

Exp 2a)

Aim: To write a shellscript to build a basic calculator

Program:

```

Select haresh@haresh: /mnt/c/WINDOWS/OS_Lab
~/bin/bash

echo "***** BASIC CALCULATOR *****"
echo "Choose an operation:"
echo "1. Addition (+)"
echo "2. Subtraction (-)"
echo "3. Multiplication (*)"
echo "4. Division (/)"

read -p "Enter your choice [1-4]: " choice

read -p "Enter first number: " num1
read -p "Enter second number: " num2

case $choice in
    1)
        result=$((echo "$num1 + $num2" | bc))
        echo "Result: $num1 + $num2 = $result"
        ;;
    2)
        result=$((echo "$num1 - $num2" | bc))
        echo "Result: $num1 - $num2 = $result"
        ;;
    3)
        result=$((echo "$num1 * $num2" | bc))
        echo "Result: $num1 * $num2 = $result"
        ;;
    4)
        if [ "$num2" == "0" ]; then
            echo "Error: Division by zero!"
        else
            result=$((echo "scale=2; $num1 / $num2" | bc))
            echo "Result: $num1 / $num2 = $result"
        fi
        ;;
    *)
        echo "Invalid choice!"
        ;;
esac

"calc.sh" 40L, 837B

```

Output:

```
***** BASIC CALCULATOR *****
Choose an operation:
1. Addition (+)
2. Subtraction (-)
3. Multiplication (*)
4. Division (/)
Enter your choice [1-4]: 1
Enter first number: 1
Enter second number: 2
Result: 1 + 2 = 3
```

2b)

Aim: To write a shellscript to test a given year is leap or not using conditional statement.

Program:

```
#!/bin/bash

read -p "Enter a year: " year

if (( year % 400 == 0 )); then
    echo "$year is a leap year."
elif (( year % 100 == 0 )); then
    echo "$year is not a leap year."
elif (( year % 4 == 0 )); then
    echo "$year is a leap year."
else
    echo "$year is not a leap year."
fi
```

Output:

```
Enter a year: 2024
leapyear.sh: 5: year: not found
leapyear.sh: 7: year: not found
leapyear.sh: 9: year: not found
2024 is not a leap year.
```