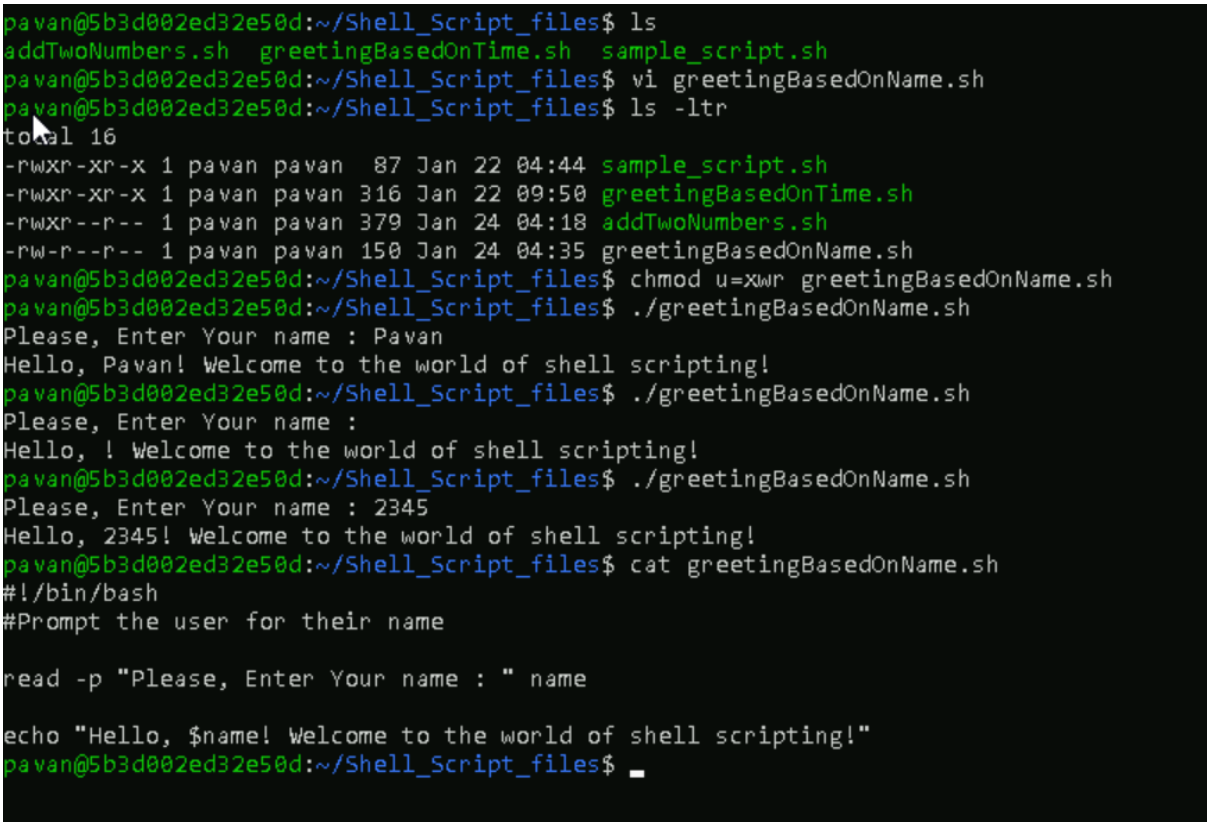
Thumati Pavan Venkata Narendra Kumar

EMP-ID-289219

Shell Scripting Project-1

1. Greeting the user with User's input:



2. Addition of Two numbers:

```
pavan@5b3d002ed32e50d: ~/Shell_Script_files
pavan@5b3d002ed32e50d:~/Shell_Script_files$ addTwoNumbers.sh
addTwoNumbers.sh: command not found
pavan@5b3d002ed32e50d:~/Shell_Script_files$ nano addTwoNumbers.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ls -ltr
total 12
-rwxr-xr-x 1 pavan pavan  87 Jan 22 04:44 sample_script.sh
-rwxr-xr-x 1 pavan pavan 316 Jan 22 09:50 greetingBasedOnTime.sh
-rw-r--r-- 1 pavan pavan 379 Jan 24 04:18 addTwoNumbers.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ chmod u=rwx addTwoNumbers.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat addTwoNumbers.sh
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"
```

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./addTwoNumbers.sh
Input1 : 5
Input2 : 2.4
BC Value : 7.4
expr: non-integer argument
EXPR Value :
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./addTwoNumbers.sh
Input1 : 10
Input2 : 2
BC Value : 12
EXPR Value : 12
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./addTwoNumbers.sh
Input1 :
Input 1 cannot be empty, plese enter an integer.
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./addTwoNumbers.sh
Input1 : 3
Input2 : d
BC Value : 3
expr: non-integer argument
EXPR Value :
pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

3. Total sum of the array:

3.1 Fixed array sum:

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi arraySum.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./arraySum.sh

The sum of the array is 98
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./arraySum.sh

The sum of the array is 98
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat arraySum.sh
#!/bin/bash
#shell script to find the sum of array


arr=(5 3 7 -2 10 67 -7 6)

sum=0

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

echo
echo "The sum of the array is $sum"


pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

3.2 Array sum:

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat inputArraySum.sh
#!/bin/bash


read -p "Enter the number of elements in the array: " n

if [[ ! $n =~ ^[0-9]+$ ]] || [[ $n -le 0 ]]; then
            echo "Please enter a valid positive integer."
                exit 1
fi
array=()
sum=0
echo "Enter $n elements:"
for (( i=0; i<n; i++ ))
do
        read -p "Element $((i+1)): " element

        if [[ ! $element =~ ^-?[0-9]+$ ]]; then
                echo "Invalid input. Please enter an integer."
         exit 1
        fi
        array+=($element)  # Add element to the array
        sum=$((sum + element))  # Add element to the sum
        done
echo "Array elements: ${array[@]}"
echo "Sum of array elements: $sum"

pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi inputArraySum.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ls -ltr
total 32
-rwxr-xr-x 1 pavan pavan  87 Jan 22 04:44 sample_script.sh
-rwxr-xr-x 1 pavan pavan 316 Jan 22 09:50 greetingBasedOnTime.sh
-rwxr--r-- 1 pavan pavan 379 Jan 24 04:18 addTwoNumbers.sh
-rwxr--r-- 1 pavan pavan 150 Jan 24 04:35 greetingBasedOnName.sh
-rwxr--r-- 1 pavan pavan 294 Jan 24 05:04 reverseNumber.sh
-rwxr--r-- 1 pavan pavan 231 Jan 24 05:15 arraySum.sh
-rwxr--r-- 1 pavan pavan 377 Jan 24 05:58 palindrome.sh
-rw-r--r-- 1 pavan pavan 597 Jan 24 06:14 inputArraySum.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ chmod u=rwx inputArraySum.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./inputArraySum.sh
Enter the number of elements in the array: 5
Enter 5 elements:
Element 1: 23
Element 2: 43
Element 3: 65
Element 4: 876
Element 5: -345
Array elements: 23 43 65 876 -345
Sum of array elements: 662
```

4. Reverse a number:

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat reverseNumber.sh
#!/bin/bash
#shell script to reverse a number

read -p "Enter any number : " num
sample=$num
newNum=0
digit=0
while [ $num -gt 0 ]
do
        digit=`expr $num % 10`
        newNum=`expr $newNum \* 10 + $digit`
        num=`expr $num / 10`
done
echo
echo
echo "The reverse of given number $sample is $newNum"
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./reverseNumber.sh
Enter any number : 23456789


The reverse of given number 23456789 is 98765432
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./reverseNumber.sh
Enter any number : 15432349876


The reverse of given number 15432349876 is 67894323451
pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

5. Palindrome:

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi palindrome.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi palindrome.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi palindrome.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./palindrome.sh
Enter any number to check palindrome or not : 12345654321
The given number 12345654321 is a palindrome
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./palindrome.sh
Enter any number to check palindrome or not : 123765432
The given number 123765432 is not a palindrome
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat palindrome.sh
#!/bin/bash
#checking either a number is palindrome or not


read -p "Enter any number to check palindrome or not : " num

sam=$num
res=0
di=0

while [ $num -gt 0 ]
do
        di=`expr $num % 10`
        res=`expr $res \* 10 + $di`
        num=`expr $num / 10`
done

if [ $res -eq $sam ]
then
        echo "The given number $sam is a palindrome"
else
        echo "The given number $sam is not a palindrome"
fi

pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

6. Bubble Sort:

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi bubbleSort.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat bubbleSort.sh
#!/bin/bash


read -p "Enter space-separated numbers: " -a arr
n=${#arr[@]}

for ((i = 0; i < n - 1; i++)); do
        for ((j = 0; j < n - i - 1; j++)); do
                if ((arr[j] > arr[j+1])); then
                        temp=${arr[j]}
                        arr[j]=${arr[j+1]}
                        arr[j+1]=$temp
                fi
        done
done

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

pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ls -l
total 36
-rwxr--r-- 1 pavan pavan 379 Jan 24 04:18 addTwoNumbers.sh
-rwxr--r-- 1 pavan pavan 231 Jan 24 05:15 arraySum.sh
-rw-r--r-- 1 pavan pavan 290 Jan 24 06:21 bubbleSort.sh
-rwxr--r-- 1 pavan pavan 150 Jan 24 04:35 greetingBasedOnName.sh
-rwxr-xr-x 1 pavan pavan 316 Jan 22 09:50 greetingBasedOnTime.sh
-rwxr--r-- 1 pavan pavan 597 Jan 24 06:14 inputArraySum.sh
-rwxr--r-- 1 pavan pavan 377 Jan 24 05:58 palindrome.sh
-rwxr--r-- 1 pavan pavan 294 Jan 24 05:04 reverseNumber.sh
-rwxr-xr-x 1 pavan pavan  87 Jan 22 04:44 sample_script.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ chmod u=rxw bubbleSort.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./bubbleSort.sh
Enter space-separated numbers: 4 5 2 1 12 334 1 0 -1
Sorted array: -1 0 1 1 2 4 5 12 334
```

7. Pascal's Triangle:

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi pascalsTriangle.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ cat pascalsTriangle.sh
#!/bin/bash
#

read -p "Enter the number of rows: " rows

for ((i = 0; i < rows; i++)); do
        for ((k = rows; k > i; k--)); do
                echo -n "  "
        done
        num=1
        for ((j = 0; j <= i; j++)); do
                printf "%4d" $num
                num=$((num * (i - j) / (j + 1)))
        done
        echo
done
pavan@5b3d002ed32e50d:~/Shell_Script_files$
```

```
pavan@5b3d002ed32e50d:~/Shell_Script_files$ vi pascalsTriangle.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ chmod u=rwx pascalsTriangle.sh
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./pascalsTriangle.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
pavan@5b3d002ed32e50d:~/Shell_Script_files$ ./pascalsTriangle.sh
Enter the number of rows: 10
                        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
        1   8  28  56  70  56  28   8   1
      1   9  36  84 126 126  84  36   9   1
pavan@5b3d002ed32e50d:~/Shell_Script_files$
```