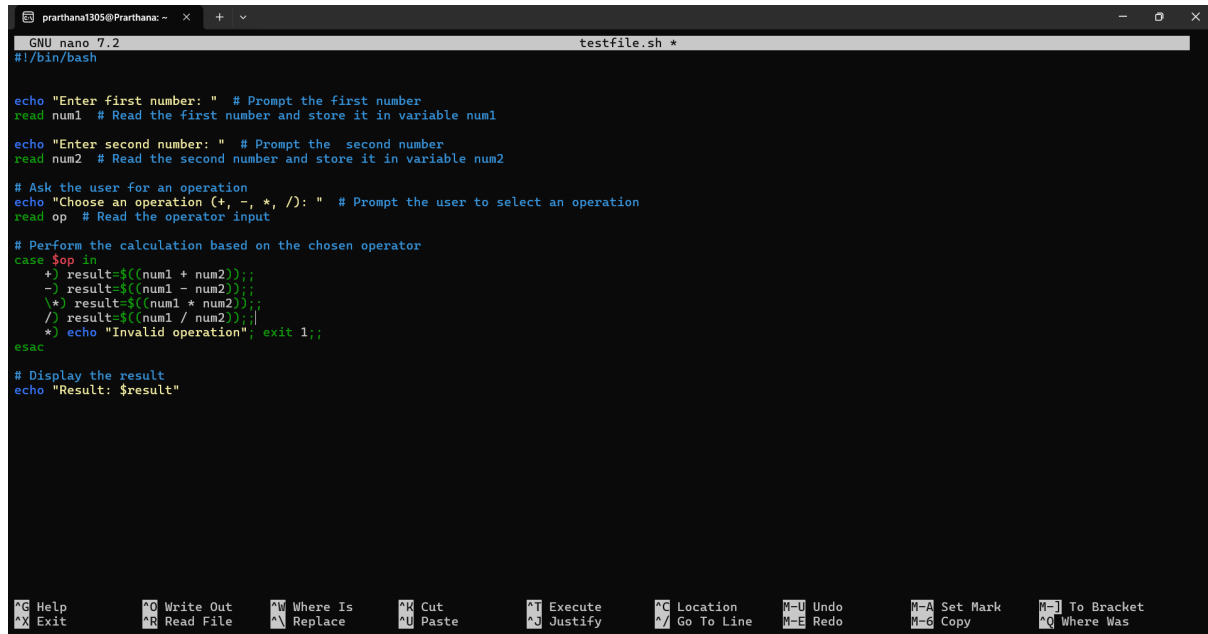


# Assignment 1-

## Part 2- Shell scripts

Shell script : calculator(to add,subtract,multiply,divide) two numbers:



```
prarthana1305@Prarthana: ~  
GNU nano 7.2 testfile.sh *  
#!/bin/bash  
  
echo "Enter first number: " # Prompt the first number  
read num1 # Read the first number and store it in variable num1  
  
echo "Enter second number: " # Prompt the second number  
read num2 # Read the second number and store it in variable num2  
  
# Ask the user for an operation  
echo "Choose an operation (+, -, *, /): " # Prompt the user to select an operation  
read op # Read the operator input  
  
# Perform the calculation based on the chosen operator  
case $op in  
+) result=$((num1 + num2));;  
-) result=$((num1 - num2));;  
*) result=$((num1 * num2));;  
/) result=$((num1 / num2));;  
*) echo "Invalid operation"; exit 1;;  
esac  
  
# Display the result  
echo "Result: $result"
```

output:



```
prarthana1305@Prarthana:~$ nano testfile.sh  
prarthana1305@Prarthana:~$ chmod +x testfile.sh  
prarthana1305@Prarthana:~$ ./testfile.sh  
Enter first number:  
5  
Enter second number:  
6  
Choose an operation (+, -, *, /):  
*  
Result: 30
```

### Use of nano in Shell Scripting

nano is a simple, lightweight, and user-friendly text editor used in Linux-based systems to create and edit files, including shell scripts.

### Summary of Basic Calculator (testfile.sh)

- User Input (read) → Takes two numbers and an operator from the user.
- Arithmetic Operations (\$((expression))) → Performs mathematical calculations.
- Case Statement (case ... esac) → Handles different arithmetic operations.
- Exit Status (exit 1) → Exits if an invalid operation is entered.

### Explanation:

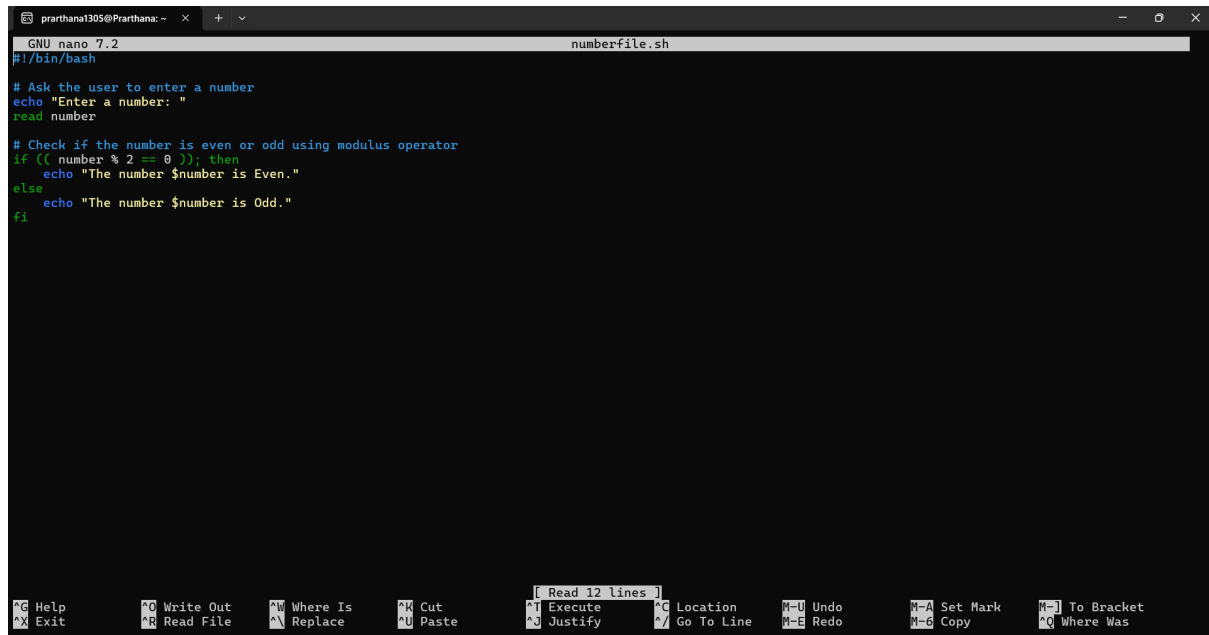
- Prompts the user to enter two numbers (num1 and num2).
- Prompts the user to choose an arithmetic operation (+, -, \*, /).
- Uses a case statement to check the selected operation.
- Performs the corresponding calculation using \$(( )).
- Displays the result or prints "Invalid operation" if the input is incorrect.

## Use Case:

This script automates simple arithmetic calculations, eliminating the need for manual calculations or using a calculator.

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## Shell script to check a number is even or odd:



```
prarthana1305@Prarthana: ~  
GNU nano 7.2 numberfile.sh  
#!/bin/bash  
  
# Ask the user to enter a number  
echo "Enter a number: "  
read number  
  
# Check if the number is even or odd using modulus operator  
if (( number % 2 == 0 )); then  
    echo "The number $number is Even."  
else  
    echo "The number $number is Odd."  
fi
```

## output:



```
prarthana1305@Prarthana:~$ nano numberfile.sh  
prarthana1305@Prarthana:~$ chmod +x numberfile.sh  
prarthana1305@Prarthana:~$ ./numberfile.sh  
Enter a number:  
548536  
The number 548536 is Even.
```

## Use of nano in Shell Scripting

nano is a simple, lightweight, and user-friendly text editor used in Linux-based systems to create and edit files, including shell scripts.

## Summary of Even or Odd number check:

User Input (read) → Accepts a number from the user.

Arithmetic Evaluation (((expression))) → Performs the modulus operation.

Conditional Statement (if-else) → Checks if the number is even or odd.

## Explanation:

Prompts the user to enter a number using echo.

Reads the input into the variable number using read.

Checks if the number is divisible by 2 using (( number % 2 == 0 )).

Prints "Even" or "Odd" based on the condition.

**Use Case:**

This script automates the process of checking whether a number is even or odd, reducing the need for manual calculations.