Assignment 1:

Create an infographic illustrating the Test-Driven Development (TDD) process. Highlight steps like

writing tests before code, benefits such as bug reduction, and how it fosters software reliability.

1.Write Test Cases

Before writing any code, developers create test cases that define the desired behavior of the software.

2.Run Tests

Execute the test cases. Initially, all tests should fail because no code has been implemented yet.

3. Write Code

Develop the minimum amount of code required to pass the failing tests. Focus solely on fulfilling the requirements outlined in the test cases.

4. Refactor Code

Once the tests pass, refactor the code to improve its structure, readability, and performance without changing its behavior.

5. Repeat

Iterate through steps 1 to 4 for each new feature or piece of functionality.

Benefits of TDD:

1. Reduced Bugs

TDD helps catch bugs early in the development process, making them cheaper and easier to fix.

2. Improved Software Reliability

By continually testing and refining code, TDD promotes the creation of more reliable and robust software.

3. Faster Development

Despite the initial investment in writing tests, TDD often results in faster development cycles as it prevents the accumulation of technical debt and debugging time later in the process.

4. Better Documentation

Test cases serve as living documentation, providing insights into the intended behavior of the software and aiding in its maintenance and evolution.

5. Increased Developer Confidence

TDD encourages developers to write code with confidence, knowing that it's thoroughly tested and less prone to unexpected errors.