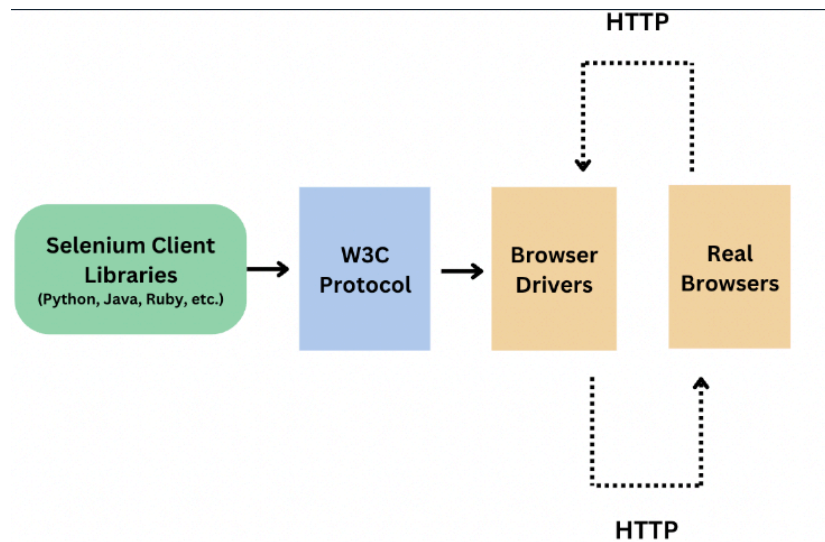


SELENIUM INTERVIEW QUESTION

Q1) Explain the selenium architecture.



I'm currently working on selenium four so in selenium four we have four major components.

- 1) Selenium Client Libraries (i.e. Java, Python, C#, Ruby)
- 2) WWW/W3C Protocol
- 3) Browser Driver
- 4) Real Browser

So the Selenium developers have developed libraries in order to support multiple languages. So with the help of selenium libraries, we can develop selenium test cases into the test script.

So the W3C IS a protocol that stands for the World Wide Web which can be used to maintain standards of request and response of the web. All the webdriver and web browser follow the W3C protocol.W3C protocol makes the easy communication between client and server applications.

Selenium uses drivers specific to each browser in order to establish a secure connection with the browser without revealing the internal logic of the browser's functionality.

Selenium WebDriver supports a diverse range of web browsers such as Firefox, Chrome, Internet Explorer, Opera, and many more. It also supports some of the non-conventional or rare browsers like HTMLUnit.

Q2)What are the advantages of Selenium?

- A) Selenium is open-source and free-of-cost software.
- B) Selenium supports multiple languages like Java, python, c#, Ruby, etc.
- C) Selenium supports multi-browser testing.

SELENIUM INTERVIEW QUESTION

- D) It has a good community of resources and a helping community over the internet.

Q3) What are the limitations of selenium?

- A) As we know selenium has some advantages then it also has some disadvantages like selenium can not automate the desktop application as well and we can not automate the web service because Selenium has web-related methods.
- B) To create a robust script in Selenium we should have knowledge of web driver programming languages.
- C) We also have to rely on external resources and libraries for performing tasks like Logging, testing framework (TestNG), for data driver (POI/Excel), etc.

Q4) What are the testing types supported by selenium webdriver?

Selenium webdriver can be used for performing automated functional and regression testing.

Q5) What is an x-Path?

X-path is a regular expression that can be used to locate the web element from the document. X-path is one of the locators which can be used by selenium.

Q6) What is the absolute xpath in selenium?

An absolute xpath is one of the ways to locate web elements from the HTML document. absolute xpath locates the web element from the beginning of the root node i.e. from the html tag. The main disadvantage of absolute xpath is if we make slight changes in the UI then the absolute xpath also needs to change & another one is absolute xpath is time-consuming and very difficult to write. Absolute xpath traverses from the HTML element and it will be declared by using (/) Absolute xpath is slower as compared to relative xpath.

Q7) What is the relative xpath?

A relative is also one of the way to locate the web element. Relative xpath is declared by using (//). Relative xpath we can start from anywhere from an html document. Relative xpath is faster as compared to absolute xpath. With the help of relative xpath, we can create robust xpath.

Q8) What are the ways to locate web elements in selenium?

Selenium uses locators to identify the web elements of the web pages that need to be interacted with. We can locate web elements by using multiple ways like

- A) Id
- B) Name

SELENIUM INTERVIEW QUESTION

- C) Class
- D) Xpath
- E) Partial Linked Text
- F) Link Text
- G) CSS Selector
- H) Tag Name

Q9) Explain to me a few ways to find the XPath by using the CSS selector.

- A) By using class name:- Any .className we can select all elements belonging to a particular class.

Example:- `.inputtext` it will select all elements having class inputtext.

- B) By using id:- By #id value we can select all the elements which belong to that class.

Example:- `#U_O_N` will select the elements having id U_O_N.

- c) By attribute value:- Using attribute value [attribute=value] we can select all the elements belonging to the particular attribute.

Example :- `[type='radio']`

Q10) What is the fundamental difference between css selector and xpath?

The fundamental difference between XPath and CSS selector is xpath we can traverse up in the document i.e. we move to the parent element whereas using CSS selector we can only move downwards in the document.

Q11) What is the difference between `driver.get("URL")` and `driver.navigate().to("URL")`?

Both of the commands are used to navigate to url passed as a parameter but the difference is `driver.get()` method waits until the webpage loaded properly and available to return the control whereas the `driver.navigate().to()` method does not wait for the webpage to load properly that's why we suggested to use the `driver.get()`.

Q12) What are the methods of webdriver?

- A) `Void get();`
- B) `WebElement findElement(String args)`
- C) `List<WebElement> findElements(String args)`
- D) `Void close()`
- E) `Void quite()`
- F) `String getTitle()`
- G) `String getCurrentUrl()`

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- H) String getTitle()
- I) Void switchTo()
- J) String getWindowHandle()
- K) Set<String> getWindowHandles()

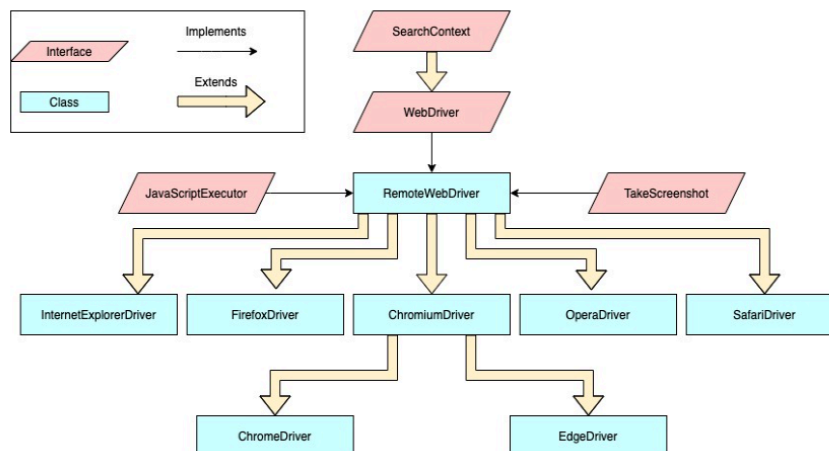
Q13) What are the methods of web elements?

- A) Void clear()
- B) String getText()
- C) Void sendKeys()
- D) String getAttribute(String arg)
- E) Point getLocation()
- F) Dimension getSize()
- G) Boolean isEnabled()
- H) Boolean isDisplayed()
- I) Boolean isSelected()

Q14) What are the interfaces present in selenium?

- A) WebDriver
- B) ITestListener
- C) IRetryAnalyzer
- D) Workbook
- E) TakeScreenShot
- F) JavaScriptExecutor
- G) Sheet
- H) SearchContext

Q14) Explain the class diagram of selenium.



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Q15) How to switch between multiple windows in Selenium?

Selenium has `driver.getWindowHandles()` methods which will return `set<String>` and `driver.switchTo().window("windowHandleId")` method to switch from one window to another window.

Example: -

```
1)
String id=driver.getWindowHandle();
driver.switchTo().window(id);
2)
Set<String> ids=driver.getWindowHandles();
for(String currentId:ids){
    driver.switchTo().window(CurrentId);
}
```

Q16) How Can we move to a particular frame?

To move to a particular frame we have to use `driver.switchTo()`.

Along with these methods we have to call `frame()` with parameter `frameId` or `frameIndex`.

For the locating of the frame from the document either we have to use an index value starting from the 0 'Zero' or id.

Example: -

```
driver.switchTo().frame(2);
```

Q17) Can we move backward and forward or refresh the browser using Selenium?

Yes, it's possible with the help of selenium because selenium is used for the web application only. So to go backward we have methods like `driver.navigate().back()` for forward we have `driver.navigate().forward()` and to refresh the browser we have `driver.navigate().refresh()` or we can use `driver.sendKeys(Keys.F5)` to refresh the web browser.

Q18) How can we find the value of different attributes like name, class, value of an element?

To Find out the attribute value of the web element, first of all we have to use `getAttribute()` of `WebElement` and by passing the attribute name as a parameter to which we have to fetch the value.

Example: -

```
String attributeValue=
driver.findElement(By.id("userName")).getAttribute("class");
```

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Q19) What is implicit and explicit wait in selenium?

Implicit and explicit wait both are the type wait which waits for a specific time while locating the web elements before throwing NoSuchElementException by default selenium tries to find out the webelement immediately when required without any wait so it's good practice to use implicit wait or explicit wait whenever required.

The implicit wait is applied to all the web elements of the current webdriver instance.

Syntax:-

```
driver.manage().timeOut().implicitWait(Duration,TimeOfSeconds(10));
```

Explicit wait is applied to a particular web element until the expected specific condition is met.

Syntax :- WebDriverWait wait=new WebDriverWait(driver,10);

```
wait.until(ExpectedConditions.elementToBeClickable(By.id("webElementId")));
```

Explicit wait conditions of Explicit wait:-

- 1) elemntToBeClickable(webElemnt)
- 2) visibilityOfElemntLocated(webElemnt)
- 3) attributeContains(webElemnt,String attribute,String value)
- 4) alertIsPresent()
- 5) titleContains(String title)
- 6) titleIs(String title)

Q20) What are the commonly occurring exceptions in selenium?

- | | |
|-----------------------------------|-----------------------------------|
| 1) NoSuchElementException | 8)NoSuchWindowException |
| 2) ElementNotVisibleException | 9)NoSuchFrameException. |
| 3) NoAlertPresentException | 10)InvalidSelectorException. |
| 4) TimeoutException | 11)ElementNotVisibleException. |
| 5) WebDriverException | 12)ElementNotSelectableException. |
| 6) StaleElementReferenceException | |
| 7) NullPointerException | |

Q21) How can we capture a screenshot in selenium?

Using the getScreenShotAs() method of TakeScreenShot(I).

```
String screenShotName=(LocalDateTime.now().toString().replace(":", "-"));
```

```
screenShotName=screenShotName.replace(".", "");
```

```
File source=webdriver.getScreenShotAs(Outrput.FILE);
```

```
File target=new File("./ScreenShots/Spectra"+name+".png");
```

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FileHandler.copy(source,target);

Q22) What is the use of Actions(C) class & what are the methods of Actions class?

Actions class is used to perform complex operations such as mouse Actions, keyboard key actions, and drag and drop actions. After using any method of the actions class we have to use perform() to execute that code o.w. It will not execute.

Actions actions=new Actions(WebDriverInstance);

Methods of actions class.

- 1) moveToElement(webElement);
- 2) contextClick(webElement);
- 3) doubleClick(webElement);
- 4) dragAndDrop(source,target);
- 5) perform()
- 6) build()
- 7) click();
- 8) clear();

Q23) What is the use of Select(C) class & what are the methods of Select class?

So the Select class is used to perform actions related to the drop down.

Select selectClass=new Select(WebElement);

Methods of Select(C) class

- 1) selectById(dropDownId)
- 2) selectByVisibleText(text)
- 3) selectByIndex(index)
- 4) isMultiple()
- 5) selectByValue(value)
- 6) getOptions()
- 7) getAllSelectedOptions()
- 8) getFirstSelectedOptions()
- 9) Same for deselection.

Q24) What is the use of Robot(C) class & what are the methods of Robot class?

Robot class is used to perform actions related to the key-board as well as robot class is used for file handling operations.

Robot robotClass=new Robot();

Methods of robot class :-

- 1) keyPress(KeyEvent.VK_TAB);
- 2) keyRelease(KeyEvent.VK_TAB);

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Q25) What is the use of JavaScriptExecutor(I) interface & what are the methods of javaScriptExecutor?

With the help of javaScriptExecutor we can perform actions like scrolling, handling ajax calls, modifying DOM elements and executing complex javascript based interactions that webdriver API cannot handle directly.

```
JavaScriptExecutor js=(JavaScriptExecutor) webDriver;
```

Methods of JavaScriptExecutor : -

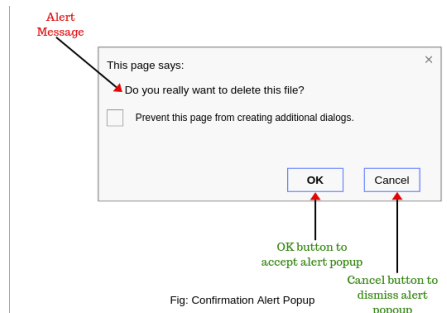
- 1) js.executeScript("window.scrollTo(0,500)");
- 2) js.executeScript("document.getElementById('user_email_login').value='rbc@xyz.com'");
- 3) js.executeScript("document.getElementById('user_password').value='password'");

Q26) How to handle alerts in selenium?

So alert is an interface which consists of two methods 1) accept() and 2) dismiss(). Alerts can not be inspectable. To handle the alerts we have to use switchTo().alert(). In Selenium we can handle 3 types of alerts.

- 1) Simple pop-up :- which only consists of Ok Button.
- 2) Confirmation Pop-up :- Which consists of two buttons like Ok and CANCEL.
- 3) Prompt pop-up :- which consists of a text box and Ok and CANCEL buttons.

```
webDriver.switchTo().alert().accept();  
webDriver.switchTo().alert().dismiss();  
webDriver.switchTo().alert().sendKeys("ABCD");
```



If webPage contains this type of pop and we have to click on the checkBox then we have to use the Robot class.

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Q27) What is POM (PAGE OBJECT MODEL)?

Page Object Model is a design pattern preferred by Google to maintain the web-element into the java classes. In Pom, for each web page of the application we have to create the POM pages. In that pom class we have to use one of the OOPS concept i.e. **Encapsulation**. While creating the object of that POM class we have to call `PageFactory.initMethhod()` which can be used to initialize the webElement. In Pom class we can store all the webElements of the webPage with private access modifiers and to access that webElement we will generate `getter()` methods. and to store the xpath of the webElement we have used `@FindBy` annotation.

Q28) What is pageFactory?

PageFactory is an implementation class of Page Object in selenium. It Provides the `@FindBy`, `@FindBy`s, `@FindAll` annotations to find the web-Elements and `PageFactory.initElements()` method is used to initialize the all web-elements defined by `@FindBy` annotation. `@FindAll` annotation internally uses an or operator whereas `@FindBy`s uses and operator.

Q29) What is an object repository?

An object repository is a centralized location of all the objects or we can say web-elements of the test script.

In selenium we can create an object repository using the page object model & page factory design pattern.

Q30) What is a data driven Framework or parameterized framework?

A data driven framework is one in which the test data is put in external files like .db, csv, xml, json, xlsx files separated from the test logic written in the test script files. The method will run for each set of test data values.

Q31) What is a hybrid framework in selenium?

A hybrid framework is a combination of two or more frameworks. Normally it is associated with the combination of data driven and keyword driven framework where both test data and test actions are kept in external files.

Q32) What is testNG(test next generation)?

TestNG is a testing framework that can be used to integrate with selenium or any other automation tool like **Cucumber**, **RestAssured** etc. So the TESTNG has lots of capabilities like assertion, advanced reporting, suite file creation, huge number of annotations, execution support, dependency between test methods, grouping, data driven etc.

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Q33) What are the advantages of TESTNG?

- 1) TestNg Provides assertions like HardAssert and SoftAssert.
- 2) TestNg Provides the parallel execution of the test methods.
- 3) We can define dependency between two different test methods.
- 4) We can assign priority between test methods.
- 5) We are able to create multiple suite files as per our requirement.
- 6) With the help of TestNg we can perform DataDriven testing with the help of @DataProvider annotation.
- 7) It Supports the parameterize test method using @Parameter annotation.
- 8) TestNg Provides the reports in simple readable format.
- 9) With the help of testNg We can execute only failed test cases again & again.

Q34) Why do we go for data driven testing?

We should go for the data driven framework so the first reason is the same test case we are not able to execute with the same data multiple times.

Second reason will be that we can execute the same test case with different data.

So with the help of data driven testing it will add the value for regression testing, and the test script will run for the end-to-end workflow for multiple data sets.

Q35) What is the properties file and how to read the data from the properties file?

So the properties file is the external resource which can be used to store the common data related the application like database server username, password or common data related to the test data like URL, File Path , UserName, Password, ScreenShot file path, Implicit wait, explicit wait etc. Properties file stores the data in key value pairs.

Program to read the data from properties file :-

```
File file=new File("Path of the file");
Properties prop=new Properties();
prop.load(file);
System.out.println("Value of the key is "+prop.getProperty("keyName"));
```

Program to write the data from the existing properties file :-

```
File file=new File("./src/main/java/p.properties");
FileInputStream fin=new FileInputStream(file);
Properties p=new Properties();
p.load(fin);
```

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```
System.out.println(p.getProperty("A"));
p.put("B","b");
FileOutputStream fout=new FileOutputStream(file);
p.store(fout,"DATA STORED");
fout.close();
```

Q36) Write a java program to read the data from excel file and what is the use of excel file?

So the excel file is used as external resources but the excel sheet stores the data related to the test script. So in excel sheet majority of the time we store the data in text format.

Program to read the data from .xlsx file :-

```
File file=new File("./Path of the file");
FileInputStream fin=new FileInputStream(file);
WorkBook workbook=WorkBookFactory.create(fin);
Sheet sheet=workbook.getSheet("SheetName");
Int rowCount=sheet.getPhysicalNumberOfRow();
Int columnCount=sheet.getRow(0).getPhysicalNumberOfCell();
```

```
String[][] data=new String[rowCount][columnCount];
```

Q37) Write a java program to write the data to the excel file.

Program to Write the data to the .xlsx file :-

```
File file =new File("./Path Of the file");
FileInputStream fin=new FileInputStream(file);
Workbook workbook=WorkbookFactory.create(fin);
Sheet sheet=workbook.getSheet("sheetName");
Row row=sheet.getRow();
Cell cell=row.createCell(cellNumber);
cell.setCellType(CellType.String);
cell.setCellValue(cellValue);
FileOutputStream fout=new FileOutputStream(file);
workbook.write(fout);
Fout.close();
workbook.close();
```

Q38) Write a java program to read the data from a JSON file.

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First We have to add extra dependency to perform operations on json file i.e.(JSON SIMPLE)

```
JSONParser jsonParser=new JSONParser();
Object obj=jsonParser.parse(new FileReader("./path of the file"));
JSONObject jsonObject=(JSONObject) obj;
System.out.println("OBJECT IS "+jsonObject);
System.out.println("Single key value is "+jsonObject.get("keyName"));
```

Q39) What are the methods of ITestListener?

- 1) onStart() :- given method will execute in a specific test context.
- 2) onFinish() :- It can be used for cleanup activities or summarizing the test results.
- 3) onTestStart() :- This method is invoked each time a test method is about to be invoked.
- 4) onTestSkipped() :- This method is called when a test method is skipped.
- 5) OnTestFailure() :- This method is invoked when a test method fails.
- 6) onTestSuccess() :- This method is called when a test method successfully completes.

Q40) What is staleElementReferenceException in selenium?

StaleElementReferenceException is a runtime exception which occurs if we are performing operations on the webElement.

So for example when we store the webElement into the webElement reference its going store webElement along with the webElement address.

So if you refresh the browser without performing any operation on the webElement then we will get staleElementReferenceException. Bcs webElement is the same but that webElement address has been changed.

To avoid the StaleElementReferenceException we can use the @FindBy annotation.

Q41) Write a java program to advanced reporting using ExtentReporter.

To use the ExtentReporter first of all we have to add extent report dependency and create an advanced report we have use 3 classes 1)ExtentSparkReporter 2) ExtentReport 3) ExtentTest

Program :-

```
Public static ExtentSparkReporter sparkReporter;
Public static ExtentReport report;
Public static ExtentTest test;
@BeforeClass
```

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```
Public void launchApplication(){
    sparkReporter=new ExptentSparkreporter("path/.html file name");
    sparkReporter.config.setDocumentTitle("Document Title");
    sparkReporter.config.setReporterName("reporter name ")

    report=new ExtentReport();
    report.attachReporter(sparkReporter);

}

@Test
Public void test(ITestResult result){
    test=extentReports.createTest("EXECUTION STARTED");
    Reporter.log("STARTED "+result.getName(),true);
    test.log(Status.PASS, "EXECUTION STARTED"+result.getName());
}

@AfterClass
Public void tearUpApplication(){
    sparkReporter.flush();
}
```

Q42) What are the annotations present in the TestNG?

- 1) @BeforeSuite :- Basically used for the data-base Connectivity
- 2) @BeforeClass :- Used for the launch application
- 3) @BeforeTest :- login
- 4) @BeforeMtehod :- Login
- 5) @Test :- For test script execution
- 6) @AfterMethod :- Logout
- 7) @AfterTest :- Logout
- 8) @AfterClass :- Tear up application
- 9) @AfterSuite :- Close db connectivity
- 10) @Listener
- 11) @FindBy
- 12) @FindBys
- 13) @FindAll
- 14) @Parameter
- 15) @DataProvider

Q43) What is the difference between @BeforeTest and @BeforeMethod in TestNg?

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@BeforeMethod :- is used to execute a method that should be executed before each test method within a class.

@BeforeTest :- Is used to execute only once belonging to the same <Test> tag in the suite file.

@BeforeMethod :- Will execute before each test method.

@BeforeTest :- Execute once before all the test methods in the <Test> tag.

Q44) How to perform parallel execution in TestNG?

We can perform parallel execution by providing parallel=true or parallel='classes' in <test> tag in suite file.

`<test thread-count=3 name='test' parallel=true>`

Or

`<test thread-count=3 name='test' parallel='classes'>`

Q45) How to perform cross-browser testing using TestNg?

With the help of @parameter annotation we are able to perform cross-browser testing.

```
@Parameter("bName")
@BeforeClass
Public void launchApp(String bname){
    /*
        Code
    */
}
```

In suite file :-

```
<test thread-count=2 name="test1" parallel=true>
<parameter name="bName" value="Chrome">
<classes>
    <class>
    </class>
</classes>
</test>
```

```
<test thread-count=2 name="test2" parallel=true>
```

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```
<paramter name="bName" value="Edge">
<classes>
    <class>
    </class>
</classes>
</test>
```

Q4.6) How to check that the test case is actually failed or not using TestNg?

Because of slow internet speed there may be chances that some of the test cases failed. To check whether the test cases are actually failed we have IRetryAnalyzer in testNg which contains the retry() method.

```
Public class RetryImplementation implements IRetryAnalyzer{
```

```
    Private int retyCount=0;
```

```
    Private static final int maxCount=3;
```

```
    Public boolean retry(ITestResult result){
```

```
        if(!result.isSuccess() && retryCount<3){
```

```
            retryCount++;
```

```
            Return true;
```

```
        }
```

```
        Return false;
```

```
    }
```

```
}
```

Q4.7) Explain the basic git bash commands you have used?

- 1) **Git config -- global user.name "username"** :- given command is used to set username globally.
- 2) **Git config -- global user.email "userEmailId"** :- given command is used to set emailId globally.
- 3) **Git config -- list** :- given command is used to display the configuration list.
- 4) **Git init** :- command is used to initialize the new git repository in a local directory.
- 5) **Git add fileName** :- the given command is used to add a particular file into the local repository.
- 6) **Git add --all** :- the given command is used to add all the files into the local repository.

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- 7) **Git status** :- it's a handy command which is used to quickly see what's happening in your local repository and to keep track of your changes as you work on your project.
- 8) **Git commit -m "commit message"** :- git commit initialize the commit process and -m this flag indicates that the following text should be treated as the commit message.
- 9) **Git log** :- is a command to display the commit history of your git repository.
- 10) **Git remote add origin REPOURL** :- the given git command is used to add remote/global repository to your local repository.
- 11) **Git remote -v** :- allows us to quickly check the remote/global repository which is connected to your local repository.
- 12) **Git push -u origin master** :- this command is used to push the committed files from the local repository to remote repo.
-u :- indicates the set up-stream
Origin :- so this is the name of the remote repository
Master :- is the branch.
- 13) **Git switch branchName OR git checkout branchName** :- is used to switch between the branches.
- 14) **Git clone "RepositoryName"** :- is used to download the project from the git repository to your local repository.
- 15) **Git pull "RepositoryName"** :- if the project has any updated code then only pull requests will work o.w. U will get an "already up to date" warning message.
- 16) **Git checkout -b "branch name"** :- is used to create and shift control to branch.
- 17) **Git branch** :- to display branchName

Q48) How do we know that the drop down is a single element dropdown or multiple element dropdown?

So in the select class we have isMultiple() which will help us to check whether the dropdown is multiple selection or not. If the drop down allows us to select multiple values then the isMultiple() method will return true o.w. It will return in the fall.

```
WebElement multiSelectionDropDown=webdriver.findElement(By.id("multi"));
Select selectClassObject=new Select(multiSelectionDropDown);
Boolean result=selectClassObject.isMultiple();
if(result){
    System.out.println("DROP DOWN ALLOWS TO SELECT MULTIPLE VALUES")
}else{
    System.out.println("DROP DOWN DOES NOT ALLOWS TO SELECT MULTIPLE VALUES")
}
```


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}

Q49) What is assertion and what are the types of assertion available in TestNg?

So the assertion in testNg is used to verify whether certain conditions are true during the execution. They play a crucial role in automated testing by allowing us to validate the expected behavior of our application under test.

Hard Assert	Soft Assert
<ul style="list-style-type: none">When a hard assert fails it immediately stops the execution of the test method and marks it as failed.	<ul style="list-style-type: none">Even if soft assertion fails, test methods continue to execute.
<ul style="list-style-type: none">Hard assert are implemented using methods provided by the assert class.	<ul style="list-style-type: none">we need to call the <code>assertAll()</code> on the soft assert instance to mark the test case as fails if any of the soft assert have failed
<ul style="list-style-type: none">Hard assert is suitable if you want to stop the execution upon the first assertion failure and proceed to the next test example.	<ul style="list-style-type: none">Soft assert is useful when you want to gather multiple assertions within a single test method and gather all the information about all failures .
<ul style="list-style-type: none"><code>Assert.assertEquals(actualResult,expectedResult,"Message")</code>	<ul style="list-style-type: none"><code>SoftAssert sf=new SoftAssert(); sf.assertEquals(actualResult,expectedResult,"Message")</code>

Q50) Explain to me your framework structure used in your project.

So the framework is a well structure of reusable components where one driver or pom.xml file will take care of the execution without any manual intervention.

Framework is a collection of reusable components that makes automation development, execution and maintenance easier and faster. So in the current company we have used a hybrid framework which is a combination of data-driven and modular framework. To implement the framework we have used maven project handler which will give readymade project structure as well as to add external libraries we only need to add dependency in the pom.xml file.

Next in the pom.xml file we have added latest selenium dependency of version 4, then we have added testNG dependency for the extra annotation provided by the testNg, and then we have used OOXML dependency to read the data from the excel sheet, as well as we have added simple json dependency to read the data from the json file and

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for the advanced reporting we have added extent report dependency and for the project test script we have used jdk 17 which is stable version of java.

Then in the maven project we have created a base package which contains all the generic utility classes like database connection utility, launch application utility, take a screenshot, ITestListerner, File utility to fetch the data from external resources and some common methods for the unique data generation.

After that we have created one POM package for the object repository to store all the web-page element in pom classes which used the encapsulation concept OOPS as well as intiElement of pageFactory class to initialize the web-element and @FindBy or @findAll annotation for the webelement xpath storage.

Then we have used the properties file and excel sheet to store the data. So whatever the common data (URL, USERNAME, PASSWORD) we used to store it inside the .properties file and the test script data we used to store it inside the .xlsx file and to perform the operation on that excel file we have used OOXML dependency.

To add a test script in the framework we have first added multiple modules inside the framework then according to the module we have added the test script.

So with the help of testNg we used to create a .xml or we can say suite file so in the current project we have created a smoke suite file :- whenever we will get a new build very first thing we will do like we execute smoke suite.

Regression suite :- after smoke suite file execution we will execute the regression suite file.

Parallel distributed suite :- if we want results faster and easier then we will go for the parallel distributed suite.

Parallel cross browser suite :- It is like non-functionality testing we have to execute and every build at the end of the release.

Then after that we have an html report. After the execution of the smoke/regression suite file we will have an html report that will tell us how stable the application is as well as how many test cases got passed and failed.

Then we have a .M2 folder which is a hidden folder it will act like a local repository whenever we are adding any new dependency that global jar file will be stored inside the .M2 folder.

And lastly we have a .P2 folder which is also a hidden folder which is used to store all the plugins inside that folder.

Q51) What are the attributes of the @Test annotation in testng?

- 1) Priority :- Lower priorities will be run first.
- 2) Enables :- If set to false, this test method will not be executed. (Default value is true).
- 3) invocationCount :- The number of times this test method should be invoked.
- 4) DependsOnMethod :- The list of methods this method depends on.

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- 5) DependsOnGroups :- The list of groups this method depends on.
- 6) ThreadPoolsSize :- Number of threads to execute the test script.
- 7) timeOut :- The maximum number of milliseconds this test should take.

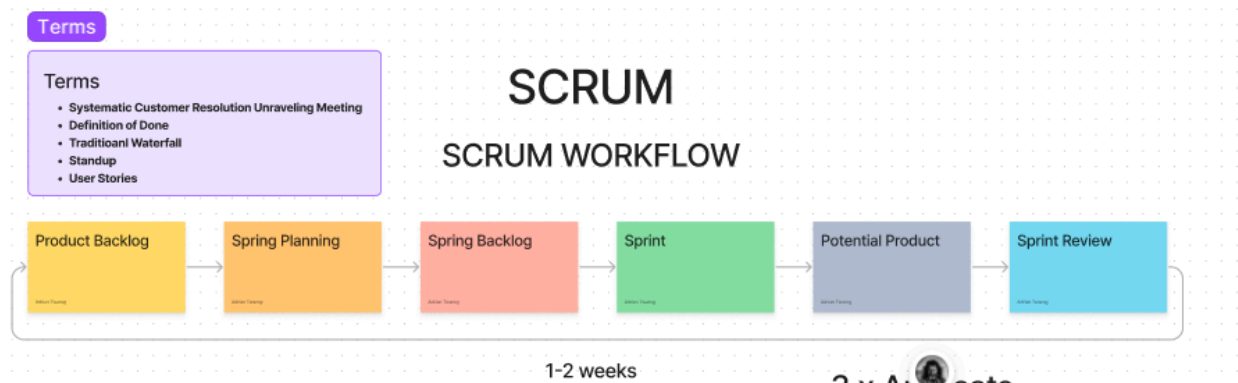
Q52) Explain some basic MAVEN commands?

- 1) mvn compile :- Compile the source code.
- 2) mvn clean :- removes the classes and resources which are compiled inside the target folder.
- 3) mvn test :- run the maven project.
- 4) mvn -Dtest=testClassName test :- is used to execute a particular test script.
- 5) mvn -Dtest=testClassName#testMethodName test :- is used to execute a particular test method of the script.
- 6) mvn -DpropertyName=propertyValue test :- is used to pass the attribute value to the test script.
- 7) System.getProperty("propertyName") :- is a method to fetch the value from the command line .

Q53) SCRUM.

SCRUM :- so the scrum is basically a management which will allow us to create and develop projects faster and scrum allows us to accept change at any time of the project development phase. Scrum is a lightweight Agile project management framework that can be used to manage iterative and incremental projects , where development & testing activity happens parallel.

SCRUM has few major components like



- 1) **Product Backlog :-** is a prioritized list containing the short description related to each feature. Its features contained inside the documentation like (Login, Registration etc.)

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- 2) **Sprint Planning** :- Sprint planning is an event in scrum that kicks off the sprint. The purpose of sprint planning is to define what can be delivered in the sprint and how that work will be achieved. Sprint planning is done in collaboration with the whole scrum team.
- 3) **Sprint Backlog** :- sprint backlog is a list of work items your team plans to complete during a project sprint. Is nothing but converting product backlog/features into the user stories.
- 4) **Sprint** :- it is a time duration to complete the work of sprint backlog
- 5) **Potential Product** :- s the value delivered for the customer via the Product Backlog Items completed during a Sprint.
- 6) **Sprint review**



Customer :- Stakeholder

BD :- Product owner (Defines project vision, requirements, and priority)

Team Leader :- Scrum master (Assist the development team and product owner)

User Story :- Requirement of the clients/ Features of the customer.

Task :- Scenarios which are implemented with the help of user story.

Development Scrum team

Development Scrum team will take care of development activity

Manual Testing Scrum Team

Manual Scrum team will take care manual testing activity

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Automation Scrum Team

Take care of handling automation scrum activity

DevOps Scrum Team

Take Care of Build management

SPRINT :- (fixed duration of time from define the requirement to design, test, and deliver the shippable final candidate)

User Story

It's a customer requirement to fulfill end user requirements. It is normally written from the perspective of an end-user.

Story Points

It's a define the effort & priority taken for each user stories, it helps us for estimation

In most cases a story point uses one of the following scales for sizing:

- 1,2,4,8,16
- X-Small, Small, Medium, Large, Extra-Large, XXL

Point Value	Approx. Days / Hours	
1 pt.	1 Day ~ 6 hours or less	Ideal Story Size
2 pts.	2 Days ~ 12 hours or less	
3 pts.	3 Days ~ 18 hours or less	Break into smaller Story prior to Sprint (whiteboard)
5 pts.	4 Days ~ 30 hours or less	
8 pts.	5 Days (week) ~ 48 hours or less	Break into smaller Story during Refinement
13 pts.	10 Days (2 weeks) ~ 78 hours or less	
20 pts.	15 Days (3 weeks) ~ 120 hours or less	Needs lots more Refinement
40 pts.	40 Days (6 weeks) ~ 240 hours or less	

Initial Point to Hour Estimate

Capacity

Capacity defines how much an individual can commit. Capacity is estimated in hours

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Velocity

A measure to weight the accepted work in an iteration or timebox

Burn Down Chart

A **burn down chart** shows how much work is remaining to be done in the project.

Sprint Planning :- (meeting handled by PO)

Where the entire scrum attends, here the product owner selects the list of userStory based on priority or story Point , then they will create SPRINT Backlog.

This is the meeting where we start taking multiple product backlog scopes and creating a more or less priority list of what we need to do.

Bug triage meeting

Talk to the development team to prioritize the defects .Talk to development team to priorities the defects

Sprint Review meetings

Scrum development team present a demonstration of a stable release candidate product . product owner declare which item is completed & not completed , product owner might add addition requirement based on stakeholder feedback

Retrospect meetings

Scrum team meet again after the Sprint review meeting and document the lesson learnt in previous

Release

What went good

What went wrong

Q54) What is selenium testing?

Selenium is a testing tool which can be used to automate web-application to verify their functionality is working good or not. It deals with the web-browsers, clicking on buttons, filling forms, and checking whether the functionality works correctly or not.

Q55) What test types are supported by selenium?

Functional testing: It verifies if each function of a software application performs in accordance with specific requirements.

Regression testing: It is nothing but a full or partial selection of the already executed test cases to be re-executed to ensure whether the existing functionalities work fine.

SELENIUM INTERVIEW QUESTION