

```
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
```

```
def main():  
    print("Simple Calculator")
```

```
while True:
```

```
    try:
```

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

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

```
    except ValueError:
```

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

```
        continue
```

```
print("\nChoose operation:")
```

```
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 == '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':
    result = divide(num1, num2)
    print(f"Result: {num1} / {num2} = {result}")
elif choice == '5':
    print("Exiting the calculator. Goodbye!")
    break
else:
    print("Invalid choice. Please choose a valid operation.")
```

```
if __name__ == "__main__":
    main()
```