Session 48 - Selenium with Java | Hybrid Automation Framework Project | POM

Create a new Maven Project

Add required dependencies in po.xml (Please check links below)

https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-java
https://mvnrepository.com/artifact/org.apache.poi/poi
https://mvnrepository.com/artifact/org.apache.poi/poi-ooxml
https://mvnrepository.com/artifact/org.apache.logging.log4j/log4j-core
https://mvnrepository.com/artifact/org.apache.logging.log4j/log4j-api
https://mvnrepository.com/artifact/commons-io/commons-io
https://mvnrepository.com/artifact/org.apache.commons/commons-lang3
https://mvnrepository.com/artifact/org.testng/testng
https://mvnrepository.com/artifact/com.aventstack/extentreports

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Create Folder Structure

```
opencart
    src/test/java
        pageObjects
        testBase
        testCases
        utilities
    src/test/resources
    JRE System Library
    logs
    reports
    screenshots
    src
    target
    testData
    pom.xml
    TestNG.xml
```

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Development of Hybrid Driven Framework

1) Test case: Account Registration

1.1: Create BasePage under "**pageObjects**" which includes only constructor. This will be invoked by every Page Object Class constructor (Re-usability).

1.2: Create Page Object Classes for HomePage, RegistrationPage under **pageObjects** package. (These classes extends from BasePage).

1.3: Create AccountRegistrationTest under "**testCases**"

1.4: Create BaseClass under **testBase** package and copy re-usable methods.

1.5: Create re-usable methods to generate random numbers and strings in BaseClass.

2) Adding logs to test case (log4j2)

2.1: Add **log4j2.xml** file under **src/test/resourses**.

2.2: Update BaseClass.

2.3: Add log statements to AccountRegistrationTest.

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3) Run Tests on Desired Browser/Cross Browser/Parallel

3.1: Create testng.xml file to Run Test Cases and parameterize browser name and OS to BaseClass →setup() method.

3.2: Update BaseClass →setup() method, launch browser based on conditions.

3.3: Maintain separate xml to run tests multiple browsers parallelly.

4) Read Common values from config.properties file.

4.1: Add config.properties file under **src/test/resoures**.

4.2: Update BaseClass →setup() method, add script to load config.properties file.

4.3: Replace hard coded values in Test Cases like url, username, password etc...

5) Login Test Case

5.1: Create and update page object classes. LoginPage, MyAccountPage - new classes HomePage - update by adding login link element

5.2: Create LoginTest

5.3: Add entry testng.xml

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– update by adding login link element

5.2: Create LoginTest

5.3: Add entry testng.xml

6) Data Driven Login Test

6.1: Prepare test data in Excel, place the excel file inside the **testData** folder.

6.2: Create ExcelUtility class under **utilities** package.

6.3: Update Page Object class MyAccountPage , add logout link element)

6.4 : Create DataProviders class in **utilities** package to maintain data providers for data driven tests.

6.5: Create LoginDataDrivenTest under **testCases** package.

6.6: Add an Entry in testng.xml file

7) Grouping Tests.

7.1: Add all test cases into specific group (sanity, regression , master etc.).

7.2: Also add BaseClass methods setup() & teardown() to all groups.

7.3: Create separate TestNG xml file(grouping.xml) to run groups and include groups which we

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8) Add Extent Reports to Project

8.1: Create ExtentReportUtility utility class under **utilities** package.

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8) Add Extent Reports to Project

8.1: Create ExtentReportUtility utility class under **utilities** package.

8.2: Add captureScreen() method in BaseClass

8.3: Add ExtentReportUtility (Listener class) entry in testng.xml file.

8.4: Make sure WebDriver is static in BaseClass, we refer same driver instance in

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8.3: Add ExtentReportUtility (Listener class) entry in testng.xml file.

8.4: Make sure WebDriver is *static* in BaseClass, we refer same driver instance in ExtentReportUtility.

9) Run Failed Tests.

test-output→testng-failed.xml

10) Run Tests on Selenium Grid

Grid Setup:

- Download selenium-server-4.15.0.jar and place it somewhere.
- Run below command in command prompt to start Selenium Grid

```
java -jar selenium-server-4.15.0.jar standalone
```

- URL to see sessions: http://localhost:4444/

10.1: Add **execution_env=local/remote** in config.properties file under resources folder.

10.2: Update setup() method in the BaseClass (capture execution environment from config.properties file then add required capabilities of OS & Browser in conditions).

java -jar selenium-server-4.15.0.jar standalone

- URL to see sessions: http://localhost:4444/

10.1: Add **execution_env=local/remote** in config.properties file under resources folder.

10.2: Update setup() method in the BaseClass (capture execution environment from config.properties file then add required capabilities of OS & Browser in conditions).

10.3: Run the tests from testing.xml

11) Run Tests using Maven pom.xml, Command Prompt & run.bat file.

12) Push the Code to Git & GitHub Repository

13) Run Tests using Jenkins.