Framework

Framework is a set of guidelines that has to be followed to automate any web application. It is collection of reusable component which makes automation development, execution and maintenance easier and faster.

In my project I have used Hybrid Driven Framework,

Hybrid Driven Framework is a combination of two or more frame work. Since we used to fetch the data from external resources like property file, excel file etc we used Data driven framework also we maintained our framework in modular wise ie Modular driven framework and to avoid repetitive steps again and again we used reusable methods, Method driven framework.

Components:

- ➢ PoM.xml
- ➢ Driver/Suite File
- ➢ TestScripts
- ➢ Generic Utilities
- ➢ PoM pages
- ➢ Data
- ➢ Screenshots
- ➢ Reports

PoM.xml: Since we are using Maven Projects, PoM.xml file will be generated we need to add the dependencies like selenium dependency, apache poi dependency, testng dependency etc.

Generic Utilities: It consist of reusable class and methods that can be used to automate for any application.

- ➢ BaseClass: It consist of configuration methods to perform some pre and post condition actions like connection to database, launching the browser, login into the application, logout from the application, closing the browser, disconnect the database.
- ➢ Webdriver Utility: It consist of generic methods that is used to perform the actions on webelements.
- ➢ File Utility: It consist of generic methods that is used to fetch the data stored in properties file.
- ➢ Excel Utility: It consist of generic method that is used to fetch the data from excel file
- ➢ Java Utility: It consist of generic methods like to append random numbers and to get system date in required format.
- ➢ IPath Constants: It consist of all the common paths used to perform actions on web elements like url of database, username and password of database, paths of property file and excel file.
- ➢ Listener Implementation: It is a class which provide implementation to the abstract methods like OnTestSuccess, OnTestSkipped, OnTestFailure etc of ITest Listener interface.
- ➢ Retry Implementaion: It is a class which provide implementation for a IRetryAnalyser interface which is mainly used to retry or run the testscript which got failed due to synchronization and network issue.

PoM pages: PoM stands for Page object module, the number PoM pages will be equal to web pages present in the project. It is used to avoid from StaleElementReferenceException.

TestScripts: All the testscripts for the execution are present here. It is written with @Test annotation.
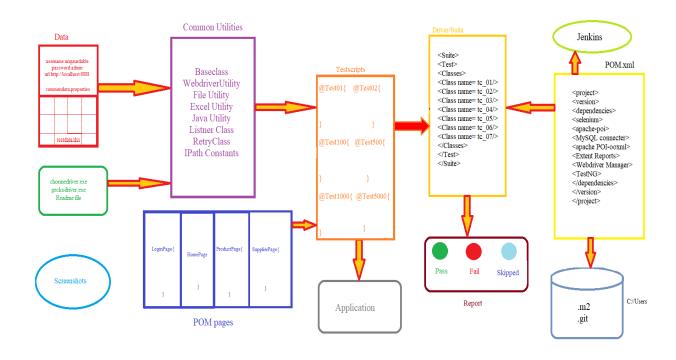
Data: This consist of common data and test data files.

Driver/Suite File: This is the xml file which is used to perform some of the executions like batch execution, group execution, parallel execution, cross browser execution etc.

Screenshot: This consist of screenshots of when the test case gets passed, skipped, failed etc. based on the implementation provided in the Listeners implementation class.

Reports: This consist of test reports when we the run the test scripts using testng suite file, which shows passed, failed and skipped testscripts. The reports get generated in the test-output folder.

The execution begins from the testscripts since it is extended to base class the configuration methods in the base class executes pre-conditions, @Test executes and finally the post condition methods gets executes, during the execution it takes the data from the excel file with the help of apache poi and perform action on application by calling necessary methods in PoM class. Similarly, it executes all the test scripts one after the other using batch runner (suite file). Since we are using Testng it generates the reports, showing passed, failed, skipped test cases. The screenshot will be captured since we have provided the implementation to the ITest Listeners.

Architecture of Framework

Advantages of Framework:

➢ Modular and easy to maintain
➢ Less coding can take care of more test cases
➢ One test case can be executed with multiple sets of data.

Exceptions Occurred during execution of the framework:

- TESTNG EXCEPTION : whenever two @test methods are depends on each other , but depended method is failed ,we get this exception
- NO SUCH SESSION EXCEPTION : whenever we declare close() method in the script , even though we declared in POM class, we get this exception
- NO ALERT PRESENT EXCEPTION : whenever there is no alert pop up is present, but we have written code for handling alert popup , we get this exception
- NO SUCH ELEMENT EXCEPTION : whenever the driver can't find the web element on respected webpage , we get this exception
- NULL POINTER EXCEPTION : Normally we get this exception during we fetching the test data from excel file, if the cell is empty.
- METHOD MATCHER EXCEPTION : whenever the data providing method is accepting 3 arguments , but the given arguments is given more or less than 3 we get this exception.
- ASSERT ERROR EXCEPTION : whenever the comparison of two values are failed by using Assert method, it throws this exception.
- STALE ELEMENT REFERENCE EXCEPTION : whenever web driver try to identify an element , element was available in GUI, but at time of performing an action on the elements element was not recognized due to page got refreshed or elements may become old or element not attached to page we get this exception.