**SOFTWARE TESTING ASSIGNMENT**

**MODULE-5**

* What is Automation Testing?

Automation testing is the process of testing software and other tech products to ensure it meets strict requirements. Essentially, it's a test to double-check that the equipment or software does exactly what it was designed to do. It tests for bugs, defects, and any other issues that can arise with product development.

* Which Are The Browsers Supported By Selenium Ide?

Selenium is an open source automation testing package for web application application for different web browsers. Testing is done through selenium tool which is called as selenium testing. Selenium is not just a single tool, but a package of software tools, each providing services to different testing

needs of an organization. 3 components of selenium are: Selenium WebDriver, Selenium IDE, Selenium RC.

Browsers supported by selenium are: Google chrome, Internet explorer 7 onwards, Safari, Opera, Firefox.

Operating System supported by Selenium are Windows, Mac, Unix/linux.

* What are the benefits of Automation Testing?

##### ****1. Enhanced Results****

Since automation testing saves plenty of time even when complex and enormous systems are taken into consideration. This allows testing to be carried out repeatedly, delivering better and faster results with significantly lesser efforts and reduced time.

##### ****2.  Swifter Feedback system****

Automation testing is extremely crucial during the validation phase of any software project. It significantly enhances communication among the developers, designers, and product merchants, and provides space for the potential glitches to be rectified immediately thus enhancing the efficiency of the development team.

##### ****3.  Brand Enhancement****

 The effectiveness of testing is always dependent on the quality of test data that is being used. Testing is often performed on the copies of live databases as creating relevant and quality test data takes copious amounts of time. Automation solutions allow you to re-use your data time and again. This saves a lot of costs from project handling and project maintenance perspective.

The best aspect of automated testing is that it adds value to all the attached stakeholders. Automated testing systems not only enhance the system’s capability but also pave the way towards **[digital innovation and revolution](https://www.itproportal.com/features/how-automation-can-provide-a-foundation-for-digital-transformation/)**. It not only improves the brand name but also increases brand recall value, thus ensuring far greater customer retention. Due to automation testing, there are permanent fixes generated to issues long pertained as unsolvable.

##### ****4. Cost-effective****

Even though the initial investment needed for automation testing is on the higher end, it saves a lot of money for the company in the longer run. It is predominantly due to the reduction in the amount of time required to run the tests. It also contributes a much higher quality of work as there are no chances of neglect or human error. This decreases the necessity of fixing glitches in the post-release phase, thus saving huge amounts of project costs.

##### ****5. Efficiency Testing****

Testing is one of the most pivotal parts of the entire application development cycle. The most attractive part of the automation testing is that it can be left virtually unattended. This leaves a lot of room for the results to be monitored towards the end of the process. This allows for increasing the overall efficiency of the application.

* What are the advantages of Selenium?

**1.Open-Source:**

As mentioned earlier, the biggest strength of Selenium is that it is a freeware and a portable tool. It has no upfront direct costs involved. The tool can be freely downloaded and the community-based support for it is freely available.

**2.Language support:**

Selenium supports a range of languages, including Java, Perl, Python, C#, Ruby, Groovy, JavaScript, and more. It has its own script, but it is not limited by that language. It can work with various languages – whatever the developers/testers are comfortable with.

**3. Supports Operating Systems:**

Selenium can operate and support across multiple Operating Systems (OS) like Windows, Mac, Linux, and UNIX. With Selenium suite of solutions, a tailored testing suite can be created over any platform and then executed on another one. For instance, you can create test cases using Windows OS and run it with ease on a Linux–based system.

**4.Support across browsers:**

Selenium provides support across multiple browsers, namely, Internet Explorer, Chrome, Firefox, Opera, and Safari. This becomes highly resourceful while executing tests and testing it across various browsers simultaneously.

**5.Support for programming languages and framework**

Selenium integrates with programming languages and various frameworks. For instance, it can integrate with ANT or Maven type of framework for source code compilation. Further, it can integrate with the TestNG framework for testing applications and reporting purposes. It can integrate with Jenkins or Hudson for Continuous Integration (CI) and can even integrate with other open-source tools to support other features.

**6.Tests across devices**

Selenium Test Automation can be implemented for mobile web application automation on Android, iPhone, and Blackberry. This can help in generating necessary results and address issues on a continuous basis.

**7.Constant updates**

Selenium support is community–based, which enable constant updates and upgrades. These upgrades are readily available and do not require specific training. This makes Selenium resourceful and cost-effective as well.

**8.Loaded Selenium suites**

Selenium is not just a singular tool or utility, it a loaded package of various testing tools and so, is referred to as a Suite. Each tool is designed to cater to different testing needs and requirements of test environments.

Additionally, Selenium comes with capabilities to support Selenium IDE, Selenium Grid, and Selenium Remote Control (RC).

**9.Ease of implementation**

Selenium offers a user-friendly interface that helps create and execute tests easily and effectively. Its open-source features help users to script their own extensions that make them easy to develop, customized actions and even manipulate at an advanced level.

Tests run directly across browsers and the users can watch while the tests are being executed. Additionally, Selenium’s reporting capabilities are one of the reasons for choosing it, as it allows testers to extract the results and take follow-up actions.

**10.Reusability and Add-ons**

Selenium Test Automation framework uses scripts that can be tested directly across multiple browsers. Concurrently, it is possible to execute multiple tests with Selenium, as it covers almost all aspects of functional testing by implementing add-on tools that broaden the scope of testing.

* Why testers should opt for Selenium and not QTP?

QTP can be used to test web, desktop applications, and client-server But **Selenium is used to test only web applications**. QTP UFT supports only code written in VB script. On the other hand, Selenium supports many languages, like PHP, Java, Ruby, Python, etc.