Basic Calculator Program

Algorithm

1. Start.

2. Display the list of operations:

   - 1. Add
   - 2. Subtract
   - 3. Multiply
   - 4. Divide

3. Prompt the user to enter their choice (1, 2, 3, or 4).

4. Check if the entered choice is valid:

   - If not valid, display an error message and go back to the menu.

5. Prompt the user to input two numbers:

   - Input `num1` (first number).
   - Input `num2` (second number).

6. Perform the operation based on the user's choice:

   - If choice = 1: Add the two numbers and display the result.
   - If choice = 2: Subtract the second number from the first and display the result.
   - If choice = 3: Multiply the two numbers and display the result.
   - If choice = 4: Check if the second number is 0:
     - If `num2 = 0`: Display "Division by zero is not allowed."
     - Otherwise, divide the first number by the second and display the result.

7. Ask if the user wants to perform another calculation:

   - If "yes," go back to the menu.
   - If "no," proceed to the next step.

8. Display a goodbye message and terminate the program.

9. End.

Python Program

Listing 1: Simple Calculator Program

```python
# Simple Calculator Program for School Kids

print("Select operation:")
print("1. Add")
print("2. Subtract")
print("3. Multiply")
print("4. Divide")

while True:
    # Take input for the operation
    choice = input("Enter choice (1/2/3/4): ")

    if choice in ['1', '2', '3', '4']:
        # Take two numbers as input
        num1 = float(input("Enter the first number: "))
        num2 = float(input("Enter the second number: "))

        if choice == '1':  # Addition
            result = num1 + num2
            print("The result is: ", result)
        elif choice == '2':  # Subtraction
            result = num1 - num2
            print("The result is: ",result)
        elif choice == '3':  # Multiplication
            result = num1 * num2
            print("The result is: ",result)
        elif choice == '4':  # Division
            if num2 != 0:  # Ensure the denominator is not zero
                result = num1 / num2
                print("The result is: ",result)
            else:
                print("Error! Division by zero is not allowed.")

        # Ask the user if they want to perform another calculation
        again = input("Do you want to perform another calculation?
        (yes/no): ")
        if again.lower() != 'yes':
            print("Goodbye!")
            break
    else:
        print("Invalid choice! Please enter 1, 2, 3, or 4.")
```

Example Output

```
Select operation:
1. Add
```

```
2. Subtract
3. Multiply
4. Divide
Enter choice (1/2/3/4): 1
Enter the first number: 8
Enter the second number: 4
The result is: 12.0
Do you want to perform another calculation? (yes/no): yes
Enter choice (1/2/3/4): 4
Enter the first number: 10
Enter the second number: 0
Error! Division by zero is not allowed.
Do you want to perform another calculation? (yes/no): no
Goodbye!
```