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**What is a Framework*?***

A framework defines a set of rules or best practices which we can follow in a systematic way to achieve the desired results.

**2. Tell me some popular Test Automation Frameworks?**

* Modular Testing Framework
* Data Driven Testing Framework
* Keyword Driven Testing Framework
* Hybrid Testing Framework
* Behavior Driven Development Framework

**Linear Scripting Framework:**

* Linear Scripting Framework is a basic level test automation framework which is in the form of ‘Record and Playback’ in a linear fashion. This framework is also known as ‘Record and Playback’ framework. This type of framework is used to test small sized applications. In this type, creation, and execution of test script are done individually for each test case individually.
* Using this framework, we could generate test scripts (Record and playback) without planning much or consume much time but it has its own drawbacks such as lack of reusability and hard coding the data does not allow to run with multiple data sets.

### ****Modular Testing Framework:****

In the modular testing framework, testers create test scripts on module wise by breaking down the complete application under test into smaller, independent tests. In simple words, testers divide the application into multiple modules and create test scripts individually. These individual test scripts can be combined to make larger test scripts by using a master script to achieve required scenarios. This master script is used to invoke the individual modules to run end to end test scenarios. In this framework, testers write function libraries to use it when ever required. This is AKA modularity framework or module-based framework.

### ****Data-driven Framework:****

Data driven test automation framework is focused on separating the test scripts logic and the test data from each other. Allows us to create test automation scripts by passing different sets of test data. The test data set is kept in the external files or resources such as MS Excel Sheets, MS Access Tables, SQL Database, XML files etc., The test scripts connect to the external resources to get the test data. By using this framework we could easily make the test scripts work properly for different sets of test data. This framework significantly reduces the number of test scripts compared to module based framework.

This framework gives more test coverage with reusable tests and flexibility in execution of tests only when required and by changing only the input test data and reliable in terms of no impact on tests by changing the test data but it has its own drawbacks such as testers who work on this framework needs to have hands-on programming knowledge to develop test scripts

### ****Keyword Driven Testing Framework:****

It is also known as table-driven testing or action word based testing. In Keyword-driven testing, we use a table format to define keywords or action words for each function or method that we would execute. It performs automation test scripts based on the keywords specified in the excel sheet. By using this Framework, testers can work with keywords to develop any test automation script, testers with less programming knowledge would also be able to work on the test scripts. The logic to read keywords and call the required action mentioned in the external excel sheet is placed in the main class. Keyword-driven testing is similar to data-driven testing.

Even though to work on this framework doesn’t require much programming skills but the initial setup ( implement the framework) requires more expertise.

### ****Hybrid Driven Testing Framework:****

Hybrid Test automation framework is the combination of two or more frameworks mentioned above. It attempts to leverage the strengths and benefits of other frameworks for the particular test environment it manages. Most of the teams are building this hybrid driven framework in the current market.

### ****Behavior Driven Development Testing Framework:****

The purpose of this Behavior Driven Development framework is to create a platform which allows everyone (such as Business Analysts, Developers, Testers etc,) to participate actively. It requires increased collaboration between Development and Test Teams.  It doesn’t require the users to be acquainted with a programming language. We use non-technical, natural language to create test specifications. Some of the tools available in the market for Behavior Driven Development is [JBehave](http://jbehave.org/), [Cucumber](https://cucumber.io/), etc.,

**3. Why Framework?**

In a test automation project, we do perform different tasks by using different types of files. To organize and manage all the files and to finish all the tasks in a systematic approach we use a framework.

**5. What are the advantages of using Test Automation Framework?**

1. Saves time and money. Automation testing is faster in execution
2. Reusability of code. Create one time and execute multiple times with less or no maintenance
3. Easy reporting. It generates automatic reports after test execution
4. Easy for compatibility testing. It enables parallel execution in combination of different OS and browser environments
5. Low cost maintenance. It is cheaper compared to manual testing in a long run
6. Automated testing is more reliable
7. Automated testing is more powerful and versatile
8. It is mostly used for regression testing. Supports execution of repeated test cases
9. Minimal manual intervention. Test scripts can be run unattended
10. Maximum coverage. It helps to increase the test coverage

**13. What type of test cases do you pick up to automate?**

I focus on the test cases which should be executed in a repetitive manner such as regression test cases, smoke and sanity test cases

**14. What type of test cases you won’t pick up to automate?**

Before picking up the test cases to automate, I do check whether the application is stable or not. So based on this, I don’t pickup test cases when the AUT changes frequently and the test cases which I run rarely and run only one time. When I do usability and exploratory testing.

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We need to specify in and out of our Test Automation Framework such as programming **language** used, **Type of framework** used, Test Base Class (Initializing WebDriver, Implicit Waits), How we separate Element locators and tests (Page Objects, Page Factory), Utility functions file, Property files, TestNG annotations, How we parameterize tests using Excel files, How we capture error screenshots, Generating reports(Extent Reports), Emailing reports, Version Control System used and Continues Integration Tool used.

# How To Explain Selenium Test Automation Framework In The Interview

[**https://www.youtube.com/watch?v=sPqf4ujbc0g&feature=youtu.be**](https://www.youtube.com/watch?v=sPqf4ujbc0g&feature=youtu.be)

JAVA – Start from 136

* **Super Class:**The class whose features are inherited is known as super class(or a base class or a parent class).
* **Sub Class:** The class that inherits the other class is known as sub class(or a derived class, extended class, or child class). The subclass can add its own fields and methods in addition to the superclass fields and methods.
* **Reusability:**Inheritance supports the concept of “reusability”, i.e. when we want to create a new class and there is already a class that includes some of the code that we want, we can derive our new class from the existing class. By doing this, we are reusing the fields and methods of the existing class.

1. mvn archetype:generate -DgroupId=com.mycompany.app -DartifactId=my-app -DarchetypeArtifactId=maven-archetype-quickstart -DinteractiveMode=false