Assignment – 04

TDD PROCESS:

Test-driven development (TDD) is a software development practice that emphasizes writing tests before writing the actual code. It follows a cyclical process of writing a failing test, writing the minimum code to make the test pass, and then refactoring the code.

*.Start Here → Begin with a feature request.

*.Write a Test → Before writing code, define what the feature should do.

*.Test Fails (Red) → Initially, the test will fail since no code exists yet.

*.Write Code (Green) → Write just enough code to pass the test.

*.Refactor → Improve the code without changing its behavior.

*.Clean Code → Ensure the codebase is maintainable and readable.

*.Iterate → Repeat the cycle for the next feature or improvement.

Bug Reduction:Tests are written to define expected behavior upfront, so bugs are caught immediately when behavior deviates.Every feature is backed by a test, reducing regression issues.

Foster Software reliability: Since tests are part of the development cycle, they serve as a safety net when making changes.Developers gain confidence to refactor and evolve the system, knowing tests will catch unexpected breakages.