Problem Statement 1

Basic Calculator

Design and implement a simple calculator program that allows users to perform basic arithmetic operations: **addition, subtraction, multiplication, and division**. The calculator should be interactive and allow users to perform multiple calculations until they choose to exit the program. It should handle basic input validation and provide appropriate error messages for invalid inputs (e.g., division by zero).

Output Example:

```
Welcome to the Basic Calculator!
Select an operation:
1. Addition (+)
2. Subtraction (-)
3. Multiplication (*)
4. Division (/)
5. Exit
Enter your choice: 1
Enter first number: 10
Enter second number: 5
Result: 15
```

Problem Statement 2:

Number Guessing Game

Create a simple number guessing game where the coder randomly selects a number between a given range (e.g., 1 to 100), and the user tries to guess the number. The program should continue to ask the user for guesses until they correctly identify the number. Use a loop to handle repeated guesses and provide feedback to the user after each guess, indicating if the guessed number is too high, too low, or correct.

Output Example:

Output

```
Welcome to the Number Guessing Game!
I'm thinking of a number between 1 and 100.
Enter your guess: 50
Too high! Try again.
Enter your guess: 30
Too low! Try again.
Enter your guess: 35
Too low! Try again.
Enter your guess: 40
Too low! Try again.
Enter your guess: 42
Correct! You've guessed the number in 5 attempts.
Do you want to play again? (y/n): y
```