



**Student Name:** Sandeep Mandial

**Branch:** MCA CC & Devops

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## **Title of Project: Developing a Basic Calculator on CentOS Linux**

**Aim :** To design and implement a basic command-line calculator application on CentOS Linux, reinforcing understanding of Linux commands, scripting, and basic programming concepts. The project aims to strengthen skills in user input handling, conditional logic, and arithmetic operations within a Linux environment.

### **1. Task to be done:**

- **Set Up Environment:** Ensure CentOS Linux is set up and necessary permissions and tools are available.
- **Script Initialization:** Create a script file (e.g., calculator.sh for Bash ).
- **Define Calculator Functions:** Develop functions for basic arithmetic operations: addition, subtraction, multiplication, and division.
- **User Input Handling:** Implement input prompts and error handling for invalid inputs or zero division cases.
- **Conditional Logic:** Use conditional statements to determine the operation based on user input.
- **Testing and Debugging:** Test the calculator's functionality with various inputs and debug any issues.
- **Documentation:** Comment the code for clarity, and prepare a brief user guide if necessary.

## 2. Code for practical:

```
sandeep@localhost:/home/sandeep

[sandeep@localhost ~]$ su
Password:
[root@localhost sandeep]# vi calculator.sh
[root@localhost sandeep]# chmod 777 calculator.sh
```

```
sandeep@localhost:/home/sandeep — /usr/bin/vim calculator.sh

#!/bin/bash

echo "Enter the 1st number:"
read num1

echo "Enter the 2nd number:"
read num2

echo "Select the operation (+, -, *, /):"
read op

if [ "$op" == "+" ]; then
    result=$((num1 + num2))
elif [ "$op" == "-" ]; then
    result=$((num1 - num2))
elif [ "$op" == "*" ]; then
    result=$((num1 * num2))
elif [ "$op" == "/" ]; then
    result=$((num1 / num2))
fi

echo "The result is; $result"

"calculator.sh" 22L, 388B 22,29 All
```

### 3. Result/Output/Writing Summary:

```
sandeep@localhost:/home/sandeep
[root@localhost sandeep]# ./calculator.sh
Enter the 1st number:
20
Enter the 2nd number:
40
Select the operation (+, -, *, /):
+
The result is; 60
[root@localhost sandeep]#
```

```
[root@localhost sandeep]# ./calculator.sh
Enter the 1st number:
30
Enter the 2nd number:
10
Select the operation (+, -, *, /):
-
The result is; 20
[root@localhost sandeep]# ./calculator.sh
Enter the 1st number:
20
Enter the 2nd number:
2
Select the operation (+, -, *, /):
/
The result is; 10
[root@localhost sandeep]#
```

```
[root@localhost sandeep]# ./calculator.sh
Enter the 1st number:
1
Enter the 2nd number:
7
Select the operation (+, -, *, /):
*
./calculator.sh: line 14: [: missing `]'
The result is; 7
[root@localhost sandeep]# ./calculator.sh
```



### **Learning outcomes:**

- Understand and apply basic Linux command-line operations.
- Develop skills in writing and executing scripts on CentOS Linux.
- Gain experience in using conditional logic and user input handling.
- Demonstrate ability to implement basic arithmetic functions programmatically.
- Enhance problem-solving skills in a Linux scripting environment.
- . Press Escape then write :mq is used to save script.
- . i is used to insert something in script.