SELENIUM

Advantage:-

1. Open Source
2. Supports multiple languages- Java, Python, C#..etc
3. Multiple OS can run selenium.- Windows, Linux, MacOS
4. Supports multiple browsers(Cross browser testing)- IE, Chrome,Firefox,Safari
5. Supports parallel testing.
6. You can integrate 3rd party tools with Selenium- testing, Maven, Jenkins,Cucmber…etc

Disadvantage:-

1. Desktop applications cannot be automated—MSOffice..etc.---AutoIT,Sikuli tools can be used.
2. Only supports Web-based applications.
3. Open-source so no dedicated support is there.—Forums are available
4. No reporting facility.—TestNg,Extent
5. Images based testing is not possible.—Can test to a certain level.

* Selenium is a set of tools/components
* Its components include:

1. Selenium IDE
2. Selenium RC
3. Selenium Webdriver
4. Selenium Grid

* Selenium1-It started with IDE, RC, Grid
* Selenium2-IDE, Webdriver, Grid
* Selenium3- Webdriver,Grid

IDE- Plugin with firefox browser, record and playback

RC- Server interacts with Browser and Test Cases

WebDriver- Directly interacts with browser.

Grid-Execution happens on multiple machines remotely.

* All web applications have HTML/DHTML/XML components which can be identified using different attributes.—client-side scripting languages
* Every component has a tag, then property and property values can be used for identification.
* Text Box: <input type=”text”, name=”username”>
* Property locators: Name, Id, linkText,cssSelector(Tag-Id,Tag-class,Tag-attribute,Tag-class-attribute,Innertext), xPath
* WebPage elements- textbox, radiobuttons,checkboxes,links,images,dropdowns,listbox,webtable,dragandrop,calendar(date pickers)
* CSS selector:

1. Tag/ID: <input id=”email”,class=”inputtext”>---By.cssSelector(“input#email”)
2. Tag/Class: <input id=”email”>---By.cssSelector(“input.inputtext”)
3. Tag/attribute: By.cssSelector(“input[id=email]”)
4. Tag/Class/Attribute: By.cssSelector(“input.inputtext[id=email]”)
5. Innertext: By.cssSelector(“font:contains(“Password”)”)

* XPath:

1. Xpath is basically an address of webelement
2. Firepath is a plugin for generating xpath
3. 2 types of xpath- Absolute(Complete address of the element) and Relative(Partial address of the element)
4. Relative xPath syntax: //\*[@attribute=’value’] or //tagname[@attribute=’value’]
5. OR operator: //\*[@attribute=’value’ OR @attribute=’value’]
6. AND operator: //\*[@attribute=’value’ AND @attribute=’value’]
7. Using Multiple attribute: //\*[@attribute1=’value1’][@attribute2=’value2’]
8. Xpath methods---Using Contains method: //tagname[contains(@attribute,’value’)]. Using Starts-with: //\*[starts-with(@name,’submit’)]

* Dropdowns: Select class is used

Select sel= new Select(driver.findElement(By.Id))

Select by index, select by value , select by visible text

getOptions(), getfirstSelctedOption()

* Broken links identification using HttpURLConnection
* Difference between findElement and findElements

findElement () will return only single WebElement and if that element is not located or we use some wrong selector then it will throw NoSuchElement exception.

findElements() will return List of WebElements – for this we need to give locator in such a way that it can find multiple elements and will return you list of web elements then using List we can iterate and perform our operation.