

## Basic calculator:-

```
def add(a, b):
    answer = a + b
    print(str(a) + " + " + str(b) + " = " + str(answer) + "\n")
def sub(a, b):
    answer = a - b
    print(str(a) + " - " + str(b) + " = " + str(answer) + "\n")
def mul(a, b):
    answer = a*b
    print(str(a) + " * " + str(b) + " = " + str(answer) + "\n")
def div(a, b):
    answer = a / b
    print(str(a) + " / " + str(b) + " = " + str(answer) + "\n")
```

The provided Python code defines four functions: **add**, **sub**, **mul**, and **div**, each of which performs a basic mathematical operation and prints the result with a formatted string. Here's the explanation of each function:

1. **add(a, b):**

- This function takes two arguments, **a** and **b**, representing numbers to be added together.
- It calculates the sum of **a** and **b** and stores it in the **answer** variable.
- It then prints a string that represents the addition operation and the result:
  - For example, if **a** is 3 and **b** is 4, it would print "3 + 4 = 7" followed by a newline character ("\n").

2. **sub(a, b):**

- Similar to the **add** function, this function takes two arguments, **a** and **b**, representing numbers to be subtracted.
- It calculates the difference between **a** and **b** and stores it in the **answer** variable.
- It then prints a string that represents the subtraction operation and the result.

3. **mul(a, b):**

- This function takes two arguments, **a** and **b**, representing numbers to be multiplied.
- It calculates the product of **a** and **b** and stores it in the **answer** variable.
- It then prints a string that represents the multiplication operation and the result.

4. **div(a, b):**

- This function takes two arguments, **a** and **b**, representing numbers to be divided.
- It calculates the division of **a** by **b** and stores it in the **answer** variable.
- It then prints a string that represents the division operation and the result.

---

**This Python code appears to implement a simple command-line calculator that allows the user to perform basic arithmetic operations (addition, subtraction, multiplication, division) on two numbers.**

**Here's a step-by-step explanation of the code:-**

1) The code is enclosed in an infinite `while True:` loop, meaning it will keep running until explicitly terminated.-

2) Inside the loop, the program displays a menu of options to the user:-

```
while True:
    print("A. Addition")
    print("B. Subtraction")
    print("C. Multiplication")
    print("D. Division")
    print("E. Exit")
```

3) The user is prompted to input their choice:-

```
choice = input("input your choice: ")
```

```
if choice == "a" or choice == "A":
    print("Addition")
    a = int(input("input first number: "))
    b = int(input("input second number: "))
    add(a, b)
elif choice == "b" or choice == "B":
    print("Subtraction")
    a = int(input("input first number:"))
    b = int(input("input second number: "))
    sub(a, b)
elif choice == "c" or choice == "C":
    print("Multiplication")
    a = int(input("input first number:"))
    b = int(input("input second number: "))
    mul(a, b)
elif choice == "d" or choice == "D":
    print("Division" )
    a = int(input("input first number:"))
```

```
b = int(input("input second number: "))
div(a, b)
elif choice == "e" or choice == "E":
    print("program ended")
    quit()
```

- The program then checks the user's choice using a series of **if** and **elif** statements.
- The user's input is case-insensitive (both upper and lower case letters are accepted).
- If the user selects option "A" or "a," it prompts the user to enter two numbers, performs addition using the **add** function, and displays the result.
- If the user selects option "B" or "b," it prompts the user to enter two numbers, performs subtraction using the **sub-function**, and displays the result.
- If the user selects option "C" or "c," it prompts the user to enter two numbers, performs multiplication using the **mul** function, and displays the result.
- If the user selects option "D" or "d," it prompts the user to enter two numbers, performs division using the **div** function, and displays the result.
- If the user selects option "E" or "e," it prints "program ended" and quits the program using the **quit()** function, effectively terminating the infinite loop and ending the program.
- If the user enters an invalid choice, the program does nothing, and the menu is displayed again, prompting the user for a valid choice.