

Here's a Python implementation of a simple calculator:

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```
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:  
        raise ValueError("Division by zero is not allowed")  
    return x / y  
  
def calculator():  
    while True:  
        print("\nOptions:")  
        print("1. Add")  
        print("2. Subtract")  
        print("3. Multiply")  
        print("4. Divide")  
        print("5. Exit")  
  
        choice = input("Enter choice (1/2/3/4/5): ")
```

```
if choice == '5':
```

```
    print("Exiting the calculator. Goodbye!")
```

```
    break
```

```
if choice not in ('1', '2', '3', '4'):
```

```
    print("Invalid choice. Please enter a valid option.")
```

```
    continue
```

```
try:
```

```
    num1 = float(input("Enter first number: "))
```

```
    num2 = float(input("Enter second number: "))
```

```
except ValueError:
```

```
    print("Invalid input. Please enter numeric values.")
```

```
    continue
```

```
if choice == '1':
```

```
    print("Result:", add(num1, num2))
```

```
elif choice == '2':
```

```
    print("Result:", subtract(num1, num2))
```

```
elif choice == '3':
```

```
    print("Result:", multiply(num1, num2))
```

```
elif choice == '4':
```

```
    try:
```

```
        print("Result:", divide(num1, num2))
```

```
    except ValueError as e:
```

```
        print("Error:", e)
```

```
if __name__ == "__main__":
```

```
    calculator()
```

This program defines functions for addition, subtraction, multiplication, and division. It then prompts the user for two numbers and an operator, performs the corresponding arithmetic operation, and displays the result. Error handling is implemented for division by zero and invalid inputs. The user can perform multiple calculations in a single run until they choose to exit by entering '5'.