

Presentation on Python Calculator Project (Phase-4)

Subject Name: Independent Project

Subject Code: 21CSR-107

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Introduction:

- Many operations require one or more operands in order to form a complete instruction and most assembler can take expressions of numbers and named constants as well as registers and labels as operands, freeing the programmer from tedious repetitive calculations. Depending on the architecture, these elements are also being combined with specific instructions or addressing mode using offsets or other data as well as fixed addresses.
- Many assemblers offer additional mechanisms to facilitate program development to control the assembly process and to aid debugging.

Literature survey:

The calculator is one application that we all use in our day to day lives. If you are trying to get your hands dirty with programming in python, Calculator is a project which is easy and useful at the same time. Today, we are going to build a Python Calculator using Tkinter with easy to understand steps.

Problem Statement:

Due to the technological advancements and in increase business department there has been a lot of mathematical calculation and to tackle this problem there is a tool calculator used. The python Calculator Project can be used here, which can create a reliable and easy to solve problems which can prove to be of great benefit to the user who is trying to use it.

Objectives:

- It is easy to understand
- Mathematically correct.
- It will help people solving difficult number

Project Description:

- At the very first of our program, it will show the options to be calculated.
- If the input is valid then it will go to the next step and if it is not, then it will show the invalid number and exiting from the program.
- If the input is valid then the next step it will do the operations that user wants to operate.
- If user input 1 it will take input from the user and will do the addition of two entered numbers. And the result is distributed in Decimal.
- If user input 2 it will take input from the user and will do the subtraction of two entered numbers. And the result is distributed in Decimal.
- If user input 3 it will take input from the user and will do the multiplication of two entered numbers. And the result is distributed in Decimal.
- If user input 4 it will take input from the user and will do the division of two entered numbers. In this case, it will also show the remainder of the numbers after divided. And the result is distributed in Decimal.
- After every operation, it will take your opinion that either you want to exit, or you want further calculation. If you want to exit, then it will simply exit by entering 0. Otherwise, it will start from the beginning of the program.

Project outcomes:

Here is the snapshot of Addition, Subtraction, Multiplication, and Division accordingly.

```
Choose an option: |
```

```

Welcome to Tiny Calculator
1 - Addition
2 - Subtraction
3 - Multiplication
4 - Division
0 - Exit

Choose an option: 1
Please enter first number: 2
Please enter second number: 5
The addition of 2 , 5 is = 7

Welcome to Tiny Calculator
1 - Addition
2 - Subtraction
3 - Multiplication
4 - Division
0 - Exit

Choose an option: 2
Please enter first number: 4
Please enter second number: 7
The subtraction of 4 , 7 is = -3

Welcome to Tiny Calculator
1 - Addition
2 - Subtraction
3 - Multiplication
4 - Division
0 - Exit

Choose an option: 3
Please enter first number: 4
Please enter second number: 6
The multiplication of 4 , 6 is = 24

Welcome to Tiny Calculator
1 - Addition
2 - Subtraction
3 - Multiplication
4 - Division
0 - Exit

Choose an option: 4
Please enter first number: 4
Please enter second number: 4
The quotient of 4 , 4 is = 1
And the remainder is: 0
```


Conclusions:

Assembly language still taught in most computer science and electronic engineering programs. Although few programmers today regularly work with assembly language as a tool, the underlying concepts remain very important.

My calculator can calculate with big values. Despite having some limitations, I can get the concept of more perfect programs with this.

References:

1. <https://data-flair.training/blogs/python-calculator-project/>
2. https://www.researchgate.net/publication/322538460_Developing_Encoder_Using_Python_and_Tiny_Calculator_Using_Assembly_Language_Programming

Code:

```
class Calculator:
    def add(self, a, b):
        return a+b
    def subtract(self, a, b):
        return a-b
    def multiply(self, a, b):
        return a*b
    def divide(self, a, b):
        return a/b
my_cl = Calculator()
print("Welocome to Tiny Calculator")
while True:
    print("1: Add")
    print("2: Subtract")
    print("3: Multiply")
    print("4: Divide")
    print("0: Exit")
    ch = int(input("Select operation: "))
    if ch in (1, 2, 3, 4, 5):
        if(ch == 5):
            break
        a = int(input("Enter first number: "))
        b = int(input("Enter second number: "))
        if(ch == 1):
            print(a, "+", b, "=", my_cl.add(a, b))
        elif(ch == 2):
            print(a, "-", b, "=", my_cl.subtract(a, b))
        elif(ch == 3):
            print(a, "*", b, "=", my_cl.multiply(a, b))
        elif(ch == 4):
            print(a, "/", b, "=", my_cl.divide(a, b))
    else:
        print("Invalid Input")
```

Thanks