

## Python Calculator

This project is a simple **Python Calculator** application that performs basic arithmetic operations: addition, subtraction, multiplication, and division. Despite its simplicity, this calculator project serves as a foundation for understanding Python functions, conditional statements, and user input handling.

### Project Overview:

The **Python Calculator** is designed to be an interactive console application where users can perform arithmetic operations on two numbers. The program includes user-friendly prompts for selecting the desired operation and allows the flexibility to repeat calculations until the user decides to exit.

### Features:

- **Basic Operations:** Supports the following arithmetic functions:
  - Addition
  - Subtraction
  - Multiplication
  - Division
- **Flexible Command Input:** Accepts multiple variations of each command, such as A, ADD, Addition for addition, making it user-friendly.
- **Continuous Calculation Option:** After each calculation, the user is prompted to perform another calculation or exit the program.
- **Error Handling:** Prompts the user to enter a valid operation if an unrecognized command is provided.

### How It Works:

1. **User Input:** The program begins by prompting the user to select an arithmetic operation (Addition, Subtraction, Multiplication, or Division).
2. **Input Validation:** Ensures the input matches one of the accepted commands (A, S, M, D) or full words (e.g., ADD, SUBTRACT).
3. **Operation Execution:** Once a valid operation is chosen, the program asks the user to enter two numbers, then performs the chosen operation.
4. **Looping Option:** After displaying the result, the user can either start a new calculation or exit by responding with "yes" or "no".

### Example Usage:

Enter choice (A,S,M,D): A

Enter first number: 5

Enter second number: 3

Result:  $5 + 3 = 8$

Want to do another calculation? (yes/no): yes

Enter choice (A,S,M,D): M

Enter first number: 4

Enter second number: 2

Result:  $4 * 2 = 8$

Want to do another calculation? (yes/no): no

### **Customization:**

To expand the functionality of this calculator, you can add more mathematical operations such as exponentiation, square root, or even trigonometric functions. Additionally, you can add more robust error handling for invalid numeric inputs.

### **Requirements:**

- Python 3.x

### **Running the Calculator:**

1. Save the script in a .py file (e.g., calculator.py).
2. Run the script from the command line:

```
python calculator.py
```