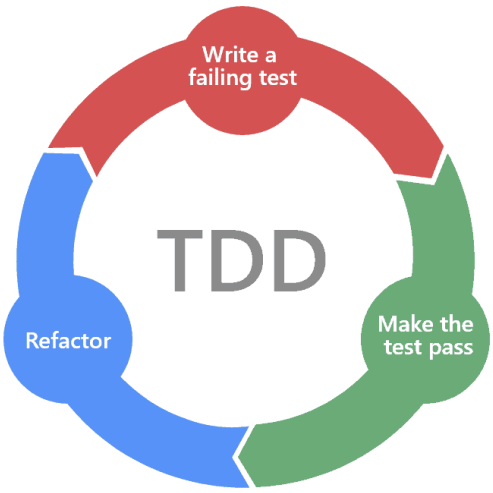
Assignment 1: Create an infographic illustrating the Test-Driven Development (TDD) process. Highlight steps like writing tests before code, benefits such as bug reduction, and how it fosters software reliability.

Test-Driven Development (TDD):

Test-Driven Development (TDD) is a software development approach where tests are written before the code itself. This methodology emphasizes writing a test for each small functionality, running the test to ensure it fails (since the functionality isn't implemented yet), then writing just enough code to make the test pass, and finally refactoring the code while ensuring the tests still pass.

TDD usually follows the "Red-Green-Refactor" cycle:

1. Add a test to the test suite
2. (**Red**) Run all the tests to ensure the new test fails
3. (**Green**) Write just enough code to get that single test to pass
4. Run all tests
5. (**Refactor**) Improve the initial code while keeping the tests green
6. Repeat



Benefits of Test Driven Development (TDD):

- Fosters the creation of optimized code.
- It helps developers better analyze and understand client requirements and request clarity when not adequately defined.

- Adding and testing new functionalities become much easier in the latter stages of development.
- Test coverage under TDD is much higher compared to conventional development models. The TDD focuses on creating tests for each functionality right from the beginning.
- It enhances the productivity of the developer and leads to the development of a codebase that is flexible and easy to maintain.