~
```

```
~
```

```
~
```

```
~
```

```
~
```