Web Test Automation with Selenium 2 (WebDriver)

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Sourcecode

https://github.
com/up1/Selenium_webdriver_java_template

Software Required

- Java 1.6+
- Apache Maven
- Eclipse IDE
- Firebug for Firefox browser

Installation

```
>git clone https://github.com/up1/Selenium_webdriver_java_template.git

>cd Selenium_webdriver_java_template

>mvn clean install
```

What is Selenium ?

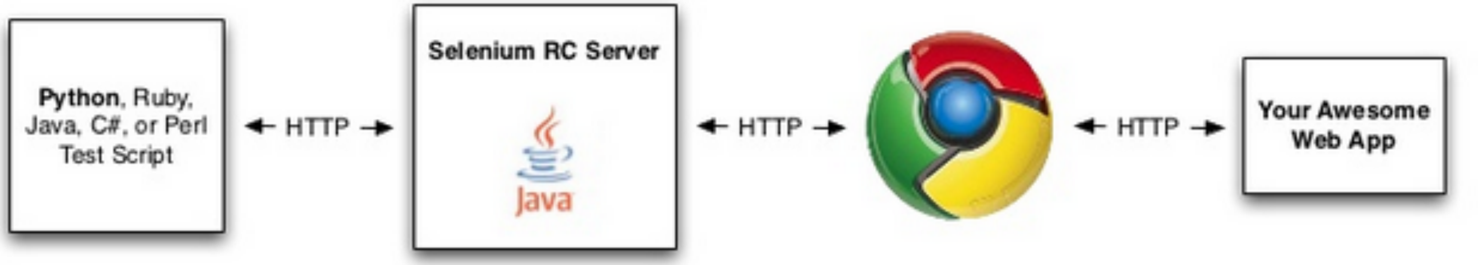
- Web testing tool
- JavaScript based
- Support multiple platforms
- Support multiple browsers
- Support many languages
- Opensource
- Original develop by Thoughtwork

Support many language

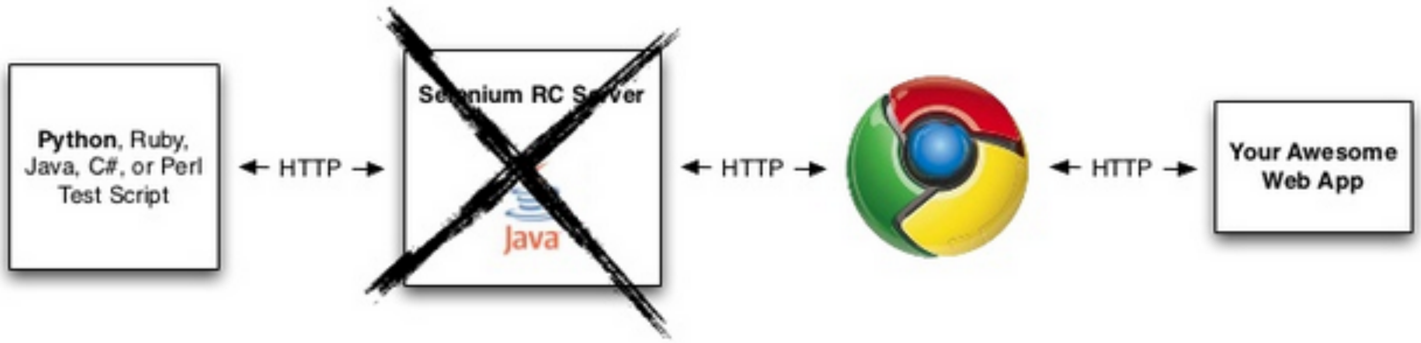
- Java
- Ruby
- PHP
- Python
- C#
- Perl
- JavaScript

What is Selenium ?

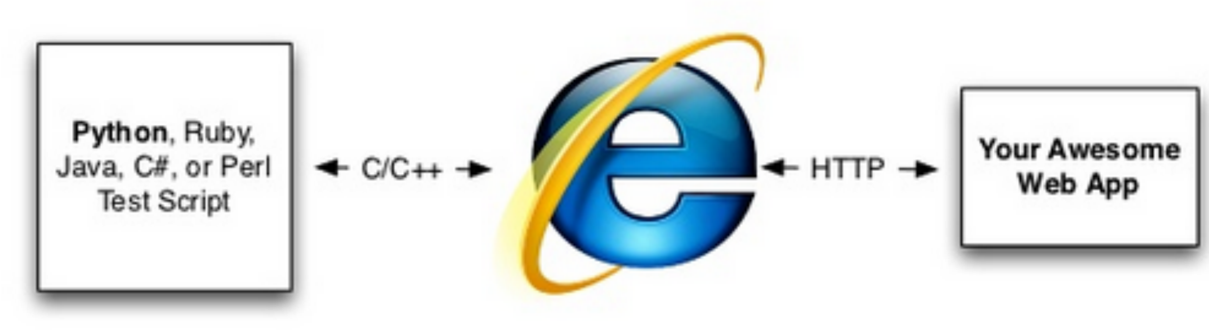
Selenium 1


Python, Ruby, Java, C#, or Perl Test Script
← HTTP →
Selenium RC Server
Java
← HTTP →
← HTTP →
Your Awesome Web App

Selenium 2 (WebDriver)



Selenium with IE



http://code.google.com/p/selenium/wiki/InternetExplorerDriver

Structure of Project :: JUnit

```
public class MyTest {
    @Before
    public void setup() {
    }

    ... test case ...

    @After
    public void tearDown() {
    }
}
```

Step

- Choose WebDriver
- Locate element
- Control flow with waiting time
- Data Driven testing
- Assert result
- Clear resources

Getting Start :: WebDriver

```
WebDriver driver = new ChromeDriver();
WebDriver driver = new FirefoxDriver();
WebDriver driver = new InternetExplorerDriver();
WebDriver driver = new SafariDriver();
WebDriver driver = new RemoteWebDriver();
WebDriver driver = new AndroidDriver();
WebDriver driver = new IPhoneDriver();
```

Locate Elements

driver.findByElement()
driver.findByElements()

Locate Elements

- id
- name
- tagName
- CSS Selector
- XPath

Control Test Flow

- Synchronize with implicit wait
- Synchronize with explicit wait

Implicit wait time

```
driver.manage().timeouts().implicitlyWait
                 ( 10,
                   TimeUnit.SECONDS
                 );
```

Explicit wait time

```
WebDriverWait wait = new WebDriverWait(driver, 10);
wait.until(ExpectedConditions.titleContains("selenium"));
```

Data Driven Testing

- JUnit 4 with Parameterized
- CSV
- Excel
- Database

JUnit 4 with Parameterized

```
@RunWith(value = Parameterized.class)
public class MyTest {

    @Parameters
    public static Collection testData() {
    }

}
```

Demo

Tips

Maximize window of browser

```
driver.manage().window().maximize();
```

Setting proxy server

```
String PROXY = "myproxy.com:8000";

Proxy proxy = new Proxy();
proxy.setHttpProxy(PROXY).setFtpProxy(PROXY).setSslProxy(PROXY);

DesiredCapabilities cap = new DesiredCapabilities();
cap.setCapability(CapabilityType.PROXY, proxy);

driver = new FirefoxDriver(cap);
```

Auto accept in Popup

```
driver.switchTo().alert().accept();
```

Download file

```
FirefoxProfile profile = new FirefoxProfile();

profile.setPreference( "browser.helperApps.neverAsk.saveToDisk",
"text/plain,application/pdf,application/zip,text/csv" );

profile.setPreference( "browser.download.dir",  "C:\\download\\");
profile.setPreference( "browser.download.lastDir" , "C:\\download\\");

profile.setPreference( "browser.download.folderList", 2);

driver = new FirefoxDriver(profile);
```

http://agilesoftwaretesting.com/how-to-download-files-to-computer-with-webdriver/

Upload file

```
WebElement fileUpload = driver.findElement(By.id("file"));

fileUpload.sendKeys("C:\\download\\data.txt");

driver.findElement(By.name("submit")).click();
```

Drag and Drop

```
Actions builder = new Actions(driver);

Action dragAndDrop = builder.clickAndHold(someElement)
   .moveToElement(otherElement)
   .release(otherElement)
   .build();

dragAndDrop.perform();
```