

Selenium Framework

Selenium framework is a code structure for making code maintenance simpler, and code readability better.

A framework involves breaking the entire code into smaller pieces of code, which test a particular functionality.

There are various types of frameworks available in the market, some are as:-

- Data Driven Testing Framework
- Keyword Driven Testing Framework
- Page Object Model Framework

Data Driven Testing

- Data Driven Testing is a framework where Data is separated from the actual program.
- Data is kept separately in excel file or CSV file.
- The data file is kept separately so that different data values can be passed.

Keyword-Driven Testing

- Keyword Driven Testing is a framework where each module is divided into small steps.
- All small steps are given keywords and step Id and these files are called in a program.
- It is also known as Table driven testing or action word based testing.
- It is an extension of Data Driven Testing.

Page Object Model Framework

- Page Object Model is a Framework where all objects are kept in a central repository.
- All objects are called in a separate class file.
- Page Object is a class that represents a web page and holds the functionality and members.
- Page Factory is a way to initialize the web elements you want to interact with.

Other than these frameworks there are two very important testing approaches

1. Test Driven Development
2. Behavior-Driven Development

Test Driven Development

- TDD is a process for writing and running tests.
- It provides high test coverage.
- Start by writing a test.
- Here the code is written to make test cases pass.
- Junit and TestNG are examples.

Behavior-Driven Development

- BDD is a process for writing and running tests.
- It is an extension of TDD.
- In a team, all team members belonging to different designations and domains can't understand the testing code. So to overcome this, BDD is introduced.
- There are three components of BDD
 - **Feature file:-**
 - A normal text file with extension .feature
 - This file is written in Gherkin language which is very close to English.
 - It is written using keywords like WHEN, THEN, AND.
 - The purpose of creating this file directly is that anyone from the team can read and understand the test script.
 - **Step definition:-**
 - It is a file that contains the method for each statement written in a feature file.
 - **Test Runner:-**
 - It is a class where step definition and feature files are called and the program is executed.

Advantage of using framework

- Reusability of code
- Maximum coverage
- Recovery is easy
- Low-cost maintenance
- Minimal manual intervention
- Easy Reporting
- Time-saving