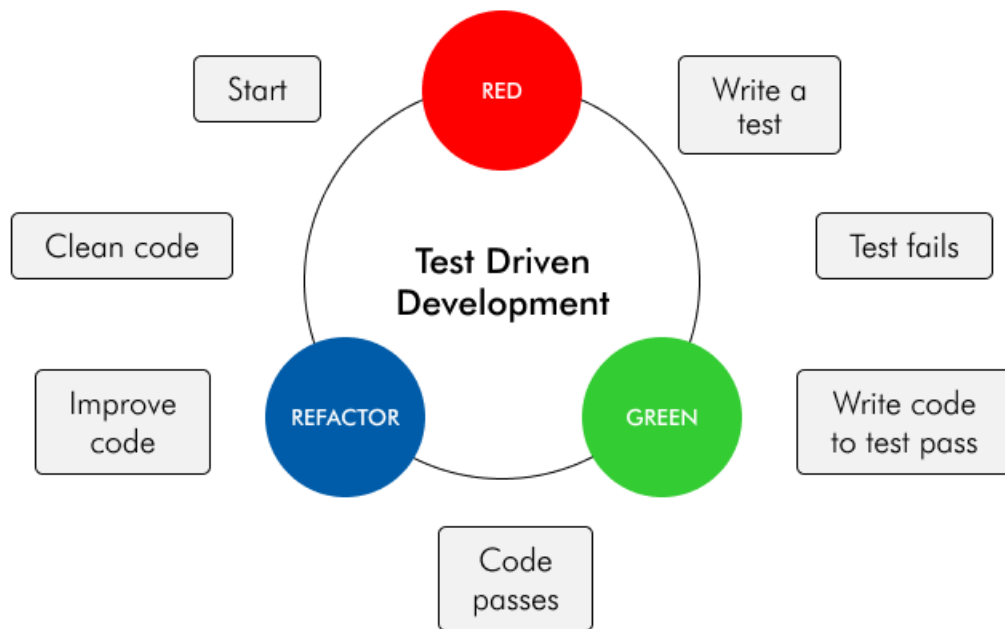


Assignment 1: create an infographic illustrating test driven development (TDD) process. highlight steps like writing test before code, benefits such as bug reduction. and how it fosters software reliability.



Title: Understanding Test Driven Development (TDD)

TDD Cycle

Write a Test:

Write a test for new functionality.

Visual: Icon of a paper and pencil.

Run the Test and Fail:

Test fails since the code isn't written yet.

Visual: Icon of a red cross.

Write Code to Pass the Test:

Write the minimum code to make the test pass.

Visual: Icon of a code editor with a green checkmark.

Run All Tests:

Ensure all tests pass.

Visual: Icon of test scripts running with green checkmarks.

Refactor:

Optimize code while keeping tests passing.

Visual: Icon of a wrench and screwdriver.

Repeat:

Continue the cycle for each new feature.

Visual: Icon of a loop or cycle arrows.

Benefits of TDD

Bug Reduction:

Catch bugs early.

Visual: Icon of a bug with a red cross.

Improved Code Quality:

Clean, maintainable code.

Visual: Icon of a checklist.

Documentation:

Tests explain code functionality.

Visual: Icon of a document.

Confidence in Changes:

Ensure new code doesn't break existing functionality.

Visual: Icon of a shield.

Faster Debugging:

Immediate feedback speeds up debugging.

Visual: Icon of a stopwatch.

TDD and Software Reliability

Continuous Testing:

Ensures software works as expected.

Visual: Icon of a loop with a checkmark.

Early Bug Detection:

Reduces cost and effort of fixes.

Visual: Icon of a bug being squashed.

Stable Codebase:

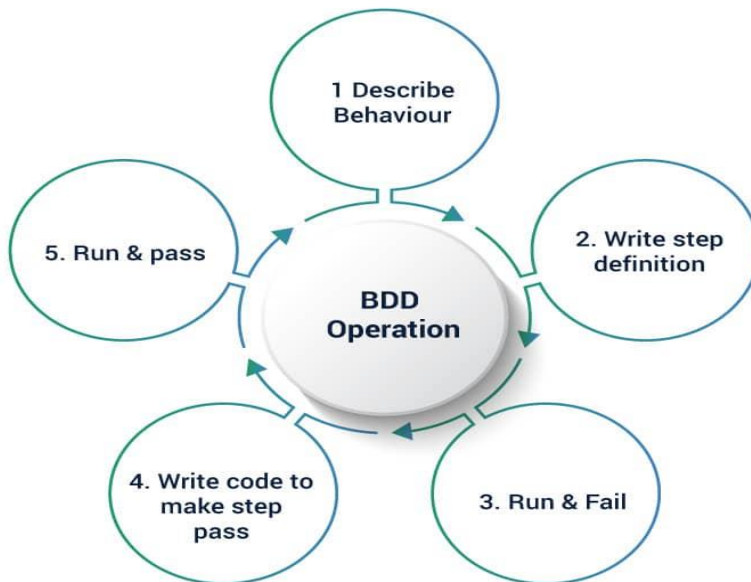
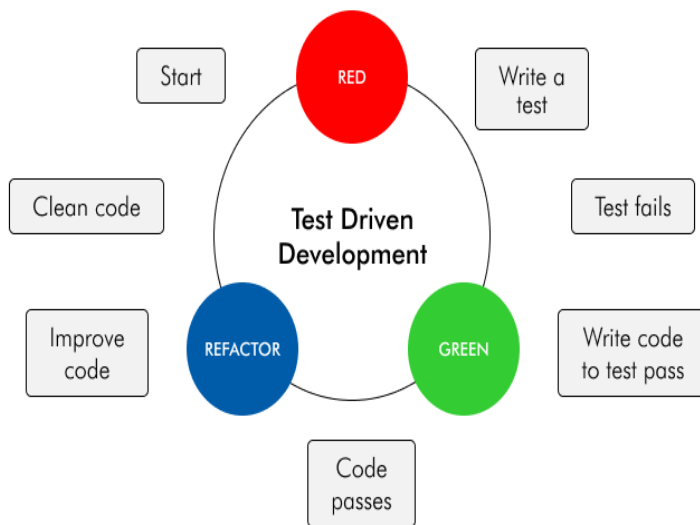
Maintains a reliable codebase.

Visual: Icon of a lock.

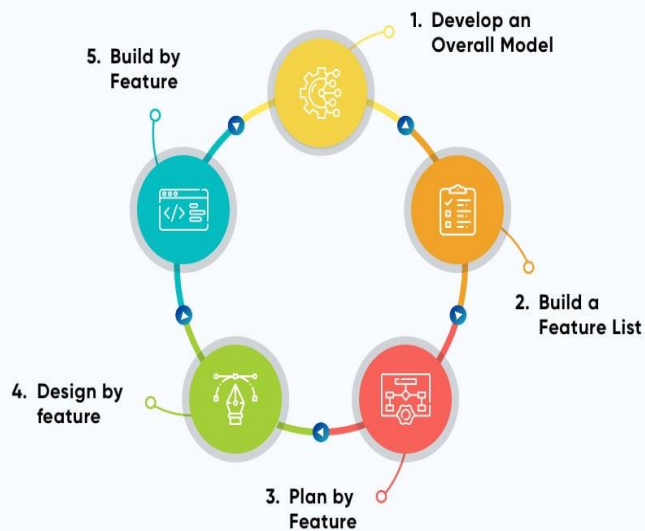
Adaptability:

Easy to extend software confidently.

Assignment 2: produce a comparative infographic of TDD,BDD, and FDD methodologies.illustrate their unique approaches. benefits, and suitability for different software development contexts.use visuals to enhance understanding.



Feature-Driven Development (FDD)



Section 1: Introduction

Test Driven Development (TDD)

Definition: Write tests before code to define and validate functionality.

Visual: Icon of a test script and code.

Behavior Driven Development (BDD)

Definition: Write tests based on expected behavior described in natural language.

Visual: Icon of a dialogue bubble and test script.

Feature Driven Development (FDD)

Definition: Develop features in small, manageable increments.

Visual: Icon of a feature list and a timeline.

Section 2: Unique Approaches

TDD Approach

Write Test:

Write a test before writing code.

Visual: Paper and pencil icon.

Code:

Write the minimal code to pass the test.

Visual: Code editor icon.

Refactor:

Refactor code while keeping tests passing.

Visual: Wrench icon.

BDD Approach

Define Behavior:

Define expected behavior using scenarios.

Visual: Scenario icon.

Write Test:

Write tests based on these scenarios.

Visual: Test script icon.

Implement Code:

Develop code to satisfy the tests.

Visual: Code icon.

FDD Approach

Modeling:

Create a high-level object model.

Visual: Model diagram icon.

Feature List:

Develop a feature list.

Visual: Feature list icon.

Plan by Feature:

Plan and design by feature.

Visual: Planning icon.

Build by Feature:

Develop and deliver features incrementally.

Visual: Incremental delivery icon.

Section 3: Benefits

TDD Benefits

Bug Reduction:

Catch bugs early.

Visual: Bug icon with a cross.

High Code Quality:

Maintainable and clean code.

Visual: Checklist icon.

BDD Benefits

Clear Requirements:

Better understanding of requirements.

Visual: Dialogue bubble icon.

Improved Collaboration:

Enhanced communication between stakeholders.

Visual: Teamwork icon.

FDD Benefits

Scalable Development:

Manage large projects efficiently.

Visual: Scalability icon.

Frequent Deliverables:

Continuous delivery of features.

Visual: Delivery box icon.

Section 4: Suitability

TDD Suitability

Best for:

Complex logic and algorithms.

Projects needing rigorous testing.

Visual: Puzzle icon.

BDD Suitability

Best for:

Projects requiring clear, shared understanding.

Enhancing stakeholder communication.

Visual: Speech bubble icon.

FDD Suitability

Best for:

Large-scale projects.

Teams needing structured, incremental development.

Visual: Building blocks icon.