### **Assignment 4: Infographic - Test-Driven Development (TDD) Process**

**Title:** Understanding the Test-Driven Development (TDD) Cycle

**TDD Process Steps:**

1. Write a Test  
   * Begin by writing a test case based on the requirement.
   * The test will initially fail because the code doesn’t exist yet.
2. Write the Minimum Code  
   * Write only the code necessary to make the test pass.
   * Keep it simple and minimal.
3. Run All Tests  
   * Run the tests to confirm that the new test fails initially and passes after code implementation.
4. Refactor  
   * Improve the code by removing duplication or optimizing performance, while ensuring that all tests continue to pass.
5. Repeat  
   * Continue the cycle with the next piece of functionality.

**Benefits of TDD:**

* Reduces the number of bugs during development.
* Ensures code is testable and reliable.
* Improves code quality and structure.
* Increases confidence when making changes or refactoring.
* Encourages modular and maintainable code.
* Provides clear documentation through tests.