Test-Driven Development (TDD)

Test-Driven Development (TDD) is a software development methodology where tests are written **before** writing the actual code. It follows a structured process:

1. **Write a test**: Create a test case based on the requirements.

2. **Run the test**: The test will fail since the actual code doesn't exist yet.

3. **Write the minimal code**: Develop only the necessary code to pass the test.

4. **Run the test again**: Ensure the test now passes.

5. **Refactor the code**: Optimize the code while keeping it functional.