Module 5

What is Automation Testing?

Automation testing is a software testing technique that performs using special automated testing software tools to executed a test case suit. The automation testing software can also enter test data into the system under test, compare expected and actual results and generate detailed test reports.

In automation testing successive development cycles will require execution of same test suite repeatedly. Using a test automation tools it is possible to record this test suite and replay it as required. The goal of automation is to reduce the number of test case to be run manually.

Which are the browsers supported by selenium Ide?

As of last update, selenium IDE, a tool primarily used for browser automation testing, supports multiple browsers. The supported browsers typically include:

1. GOOGLE CHROME
2. MOZILLA FIREFOX
3. MICROSOFT EDGE
4. SAFARI (ONLY ON MAC OS)

What are the benefits of automation testing?

Automation testing offers several benefits, including:

1. **FASTER EXECUTION:** automated tests can be executed much faster compare to manual testing, especially for repetitive test cases and regression testing. This leads to quicker feedback on the quality of the software.
2. **REUSABILITY:** test script can be reused across different releases and environment, saving time and efforts in the run. Once created, automated tests can be run as many times as needed without additional manual efforts.
3. **improved ACCURACY**: automated tests eliminate human errors and inconsistencies inherent in manual testing. They perform tests precisely as instructed, leading to more accurate results.
4. **INCREASED TEST COVERAGE:** automation allows for testing a broader range of scenarios, including edge cases and negative testing, which might be difficult to cover entire with manual testing due to time and resource constrain.
5. **COST-EFFECTIVNESS:** although there is an initial investment in setting up automation frameworks and script, in the long term, automation testing can significantly reduce testing costs by saving time, resource and manpower.
6. **ENHANCED RELIABILITY:** automation tests ensure consistent testing conditions, reducing the risk of false positive or negative. This reliability boosts confidence in the testing process and the quality of the software.
7. **EARLY BUG DETECTION:** automation testing can be integrated into the continuous integration/ continuous development pipelines, allowing for early detection of bugs as soon as new code is introduced. This facilitates faster bug fixing and prevent issues from escalating.
8. **SCALABILITY:** automated tests can be easily scaled to accommodates the growing complexity and size of software applications. Additional tests can be added and executed without significant overhead.
9. **DOCUMENTATION AND REPORTING:** automation testing frameworks often provide detailed test reports and logs, offering insight into test results, trends, and performance metrics. This documentation aids in tracking the progress of testing efforts and identifying area for improvement.

What are the advantages of selenium?

Selenium is a popular tool for automation web browsers, primarily used for testing web applications. Here are some of its advantages:

1. **CROSS-BROWSER COMPATIBILITY:** selenium supports multiple web browsers such as chrome, fire fox, safari, edge and more. This allows testers to verify that their web application work correctly across different browsers.
2. **PLATFORM INDEPEDENCE:** selenium can run on multiple operating system like windows, Linux and mac OS, making it versatile for team with diverse environments.
3. **MULTIPLE PROGEAMMING LANGUAGE SUPPORT:** selenium supports various programming language such as java, python, c#, ruby and java script enabling testers and developers to use their preferred language.
4. LARGE COMMUNITY AND RESOURCES: selenium has a vast community of users and contributors, which means extensive documentation, tutorials, and supports resource are available online. This makes it easier for users to get help and find solutions for their problems.
5. **INTEGERATION WITH OTHER TOOLS:** Selenium can be integrated with other testing frameworks, CI/CD tools, and third-party libraries, allowing for seamless automation and integration into existing development workflows.
6. **Powerful and flexible:** Selenium provides a range of features for web automation, including the ability to interact with web elements, simulate user actions like clicks and keystrokes, handle pop-ups and alerts, and perform data-driven testing.
7. **Open source:** Selenium is open-source software, meaning it's free to use and can be modified and extended according to specific project needs. This makes it cost-effective for organizations of all sizes.

Why tester should opt for selenium and not QTP?

Testers often choose Selenium over Quick Test Professional (QTP), now known as Micro Focus UFT (Unified Functional Testing), for several key reasons:

1. **Open-Source and Free**: Selenium is open-source, making it free to use, while QTP/UFT is a commercial tool that requires a license, which can be costly for organizations.
2. **Browser and Platform Support**: Selenium supports multiple browsers (Chrome, Firefox, Safari, Edge) and platforms (Windows, macOS, Linux). In contrast, QTP/UFT has limited browser support, mainly focusing on Internet Explorer and specific versions of Chrome or Firefox.
3. **Language Support**: Selenium supports multiple programming languages such as Java, Python, C#, Ruby, and JavaScript, allowing testers to use a language they are comfortable with. QTP/UFT primarily supports VBScript, which limits flexibility for testers preferring other languages.
4. **Community Support and Integration**: Being open-source, Selenium has a large and active community that contributes to updates, troubleshooting, and plugins. This makes it easy to find support and tools for integrating Selenium with CI/CD tools like Jenkins, Maven, and Docker. QTP/UFT has limited community support in comparison.
5. **Cross-Browser Testing**: Selenium excels at cross-browser testing, enabling automated tests across multiple browsers. QTP/UFT has more limited cross-browser capabilities, which may be restricted to specific versions.
6. **Flexibility and Customization**: Selenium provides greater flexibility to testers who want to customize their automation frameworks. QTP/UFT, while powerful, can be rigid and may not offer the same level of customization.