

# Cross Browser Testing using Selenium

## What is Cross Browser Testing?

**Cross Browser Testing** is a type of functional test to check that your web application works as expected in different browsers.



## Why do we need Cross Browser Testing?

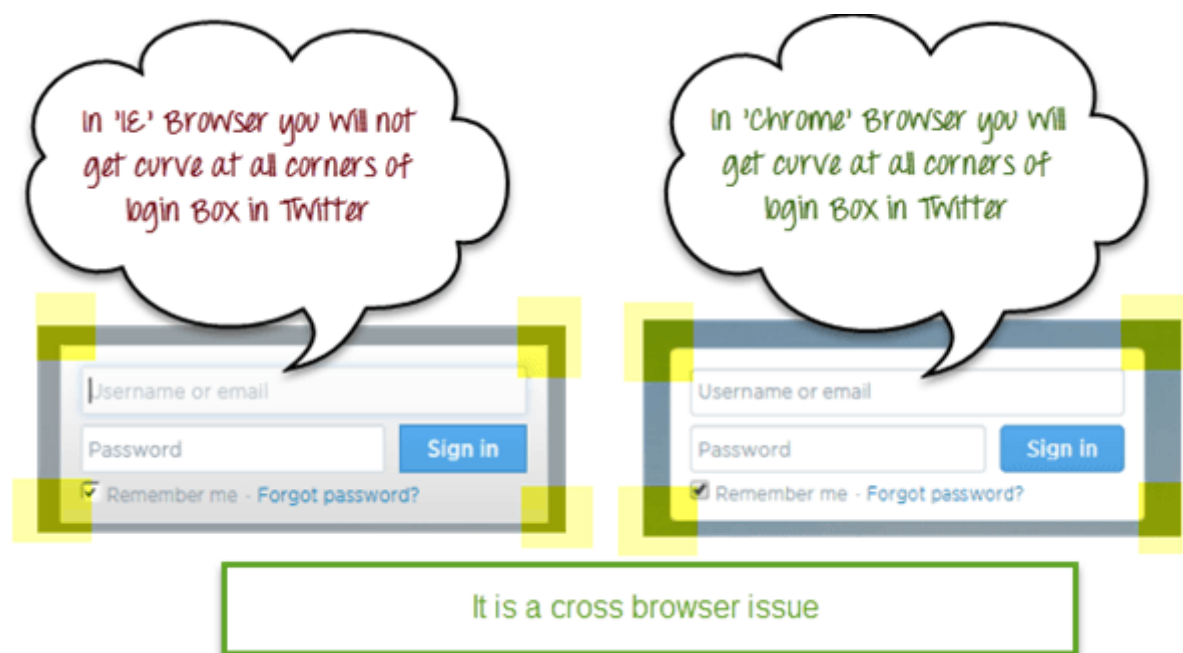
Web based applications are totally different from windows applications. A web application can be opened in any browser by the end user. For example some people prefer to open <http://twitter.com> in **Firefox**

## Selenium Ti

- 1) Introduction
- 2) Install IDE & Fir
- 3) Introduction ID
- 4) First Script
- 5) Locators
- 6) Enhancements
- 7) Intro WebDrive

**browser**, while other's can be using **Chrome browser** or **IE**.

In the diagram below you can observe that in **IE**, the login box of twitter is not showing curve at all corners but we are able to see it in chrome browser.



So we need to ensure that the web application will work as expected in all popular browsers, so that more people can access it and use it.

This motive can be fulfilled with Cross Browser Testing of the product.

### Reason Cross Browser Issues

1. Font size mismatch in different browsers.
2. JavaScript implementation can be different.
3. CSS,HTML validation difference can be there.

8) Install Webdriver

9) First WebDriver

10) Forms & Web

11) Links & Tables

12) Keyboard Mo

13) Selenium & Te

14) Selenium Grid

15) Parameterizat

16) Cross Browser

17) All About Exce

18) Creating Keyw  
Frameworks

19) Page Object M  
Factory

20) PDF, Emails ar  
Test Reports

21) Using Contain  
to Find Element

22) Core Extensio

23) Sessions, Para  
Dependency

24) Handling Date

25)Using Apache /

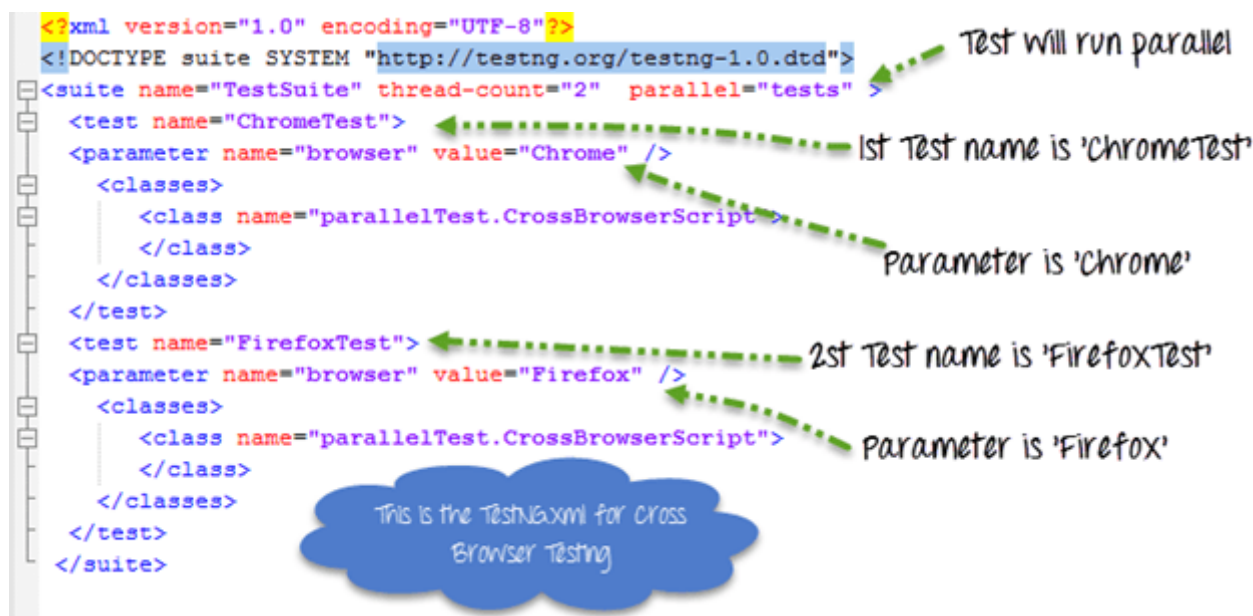
4. Some browser still not supporting HTML5.
5. Page alignment and div size.
6. Image orientation.
7. Browser incompatibility with OS. Etc.

## How to perform Cross Browser Testing

If we are using Selenium WebDriver, we can automate test cases using Internet Explorer, FireFox, Chrome, Safari browsers.

To execute test cases with different browsers in the same machine at same time we can integrate TestNG framework with Selenium WebDriver.

Your testing.xml will look like that,



This testing.xml will map with the test case which will look like that

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28) Selenium with & PhantomJS

29) Database Test Step by Step Guide

30) Using Robot A

31) Handling Iframe

32) Test Case Priority

33) Using Selenium

34) Implicit & Explicit Selenium

34) How to use Annotations in Selenium

35) TestNG: Executing suites

36) Desired Capabilities

37) Handling Cookies with WebDriver

38) Alert & Popups in Selenium

parameter will be pass from testNg.xml

```

@BeforeTest
@Parameters("browser")
public void setup(String browser) throws Exception{
    if(browser.equalsIgnoreCase("firefox")){
        driver = new FirefoxDriver();
    }
    else if(browser.equalsIgnoreCase("chrome")){
        System.setProperty("webdriver.chrome.driver", ".\\chromedriver.exe");
        driver = new ChromeDriver();
    }
}

```

check parameter value and create WebDriver according it

Here because the testing.xml has two Test tags ('ChromeTest','FirefoxTest'),this test case will execute two times for 2 different browsers.

First Test 'ChromeTest' will pass the value of parameter 'browser' as 'chrome' so ChromeDriver will be executed. This test case will run on Chrome browser.

Second Test 'FirefoxTest' will pass the value of parameter 'browser' as 'firefox' so FirefoxDriver will be executed. This test case will run on FireFox browser.

Complete Code:

### Guru99CrossBrowserScript.java

```

package parallelTest;

import java.util.concurrent.TimeUnit;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

```

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40) XPath in Selenium Guide

42) Handling Ajax WebDriver

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49) Using Selenium

44) Firefox Profile WebDriver

50) How to use int WebDriver

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46) Execute JavaScript using Selenium W

47) Using SoapUI

48) XSLT Report in

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52) Flash Testing v

```
import org.openqa.selenium.chrome.ChromeDriver;

import org.openqa.selenium.firefox.FirefoxDriver;

import org.testng.annotations.BeforeTest;

import org.testng.annotations.Parameters;

import org.testng.annotations.Test;

public class Guru99CrossBrowserScript {

    WebDriver driver;

    /**
     * This function will execute before each Test tag in testng.xml
     * @param browser
     * @throws Exception
     */

    @BeforeTest

    @Parameters("browser")

    public void setup(String browser) throws Exception{

        //Check if parameter passed from TestNG is 'firefox'

        if(browser.equalsIgnoreCase("firefox")){
```

```
//create firefox instance

    driver = new FirefoxDriver();

}

//Check if parameter passed as 'chrome'

else if(browser.equalsIgnoreCase("chrome")){

    //set path to chromedriver.exe You may need to download it from http://code.google.com/p/selenium/wiki/ChromeDriver

    System.setProperty("webdriver.chrome.driver","C:\\chromedriver.exe");

    //create chrome instance

    driver = new ChromeDriver();

}

else if(browser.equalsIgnoreCase("ie")){

    //set path to IEDriver.exe You may need to download it from

    // 32 bits http://selenium-release.storage.googleapis.com/2.42/IEDriverServer\_Win32\_2.42.0.zip

    // 64 bits http://selenium-release.storage.googleapis.com/2.42/IEDriverServer\_x64\_2.42.0.zip

    System.setProperty("webdriver.ie.driver","C:\\IEDriver.exe");

    //create chrome instance

    driver = new InternetExplorerDriver();
```

```
}

else{

    //If no browser passed throw exception

    throw new Exception("Browser is not correct");

}

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

}

@Test

public void testParameterWithXML() throws InterruptedException{

    driver.get("http://demo.guru99.com/V4/");

    //Find user name

    WebElement userName = driver.findElement(By.name("uid"));

    //Fill user name

    userName.sendKeys("guru99");

    //Find password

    WebElement password = driver.findElement(By.name("password"));
```

```
//Fill password

password.sendKeys("guru99");

}}
```

## testing.xml

```
<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd">

<suite name="TestSuite" thread-count="2" parallel="tests" >

<test name="ChromeTest">

<parameter name="browser" value="Chrome" />

<classes>

<class name="parallelTest.CrossBrowserScript">

</class>

</classes>

</test>

<test name="FirefoxTest">

<parameter name="browser" value="Firefox" />

<classes>

<class name="parallelTest.CrossBrowserScript">
```



```
</class>

</classes>

</test>

<test name="IETest">

<parameter name="browser" value="IE" />

<classes>

<class name="parallelTest.CrossBrowserScript">

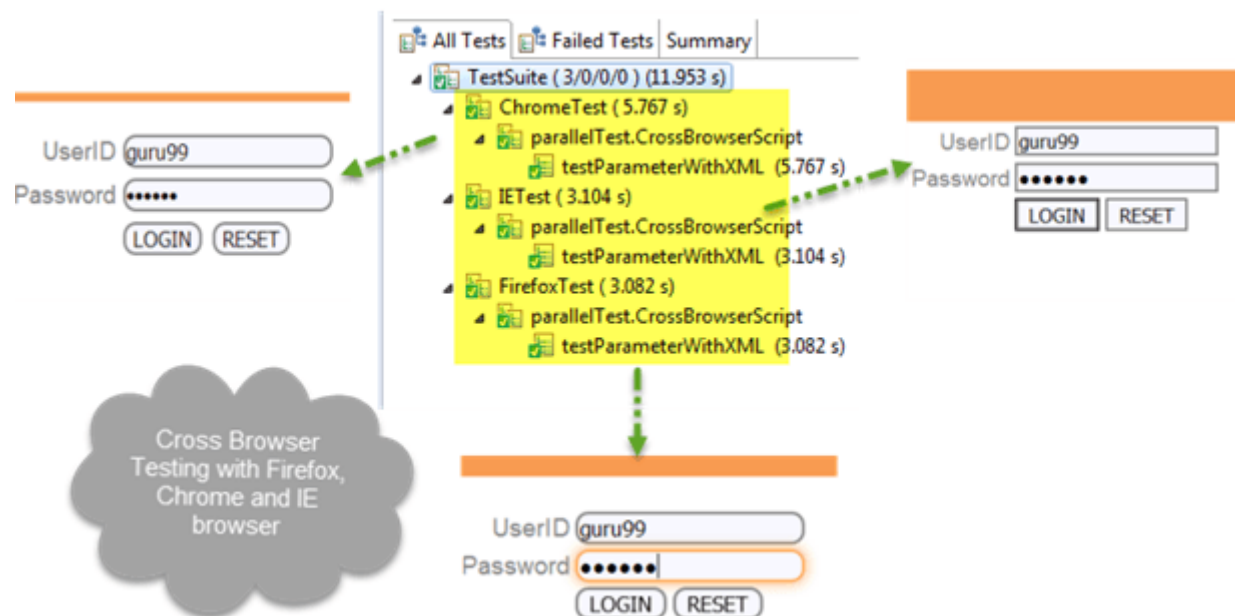
</class>

</classes>

</test>

</suite>
```

**NOTE:** To run the test , Right click on the **testing.xml** , Select Run As and Click TestNG



## Summary

1. Cross browser Testing is a technique to test web application with different web browsers.
2. Selenium can support different type of browsers for automation.
3. Selenium can be integrated with TestNG to perform Cross Browser Testing.
4. From parameters in testing.xml we can pass browser name and in test case we can create WebDriver reference accordingly.

Download the Selenium Project Files for the Demo in this Tutorial

< Prev

Next >