

TITLE: CodTech IT Solutions Internship - Task Documentation: “Simple Arithmetic Calculator Program” Using Python.

INTERN INFORMATION:

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Program Name: Simple Arithmetic Calculator

Description:

This program implements a simple arithmetic calculator that allows users to perform basic mathematical operations such as addition, subtraction, multiplication, division, and exponentiation. The calculator provides a menu-driven interface for user interaction.

Functions:

1. add (x, y):

- Description: This function adds two numbers.
- Parameters:
 - x (float): The first number.
 - y (float): The second number.
- Returns:
 - float: The sum of x and y.

2. subtract (x, y):

- Description: This function subtracts one number from another.
- Parameters:
 - x (float): The first number (minuend).
 - y (float): The second number (subtrahend).
- Returns:
 - float: The result of subtracting y from x.

3. multiply (x, y):

- Description: This function multiplies two numbers.
- Parameters:
 - x (float): The first number.
 - y (float): The second number.
- Returns:
 - float: The product of x and y.

4. divide (x, y):

- Description: This function divides one number by another.
- Parameters:
 - x (float): The numerator (dividend).
 - y (float): The denominator (divisor).
- Returns:
 - float or str: The result of dividing x by y. If y is 0, returns an error message.

5. exponentiate (x, y):

- Description: This function calculates the exponentiation of a number.
- Parameters:
 - x (float): The base.
 - y (float): The exponent.
- Returns:
 - float: The result of raising x to the power of y.

6. calculator ():

- Description: This function serves as the main calculator interface, allowing users to select operations and input numbers for computation.
- Returns:
 - None

Usage:

- The program prompts the user to select an operation (addition, subtraction, multiplication, division, exponentiation, or quit).
- Upon choosing an operation, the user is prompted to input the required numbers.
- The program then performs the selected operation and displays the result.
- The user can continue performing operations or choose to quit the program.

Result:

```
38         print("Result:", add(num1, num2))
39     elif choice == '2':
40         print("Result:", subtract(num1, num2))
41     elif choice == '3':
42         print("Result:", multiply(num1, num2))
43     elif choice == '4':
44         print("Result:", divide(num1, num2))
45     elif choice == '5':
46         print("Result:", exponentiate(num1, num2))
47     elif choice == '6':
48         print("Exiting the program...")
49         break
50     else:
51         print("Invalid input")
52
53
54 if __name__ == "__main__":
55     calculator()
56
```

```
Select operation:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exponentiation
6. Quit
Enter choice (1/2/3/4/5/6): 1
Enter first number: 25
Enter second number: 25
Result: 50.0
Enter choice (1/2/3/4/5/6): 6
Exiting the program...
```