# Shell Script: Integer Addition with Input Validation

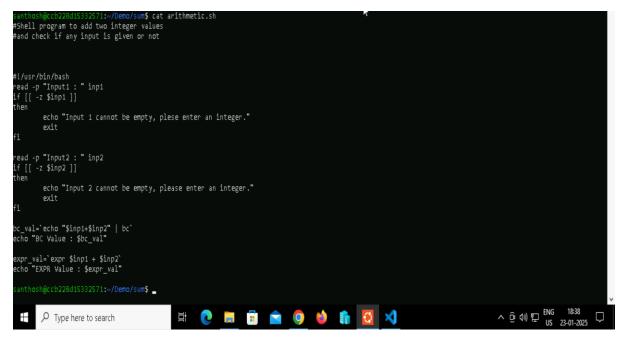
**Step 1**: Create a directory first using mkdir sum and change the directory to the sum directory.

Step 2: Touch and nano a file named arithmetic.sh

```
santhosh@ccb228d15332571:~/Demo/sum$ touch arithmetic.sh
santhosh@ccb228d153325:\∴:~/Demo/sum$ nano arithmetic.sh
```

### Step 3: Code Purpose

- 1. Prompts the user: Asks the user to enter two integer values.
- 2. Input Validation: Checks if the user provided input for both values. If either input is empty, an error message is displayed, and the script exits.
- Calculates Sum:
   Calculates the sum of the two input integers using the bc command for arbitrary precision arithmetic.
   Calculates the sum using the expr command for basic integer arithmetic.
- 4. Displays Results: Prints the calculated sum using both bc and expr.



## **Step 4:** Code Explanation

- #!/usr/bin/bash specifies that the script should be executed with the Bash interpreter.
- read -p "Input1: " inp1: Prompts the user to enter the first integer and stores it in the inp1 variable.

- read -p "Input2: " inp2: Prompts the user to enter the second integer and stores it in the inp2 variable.
- if [[-z \$inp1]]: Checks if inp1 is empty. If empty, displays an error message and exits with an error code (1).
- if [[-z \$inp2]]: Checks if inp2 is empty. If empty, displays an error message and exits with an error code (1).
- bc\_val=\$(echo "\$inp1 + \$inp2" | bc): Uses the bc command to calculate the sum with arbitrary precision and stores the result in bc\_val.
- expr\_val=\$(expr \$inp1 + \$inp2): Uses the expr command to calculate the sum with basic integer arithmetic and stores the result in expr\_val.
- echo "BC Value: \$bc val": Displays the sum calculated using bc.
- echo "EXPR Value : \$expr val": Displays the sum calculated using expr.

### **Step 5:** Running the file using ./arithmetic.sh

```
santhosh@ccb228d15332571:~/Demo/sum$ ./arithmetic.sh
-bash: ./arithmetic.sh: Permission denied
```

Step 6: Providing the execut permissions to the arithmetic shell file.

```
santhosh@ccb228d15332571:~/Demo/sum$ chmod +x arithmetic.sh
```

# Step 7: Output of the shell script.

```
santhosh@ccb228d15332571:~/Demo/sum$ ./arithmetic.sh
Input1 : 12
Input2 : 14
BC Value : 26
EXPR Value : 26
```