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[1]: def add(x, y):
      return x + y

      def subtract(x, y):
          return x - y

      def multiply(x, y):
          return x * y

      def divide(x, y):
          if y == 0:
              return "Error! Division by zero."
          return x / y

      print("Simple Calculator")
      print("Select operation:")
      print("1. Addition")
      print("2. Subtraction")
      print("3. Multiplication")
      print("4. Division")

      while True:
          choice = input("\nEnter choice (1/2/3/4 or 'q' to quit): ")

          if choice.lower() == 'q':
              print("Exiting calculator. Goodbye!")
              break

          if choice in ('1', '2', '3', '4'):
              try:
                  num1 = float(input("Enter first number: "))
                  num2 = float(input("Enter second number: "))
              except ValueError:
                  print("Invalid input! Please enter numbers only.")
                  continue

              if choice == '1':
                  print(f"Result: {num1} + {num2} = {add(num1, num2)}")
              elif choice == '2':
                  print(f"Result: {num1} - {num2} = {subtract(num1, num2)}")
              elif choice == '3':
                  print(f"Result: {num1} * {num2} = {multiply(num1, num2)}")
              elif choice == '4':
                  print(f"Result: {num1} / {num2} = {divide(num1, num2)}")
          else:
              print("Invalid choice! Please choose a valid option.")
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        print(f"Result: {num1} / {num2} = {divide(num1, num2)}")
    else:
        print("Invalid choice! Please choose a valid option.")
```

Simple Calculator

Select operation:

1. Addition
2. Subtraction
3. Multiplication
4. Division

Enter choice (1/2/3/4 or 'q' to quit): 1

Enter first number: 10

Enter second number: 5

Result: 10.0 + 5.0 = 15.0

Enter choice (1/2/3/4 or 'q' to quit): 3

Enter first number: 10

Enter second number: 2

Result: 10.0 * 2.0 = 20.0

Enter choice (1/2/3/4 or 'q' to quit): 4

Enter first number: 5

Enter second number: 0

Result: 5.0 / 0.0 = Error! Division by zero.

Enter choice (1/2/3/4 or 'q' to quit): 2

Enter first number: 20

Enter second number: 4

Result: 20.0 - 4.0 = 16.0

Enter choice (1/2/3/4 or 'q' to quit): q

Exiting calculator. Goodbye!