Python Programming

Build a Python Calculator

Create a Python program that functions as a basic calculator. Your calculator should be able to perform the following operations:

- **Addition**
- **Subtraction**
- **Multiplication**
- **Division**

The program should follow these requirements:

- The calculator should continuously prompt the user for input until they choose to exit.
- The user should be able to select an operation by entering the corresponding number.
- After performing the calculation, display the result to the user.
- Handle invalid inputs gracefully and provide appropriate feedback to the user.
- Include an option for the user to exit the calculator.

Here is an example of the expected output:

```
Welcome to the Python Calculator!

Select an operation:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1, 2, 3, 4, or 5): 2
Enter the first number: 42
Enter the second number: 30
Result: 42.0 - 30.0 = 12.0
```

```
Select an operation:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1, 2, 3, 4, or 5): 4
Enter the first number: 25
Enter the second number: 5
Result: 25.0 / 5.0 = 5.0

Select an operation:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1, 2, 3, 4, or 5): 5
Exiting the calculator. Goodbye!
```

Submission Instructions

- Submit your Python script.
- Publish it on Github and add the link in the comments.
- Ensure that your program adheres to good coding practices (clear variable names, comments where necessary, etc.).

Feel free to enhance the calculator with additional features or error handling if you wish!