**Introduction to Selenium**  
   
1) What is Selenium?  
  
2) History of the Selenium Project  
  
3) Selenium's Tools Suite  
  
    Selenium IDE  
    Selenium RC  
    Selenium WebDriver  
    Selenium Grid  
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**1) What is Selenium?**  
   
• Selenium is a suite of software tools to automate Web Browsers.  
  
• It is an Open source suite of tools mainly used for Functional and Regression Test Automation.  
  
• Selenium supports various Operating environments.  
  
MS Windows  
  
Linux  
  
Macintosh etc...  
  
• Selenium supports various Browsers.  
  
Mozilla Firefox  
  
IE  
  
Google Chrome  
  
Safari  
  
Opera etc...  
  
Note: Selenium IDE supports Mozilla Firefox only.  
  
• Selenium supports various programming environments to write programs (Test scripts)  
  
Java  
  
C#  
  
Python  
  
Perl  
  
Ruby  
  
PHP  
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**2) History of the Selenium Project**  
   
• Selenium first came to life in 2004.  
  
• In 2006, Selenium WebDriver was launched at Google.  
  
• In 2008, the whole Selenium team decided to merge Selenium WebDriver with Selenium RC in order to form more powerful tool called Selenium 2.0  
  
**Selenium 1**  
(Selenium IDE + Selenium RC + Selenium Grid)  
  
**Selenium 2**  
(Selenium IDE + Selenium RC + Selenium WebDriver + Selenium Grid)

RC is kept only for maintenance projects.

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**3) Selenium's Tools Suite**  
  
i) Selenium IDE   
   
It is a Firefox browser plug in, used to create and execute Test cases.

(Only on Firefox browser)  
  
**Selenium IDE Features:**  
   
• Create Test Cases, Test suites (We can Record test cases or type Test steps using element locators and Selenese commands)  
  
• Edit Test Cases  
  
• Execute Test cases, Test suites  
  
• Debug Test Cases.  
  
• Enhance Test Cases (Inserting comments etc, Verification points)   
  
• Export Test cases to other formats (java, ruby etc...)  
  
Note: selenium IDE Test case default format is .html  
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**Drawbacks of Selenium IDE**  
   
• It supports Mozilla Firefox browser only.  
  
• It doesn't support Programming logic/features to enhance Test cases.  
  
• It doesn't support Data Driven Testing.  
  
• It is not suitable for complex test case design.  
  
• No centralized maintenance of Objects/Elements ( no object repository hence no -like radio button, checkbox, dropdown buttons)  
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ii) Selenium RC (\* Out dated) – no need to learn   
  
iii) Selenium WebDriver  
   
• It is a Programming interface to create and execute Test cases.  
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Selenium IDE has IDE but doesn't have Programming interface  
  
Selenium WebDriver has Programming interface but doesn't have IDE  
  
UFT/QTP has both IDE as well as Programming interface  
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• Selenium WebDriver supports various programming environments to write programs.  
  
Java,  
  
C#  
  
Perl  
  
Python  
  
Ruby  
  
PHP  
  
• Using Element/Object locators/properties and Webdriver Methods we can create and execute Test cases.  
  
• Selenium Webdriver supports various browsers to create and execute test case/test script/test  
  
Note: Browser driver varies from one browser to another.  
  
• Selenium WebDriver supports various operating environments  
  
MS Windows  
  
Linux  
  
Macintosh etc...  
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**Drawback of Selenium WebDriver**  
   
• It doesn't generate detailed Test Reports.  
  
  
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iv) Selenium Grid  
   
• Selenium Grid is used to execute tests across multiple browsers, operating environments and machines in parallel.  
  
• Selenium Grid 2 supports Selenium RC Tests as well as Selenium WebDriver Tests.  
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**Focus on:**   
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i) Selenium WebDriver to create Test cases using element locators and Webdriver methods.  
  
ii) Java Programming to enhance test cases.  
  
iii) TestNG Framework to group test cases, execute test batches and generate detailed test reports.  
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