SELENIUM

What is Selenium

- About this and Upcoming Selenium.
- Selenium : Selenium is Open Source UI Automation Tool.
- Selenium is Used to Automate the Web-Application.
- Selenium is not used for Desk-Top Base Application Automation.
- Selenium was created in 2004 by an ThoughtWorks Engineer.
- Selenium Web-driver was introduced later in 2006.

- Components of Selenium:
- Selenium IDE
- Selenium RC
- Selenium WebDriver
- Selenium Grid

- Selenium IDE is Record and Play base Tool.
- Selenium IDE is basically a Browser Plugin, which is compatible with Mozilla Only.
- It's easy to learn, use and Install.
- User is not allowed to Put Conditions in IDE.

- Selenium RC stands for Remote Control.
- RC is the first automated web testing tool that allowed users to use a programming language they prefer.
- User is allowed to use **Java, C#, PHP, Perl, Ruby, and Python** with Selenium RC.

Selenium RC

Pros	Cons
Cross Browser and Platform	More Complicated the IDE
Perform Loops and Conditional Statements	Programming Knowledge is Must
Data Driven Testing is Possible	Selenium RC Server needs to be run to start the execution
Can Support Multiple Browsers and faster then IDE	Slow then WebDriver and Poor Support to Java Script

- Selenium WebDriver is better than Selenium IDE and RC.
- Selenium WebDriver is more stable than RC.
- WebDriver, unlike Selenium RC, does not rely on JavaScript for Automation. **It controls the browser by directly communicating with it.**
- Selenium WD supports multiple Programming language. **Java, C#, Python, PHP, Perl, Ruby**

- Selenium Grid is tool to use for Parallel Execution.
- Selenium Grid is compatible with RC and WD both.
- It works like an Execution Engine for Selenium Tests.
- Enables simultaneous running of tests in multiple browsers and environments.
- Utilizes the **hub-and-nodes** concept. The hub acts as a central source of Selenium commands to each node connected to it.

QTP(UFT) vs Selenium

Selenium	QTP
Open source, free to use, and free of charge.	Commercial.
Highly extensible	Limited add-ons
Can run tests across different browsers	Can only run tests in Firefox, Internet Explorer and Chrome
Can Support Multiple Browsers and faster then IDE	Slow then WebDriver and Poor Support to Java Script
Supports various operating systems	Can only be used in Windows
Can execute tests while the browser is minimized	Needs to have the application under test to be visible on the desktop
Can execute tests in parallel.	Can only execute in parallel but using Quality Center which is again a paid product.

QTP(UFT) vs Selenium

QTP	Selenium
Can test both web and desktop applications	Can only test web applications
Comes with a built-in object repository	Has no built-in object repository
Data-driven testing is easier to perform because **it has built-in global and local data tables**.	Data-driven testing is more cumbersome since you have to rely on the programming language.
Can Support Multiple Browsers and faster then IDE	Slow then WebDriver and Poor Support to Java Script
Can access controls within the browser(Address bar, Back and Forward buttons, etc.)	Cannot access elements outside of the web application under test.
Provides professional customer support	No official user support is being offered.
Parameterization Support is built	Parameterization can be done via programming but is difficult to implement.
Test Reports are generated automatically	No native support to generate test /bug reports.

Will see you in Next Lecture…

See you in next lecture …