

## Day 11

## Javascript testing frameworks:-

- One of the strengths of such frameworks is that we don't have to use comments to describe our expectations. The text syntax itself becomes expectation documenting.

- When we write tests, those tests are a better alternative to comments in our source code because they specify what expectations our source code is trying to satisfy.

- Tests are callable, meaning we can execute tests to check if expectations are met.

- javascript testing library - Jasmine, Mocha, Karma, qUnit.

- To write an expectation in some testing framework such as JEST we can use the function that has the name expect.

## JEST

```
expect(concatStrings("abc", "def")).toBe("abcdef");
```

- Testing in javascript lets us verify that the function is behaving in the way we intended.

- Testing code in the way ensures three things.

① Conciseness as it is straight forward and to the point. Since there are only two function calls to explain what is expected result.

② Clarity because we know exactly what arguments we are providing

③ Repeatability as we can run it again and again with some arguments each time.

\* Refactoring - Updating code, without affecting the results it produces

\* Testing - Confirming that software works as specified in the software's requirements.

- for UX designer testing might mean  $\pm$  making sure that the website looks and behaves as expected.

- For project manager on a software project testing might mean that a specific piece of software works well with other parts of our system - for a software engineer.

- for a software engineer testing might mean writing code that doesn't break the existing functionality is bug free and satisfies the requirement as set out in a given task. bas

Types of testing - 1) E2E (e2e) (end to end)  
2) Integration  
3) Unit.

1) E2E - In this testing we need to open our web application in browser and then test it by interacting with the page the same way a user might interact with it.

- Slow and time consuming

- e2e testing framework : ① WebdriverJS

② Protractor

③ Cypress.

2) Integration testing - It is testing how separate parts of our apps work together

- Faster and cheaper than e2e but not unit testing

- Integration testing : ① React testing library  
② Enzyme

3) Unit testing - Is the process of testing the smallest unit of our source code in isolation

- Self-contained, fast and easy to write

- Jest :- Javascript testing framework  
Built by Meta

- Beside plain javascript and React code it allows to test

- Babel
- TypeScript
- Node
- Angular
- Vue

- Support code coverage

- Used to write unit tests

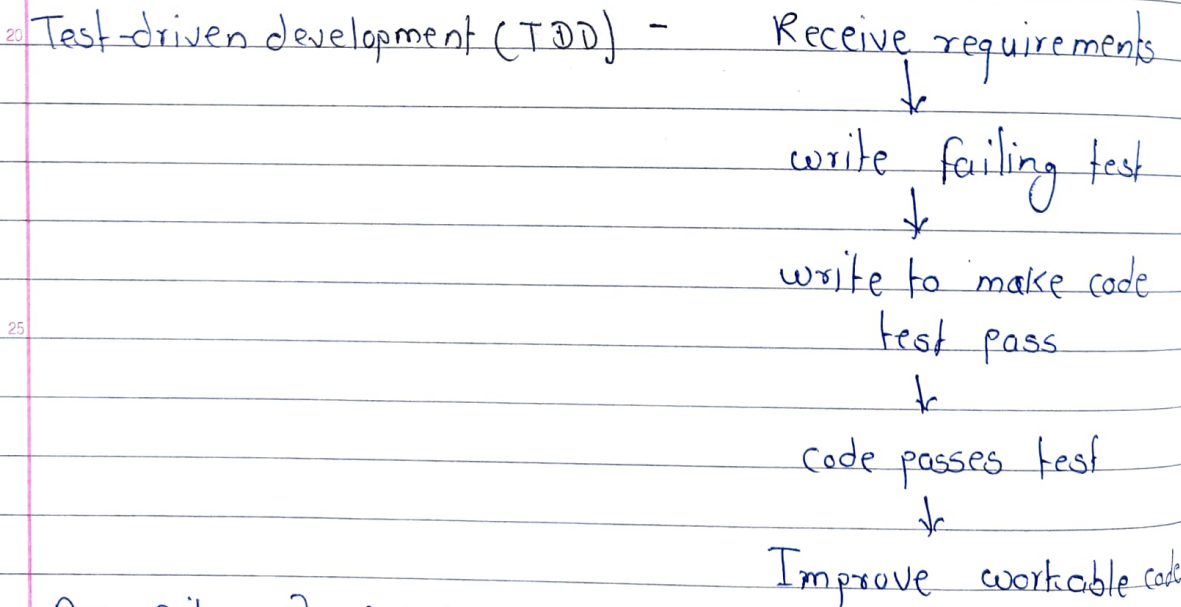
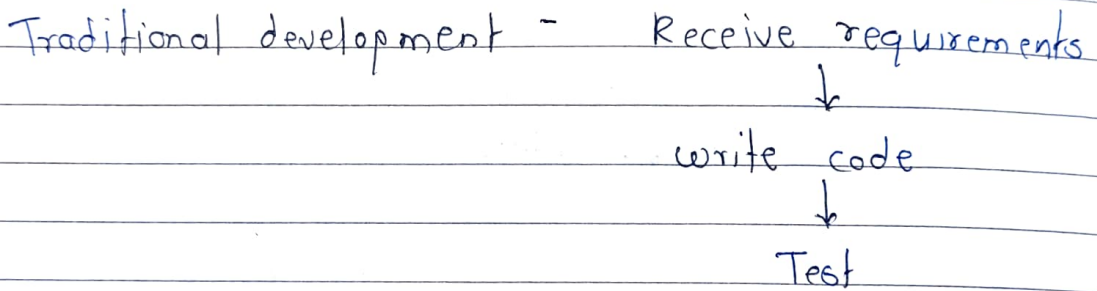
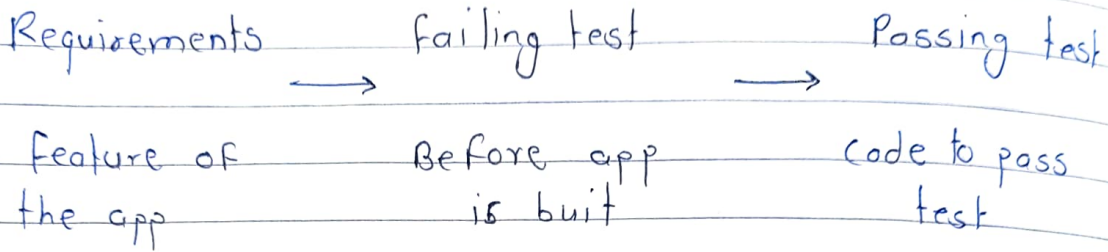
\* Mocking - Separating code from related dependencies during testing

- jest have in-built mocking function
- Facillitates asynchronous code
- Allows snapshot testing



\* Snapshot testing - Used by web developers to verify that there are no regression in the DOM.

\* TDD - Streamlined process of writing code that will satisfy some requirements



- Benefits -
- 1) minimizing regression
  - 2) provides proof
  - 3) Automated test
  - 4) Documentation