**Module – 5**

**1 What is Automation Testing?**

Automation testing is a software testing technique that involves using automated tools and scripts to execute test cases and compare actual outcomes with expected outcomes. It aims to increase the efficiency and effectiveness of the testing process by reducing manual effort and human error.

**2 Which Are the Browsers Supported by Selenium Ide?**

**Google Chrome:** Selenium IDE extension is available for installation from the Chrome Web Store and can be used with the Google Chrome browser.

**Mozilla Firefox:** Selenium IDE extension is available for installation from the Mozilla Add-ons website and can be used with the Mozilla Firefox browser.

**3 What are the benefits of Automation Testing?**

**Increased Efficiency:** Automation testing allows for the execution of test cases much faster than manual testing. It reduces the time required for repetitive tasks such as regression testing, allowing testers to focus on more complex scenarios and exploratory testing.

**Reusability:** Automated test scripts can be reused across different versions of the software or for similar functionalities. Once created, test scripts can be easily maintained and executed repeatedly, saving time and effort in the long run.

**Consistency:** Automated tests produce consistent results every time they are executed, eliminating human error and ensuring reliability in the testing process. This consistency is particularly beneficial for regression testing, where the same tests need to be run repeatedly. **Improved Test Coverage:** Automation testing allows for the execution of a large number of test cases in a short amount of time. This enables testers to achieve broader test coverage and detect defects across different parts of the software more effectively.

**Early Detection of Defects:** Automation testing can be integrated into the continuous integration and continuous deployment (CI/CD) pipeline, allowing for early detection of defects as soon as new code is added to the system. This helps in identifying and fixing issues before they escalate into larger problems.

**Scalability:** Automation testing can easily scale up to accommodate larger test suites and more complex scenarios. It allows teams to handle growing testing requirements without significantly increasing the testing effort or resources.

**4 What are the advantages of Selenium?**

**Open Source:** Selenium is an open-source tool, which means it is freely available for anyone to use, modify, and distribute. This makes it cost-effective and accessible to both individuals and organizations.

**Cross-browser Compatibility:** Selenium supports multiple web browsers such as Chrome, Firefox, Safari, Edge, and more. This allows testers to conduct cross-browser testing and ensure that web applications work consistently across different browsers.

**Cross-platform Compatibility:** Selenium is compatible with various operating systems like Windows, macOS, Linux, and Unix. Test scripts written using Selenium can be executed on different platforms without modification, providing flexibility in testing environments.

**Support for Multiple Programming Languages:** Selenium supports multiple programming languages including Java, Python, C#, Ruby, and JavaScript. Testers can choose the language they are most comfortable with, enabling them to write test scripts in their preferred language.

**Rich Set of Features:** Selenium provides a rich set of features for automating web browser interactions, such as locating elements on web pages, interacting with web elements (e.g., clicking buttons, entering text), handling alerts and pop-ups, and more. This enables testers to automate various testing scenarios effectively.

**Integration with Testing Frameworks and Tools:** Selenium can be easily integrated with popular testing frameworks like TestNG, JUnit, NUnit, and PyTest, as well as build automation tools like Maven, Gradle, and Ant. It also integrates well with Continuous Integration (CI) tools like Jenkins, Bamboo, and TeamCity, enabling automated testing as part of the software development process.

**Scalability:** Selenium can scale to accommodate the testing needs of both small and large projects. It supports parallel execution of test cases, distributed testing using Selenium Grid, and cloud-based testing platforms, allowing for efficient testing of large test suites and reducing overall testing time.

**5 Why testers should opt for Selenium and not QTP?**

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| **Selenium** | **QTP** |
| It is a set of APIs. | It is a type of desktop application. |
| Selenium is an open-source tool hence no license required. | License is required. |
| Java, C#, Ruby, Python, Perl, PHP and JavaScript are the programming languages supported in selenium. | QTP supports VB Script. |
| It supports automation for web based applications | There is a support for test on both web and desktop based applications. |