**NAME : DHANANJAY AGRAHARI**

**ROLL NO. : BT23ECE045**

**Q : 1 Write a shell script to create a command line calculator.**

**Ans**

echo " Calculator"

echo “ Enter the appropriate code for the operation“

echo "For + Enter: A"

echo "For - Enter: S"

echo "For \* Enter: M"

echo "For / Enter: D"

echo "Enter Operation:"

read o

echo "Enter Number n1"

read n1

echo "Enter Number n2"

read n2

if [ "$o" = "A" ]; then

echo "$n1 + $n2 is:"

echo $(($n1 + $n2))

elif [ "$o" = "S" ]; then

echo "$n1 - $n2 is:"

echo $(($n1 - $n2))

elif [ "$o" = "M" ]; then

echo "$n1 \* $n2 is:"

echo $(($n1 \* $n2))

elif [ "$o" = "D" ]; then

if [ "$n2" -ne 0 ]; then

echo "$n1 / $n2 is:"

echo $(($n1 / $n2))

else

echo "Error: Division by zero."

fi

else

echo "Invalid Operation"

fi

**Output:**

calculator

Enter the appropriate code for the operation

For + Enter: A

For - Enter: S

For \* Enter: M

For / Enter: D

Enter Operation:

D

Enter Number n1

121

Enter Number n2

11

121 /11 is:

11

**Q :2 Add array elements where numbers to be added are integers.**

**Ans:**

echo "Number of element in the array: "

read Num

number=()

for ((i=0;i<Num;i++));do

echo "Enter the number "

read n

number+=("$n")

done

sum=0

for n in "${number[@]}"; do

sum=$((sum +n))

done

echo "Sum of Elemnt of Arrays is: $sum "

**Output:**

Number of element in the array:4

Enter the number

25

Enter the number

25

Enter the number

25

Enter the number

25

Sum of Elemnt of Arrays is: 150

**Q :3 Add array elements where elements to be added are strings.**

**Ans :**

strings=("This" "is" "a" "Program" "to" "concadinate" ”a” “string” “array”)

concatenated\_string=""

for str in "${strings[@]}"; do

concatenated\_string+="$str "

done

echo "The concatenated string is: $concatenated\_string"

**Output:**

The concatenated string is: This is a Program to concadinate a string array

**Q:4 Define a function count\_lines() that counts the number of lines in the file provided as argument from the terminal.**

**Ans :**

count\_lines() {

local file="$1"

local flag=0

if [[ -f "$file" ]]; then

while IFS= read -r line; do

flag=$((flag + 1))

done < "$file"

echo "The number of lines in $file is: $flag"

else

echo "File does not exist: $file"

fi

}

echo "Enter the name of the file : "

read file\_name

count\_lines "$file\_name"

**Output:**

Enter the name of the file :

COUNTHELLOWORLD.sh

The number of lines in COUNTHELLOWORLD.sh is: 4

**Q : 5 Define a function count\_lines() that counts the number of lines in the list of files provided as argument from the terminal. Use return statement.**

**Ans:**

count\_lines() {

total\_lines=0

for file in "$@"; do

if [ -f "$file" ]; then

lines=$(wc -l < "$file")

total\_lines=$((total\_lines + lines))

else

echo "File '$file' not found!"

fi

done

return $total\_lines

}

if [ $# -eq 0 ]; then

echo "Please provide file names as arguments."

exit 1

fi

count\_lines "$@"

line\_count=$?

echo "Total number of lines in provided files: $line\_count"

**Output:**

Total number of lines in provided files:4

**Q :6 Write a shell script to loop through the files and directories in a for loop.**

**Ans :**

for item in \*; do

if [ -d "$item" ]; then

echo "$item is a directory"

elif [ -f "$item" ]; then

echo "$item is a file"

  fi

Done