Assignment 2:

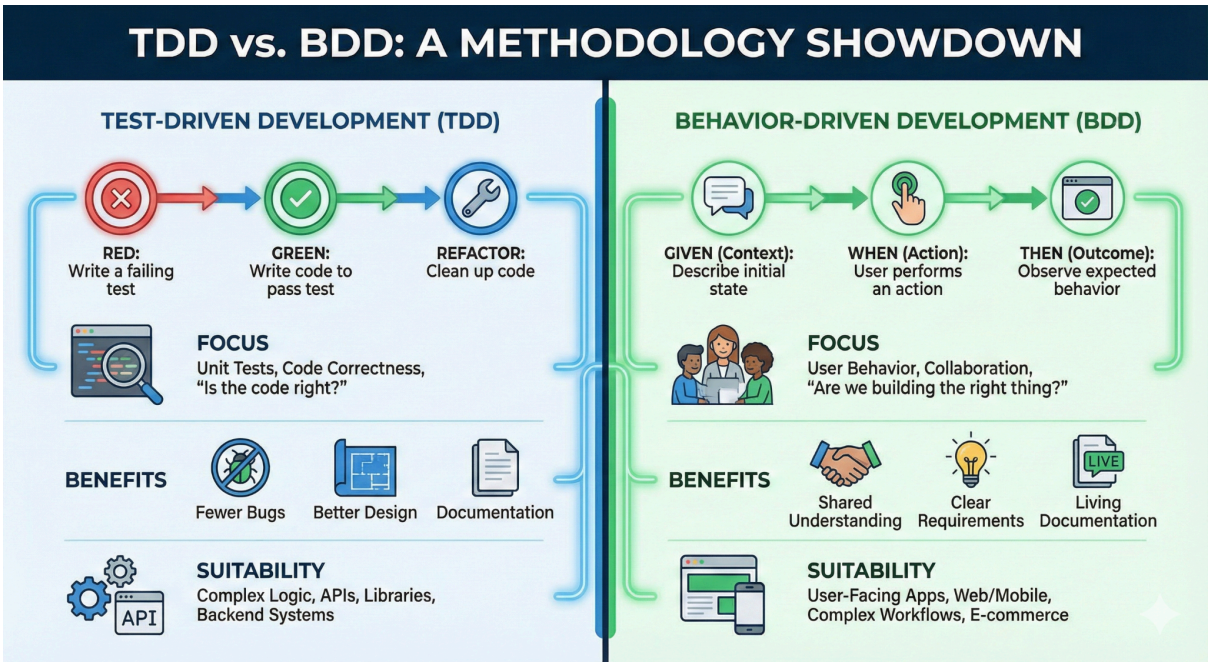
Difference Between TDD and BDD Methodologies

1. Introduction

Software testing methodologies help ensure that applications behave correctly and meet user expectations. Two widely used approaches are:

- **TDD – Test Driven Development**
- **BDD – Behavior Driven Development**

Both aim to improve software quality, but they differ in process, focus, and communication style.



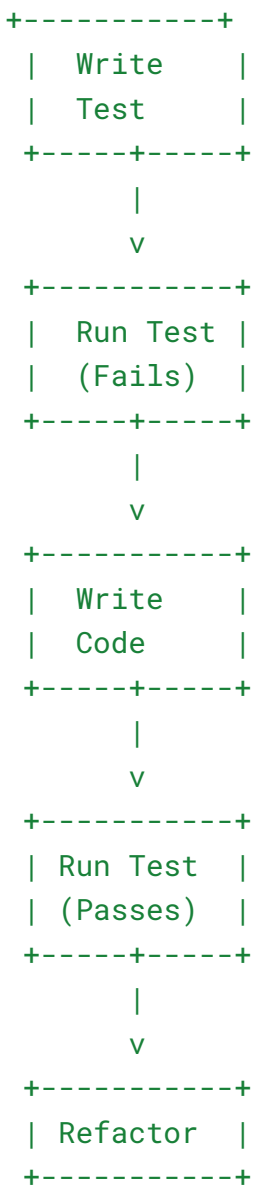
---

2. What is TDD (Test Driven Development)?

Definition

TDD is a development practice where **tests are written before writing the actual code**. Developers use failing tests to guide the implementation.

TDD Visual Workflow



Key Points

- Tests drive the development.
- Focus on **unit-level** functionality.
- Written mostly by **developers**.

Benefits

- Ensures high code quality.

- Reduces bugs early.
- Produces simple and clean code.
- Encourages modular design.

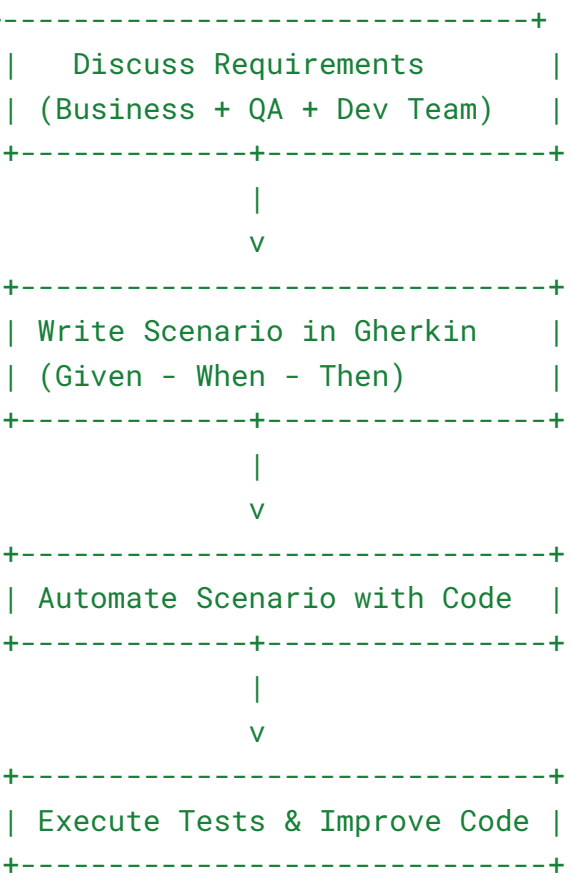
---

3. What is BDD (Behavior Driven Development)?

Definition

BDD focuses on defining **application behavior** from the user's perspective using natural language.
It is an extension of TDD but emphasizes collaboration among developers, testers, and business users.

BDD Visual Workflow



Example BDD Scenario (Gherkin)

```
Feature: Login
```

```
Scenario: Successful login
  Given the user is on the login page
  When they enter valid credentials
  Then they should see the dashboard
```

Key Points

- Behavior-focused.
- Uses natural language to describe features.
- Encourages team communication.

Benefits

- Improves communication across teams.
- Ensures the software behaves as users expect.
- Enhances requirement clarity.
- Reduces misunderstandings between business and technical teams.

---

4. Visual Summary