ADDING TWO NUMBERS:

```
pravalika18@d73d6822db255ef:~$ touch add.sh
pravalika18@d73d6822db255ef:~$ vi add.sh
pravalika18@d73d6822db255ef:~$ chmod +x add.sh
pravalika18@d73d6822db255ef:~$ ./add.sh
Input1 : 34
Input2 : 45
BC Value : 79
EXPR Value : 79
pravalika18@d73d6822db255ef:~$ 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"

pravalika18@d73d6822db255ef:~$
```

ARRAY SUM


```
1   4   6   4   1
pravalika18@d73d6822db255ef:~$
pravalika18@d73d6822db255ef:~$ touch array_sum.sh
pravalika18@d73d6822db255ef:~$ chmod +x array_sum.sh
pravalika18@d73d6822db255ef:~$ vi array_sum.sh
pravalika18@d73d6822db255ef:~$ cat array_sum.sh
arr=()
read -p "Enter the number of elements in the array: " n

echo "Enter the elements one by one:"
for (( i = 0; i < n; i++ )); do
        read -p "Element $((i + 1)): " element
            arr+=($element)
    done


    sum=0

    for (( i = 0; i < ${#arr[@]}; i++ )); do
            if (( arr[i] > 0 )); then
                    sum=$((sum + arr[i]))
                    fi
            done
            echo "The sum of positive numbers is: $sum"
pravalika18@d73d6822db255ef:~$ ./array_sum.sh
Enter the number of elements in the array: 8 12 4 29 98 4
Enter the elements one by one:
./array_sum.sh: line 5: ((: 8 12 4 29 98 4: syntax error in expression (error token is "12 4 29 98 4")
The sum of positive numbers is: 0
pravalika18@d73d6822db255ef:~$ ./array_sum.sh
Enter the number of elements in the array: 6
Enter the elements one by one:
Element 1: 43
Element 2: 76
Element 3: 98
Element 4: 32
Element 5: 56
Element 6: 90
The sum of positive numbers is: 395
pravalika18@d73d6822db255ef:~$
```

REVERSE NUMBER


```
pravalika18@d73d6822db255ef:~$ touch rvsr.sh
pravalika18@d73d6822db255ef:~$ chmod +x rvsr.sh
pravalika18@d73d6822db255ef:~$ vi rvsr.sh
pravalika18@d73d6822db255ef:~$ cat rvsr.sh
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 $rev"
pravalika18@d73d6822db255ef:~$ ./rvsr.sh
./rvsr.sh: line 5: [: -gt: unary operator expected
Reverse Number is 0
pravalika18@d73d6822db255ef:~$ ./rvsr.sh 987654
Reverse Number is 456789
pravalika18@d73d6822db255ef:~$ ./rvsr.sh 123456
Reverse Number is 654321
pravalika18@d73d6822db255ef:~$
```

PALINDROME

```
pravalika18@d73d6822db255ef:~$ chmod +x palindrome.sh
pravalika18@d73d6822db255ef:~$ vi palindrome.sh
pravalika18@d73d6822db255ef:~$ cat 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
echo $rev
if [ $num -eq $rev ]
then
            echo "The number is a palindrome!"
        else
                    echo "The number is not a palindrome number!"
fi

pravalika18@d73d6822db255ef:~$ ./palindrome.sh
Enter the number:
121
121
The number is a palindrome!
pravalika18@d73d6822db255ef:~$
```

PASCAL TRIANGLE

```
Reverse Number is 654321
pravalika18@d73d6822db255ef:~$ touch pascal_triangle.sh
pravalika18@d73d6822db255ef:~$ chmod +x pascal_triangle.sh
pravalika18@d73d6822db255ef:~$ vi pascal_triangle.sh
pravalika18@d73d6822db255ef:~$ cat pascal_triangle.sh
pastri()
{
        r=$1
        c=0
        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 $1 -eq 0 ]
                        then
                            c=1;
                        else
                            c=$((c*(i-j+1)/j))
                            fi
                            echo -n $c "  "
                    }
                echo
            }
        }

        echo "enter the number of rows:"
        read r
        pastri $r
pravalika18@d73d6822db255ef:~$ ./pascal_triangle.sh
enter the number of rows:
5
        1
      1   1
    1   2   1
  1   3   3   1
1   4   6   4   1
pravalika18@d73d6822db255ef:~$
```

BUBBLE SORT


```
pravalika18@d73d6822db255ef:~$ touch bubble_sort.sh
pravalika18@d73d6822db255ef:~$ chmod +x bubble_sort.sh
pravalika18@d73d6822db255ef:~$ vi bubble_sort.sh
pravalika18@d73d6822db255ef:~$ cat bubble_sort.sh
pravalika18@d73d6822db255ef:~$ vi bubble_sort.sh
pravalika18@d73d6822db255ef:~$ cat bubble_sort.sh
#bubble sort in shell with static array#
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 ${arr[@]}
pravalika18@d73d6822db255ef:~$ ./bubble_sort
-bash: ./bubble_sort: No such file or directory
pravalika18@d73d6822db255ef:~$ ./bubble_sort.sh
Entered array:
10 8 20 100 12
Sorted array:
8 10 12 20 100
pravalika18@d73d6822db255ef:~$
```

PERSONALIZED MESSAGE:


```
pravalika18@d73d6822db255ef:~$ touch bubble_sort.sh
pravalika18@d73d6822db255ef:~$ chmod +x bubble_sort.sh
pravalika18@d73d6822db255ef:~$ vi bubble_sort.sh
pravalika18@d73d6822db255ef:~$ cat bubble_sort.sh
pravalika18@d73d6822db255ef:~$ vi bubble_sort.sh
pravalika18@d73d6822db255ef:~$ cat bubble_sort.sh
#bubble sort in shell with static array#
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 ${arr[@]}
pravalika18@d73d6822db255ef:~$ ./bubble_sort
-bash: ./bubble_sort: No such file or directory
pravalika18@d73d6822db255ef:~$ ./bubble_sort.sh
Entered array:
10 8 20 100 12
Sorted array:
8 10 12 20 100
pravalika18@d73d6822db255ef:~$
```