**FRAMEWORK DOCUMENT**

**Framework Definition:-**

Framework is a well-organized structure that makes code maintenance easy and efficient and also increased code reusability, better code debugging, code readable, reduce code maintenance cost.

Framework consists of following basic components: - Here we can see framework different phases, which includes-

1. Framework Design phase

* Generic Utility
* Object Repository
* Data
* Resources

1. Framework Implementation phase

* Test scripts

1. Framework Execution phase

* Execution Reports
* XML file
* Screenshots

1. **Generic Utility: -**

It is a component in framework which consists of various classes and interfaces which has reusable methods for easy development of test scripts.

Generic Utility includes –

1. **Base Class:-** It’s a component of generic utility consists of basic configuration annotations of testNG used to perform common actions which is applicable for all projects.

Annotations are:

* @BeforeSuite: - It is used for database connection
* @BeforeTest: - It is used for Parallel or Cross browser execution
* @BeforeClass: - It is used to launch the Browser
* @BeforeMethod: - It is used for login action
* @Test: - In this we will write actual scripts
* @AfterMethod: - It is used for logout of application
* @AfterClass: - It is used to close the browser
* @AfterTest: - Close Parallel or Cross browser execution
* @AfterSuite: - It is used Close the Database connection

1. **ExcelFile Utility:-**

It is a class which basically consist of generic methods with respect to read and write into Excel. We can use these methods in our test scripts by creating an object for ExcelFileUtility class and use methods to reduce the size and also the time consumption.

1. **PropertyFile Utility:-**

It is a class which consists of a method, which is used to read the data from the property file. We use this method to get the data easily and modification n property file is easy.

1. **Java Utility:-**

It is a class which basically consist of generic methods with respect to Java. We can use these methods in our test scripts by creating an object for JavaUtils class and use methods to reduce the size and also the time consumption.

1. **WebDriver Utility:-**

It is a class which basically consist of generic methods with respect to Web driver. In this class we create methods for all the action done on web application, by using these methods on test scripts we can save the time and increase the performance.

1. **Database Utility:-**

It is a class which basically consist of generic methods with respect to Data Base. It consists of

* Connect to Database
* Close the Database
* Execute quarry and get the data

1. **IPath Constants:-**

It is an interface which consists of static variables, where we store the Common paths of the files such as excel file path, database path, property file path etc…

1. **Listener Implementation Class:-**

Listener is an advance concept in testng which will monitor the test script execution. This class is used to implement all the abstract methods of ITestListner Interface.

1. **Retry Analyzer Implementation:-**

Retry Analyzer is a feature of TestNG which help us to re-run the test script which fail due to Synchronization or Network issue. This class is used to implement all the abstract methods of IRetryListner Interface.

1. **Object Repository:-**

It is a storage which is used to store all the locators elements in one place and which can be reused in further.

Object repository basically consists of POM classes of each and every web page elements. And these POM classes consist of Business Libraries which are inbuilt methods of particular actions and which helps to optimize the test script.

1. **Data:-**

I. Common Data

Data which is common to all the test script is called as Common data.

Such as

* Browser Name
* URL
* User Name
* Password

These Common Data are stored in Property File, JSON file and xml file.

II. Test Data

Data which is specific to test script is called as Test data.

Such as  Test cases.

These test data are stored in Excel sheet and Database.

1. **Testscripts:-**

Test scripts are the component of the framework, which consist of classes based on the modules and we are going to write the scripts based on the test cases by using @Test annotations and run the scripts.

1. **.XML File:-**

I. POM.xml

In this we are going to add all the dependencies which are necessary to execute/run the program.

Such as

• Selenium dependency

• Testng dependency

• Mysql dependency

• Apache poi dependency

• WebDriver manager dependency

II. TESTNG.xml

We use these testng.xml file for batch execution, group execution, parallel execution, regression testing and Smoke testing.

