Lecture 17
Software Testing Tools

Software Testing Tools

- Functional and Regression test tools
- Performance test tools
- Mobile test tools
- Test Management tools
- Defect Management tools

Functional and Regression test tools

- Testing of software features or retesting a product around an area where a bug was fixed.
  - Selenium
  - UFT/QTP
  - RFT
  - SoapUI
  - SilkTest
  - Watir
  - TestComplete
  - Cucumber

Performance test tools

- The process of determining if the system meets the required specifications in terms of parameters such as speed, data transfer rate, bandwidth, throughput, efficiency or reliability.
  - LoadRunner
  - Jmeter
  - RPT
  - Silk Performer
  - WebLoad

Mobile test tools

- Appium
- Silk Mobile
- Calabash
- MonkeyTalk
- Robotium
- Selendroid
- UIAutomator
- Frank
- KIF

Defect Management tools

- Bugzilla
- IBM Rational ClarQuest
- Mantis/MantisBT
- BugHost

Selenium

What is Selenium?

- It is for automating web applications for testing purposes
  - creates robust, browser-based regression automation tests
  - scales and distributes scripts across many environments

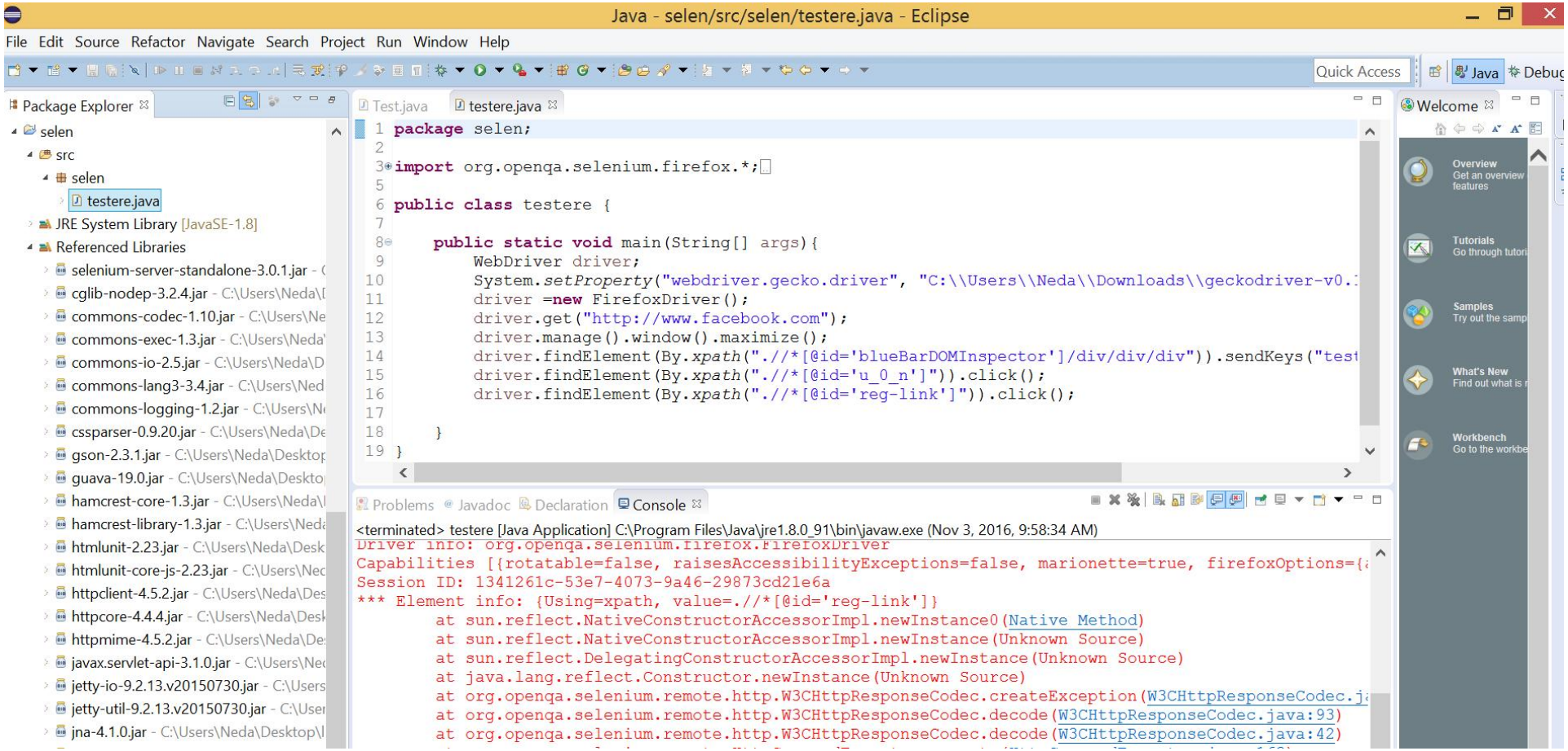
Selenium - Downloadable Link

- Go to http://www.seleniumhq.org/download/
- Download latest version
- Add Selenium jar files to your project
- Download geckodriver
  - For more information see “https://github.com/mozilla/geckodriver”

For demo I installed the following plugins as well :

- Firebug
- Fire path

Demo


Java - selen/src/selen/testere.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Java
Package Explorer
selen
src
selen
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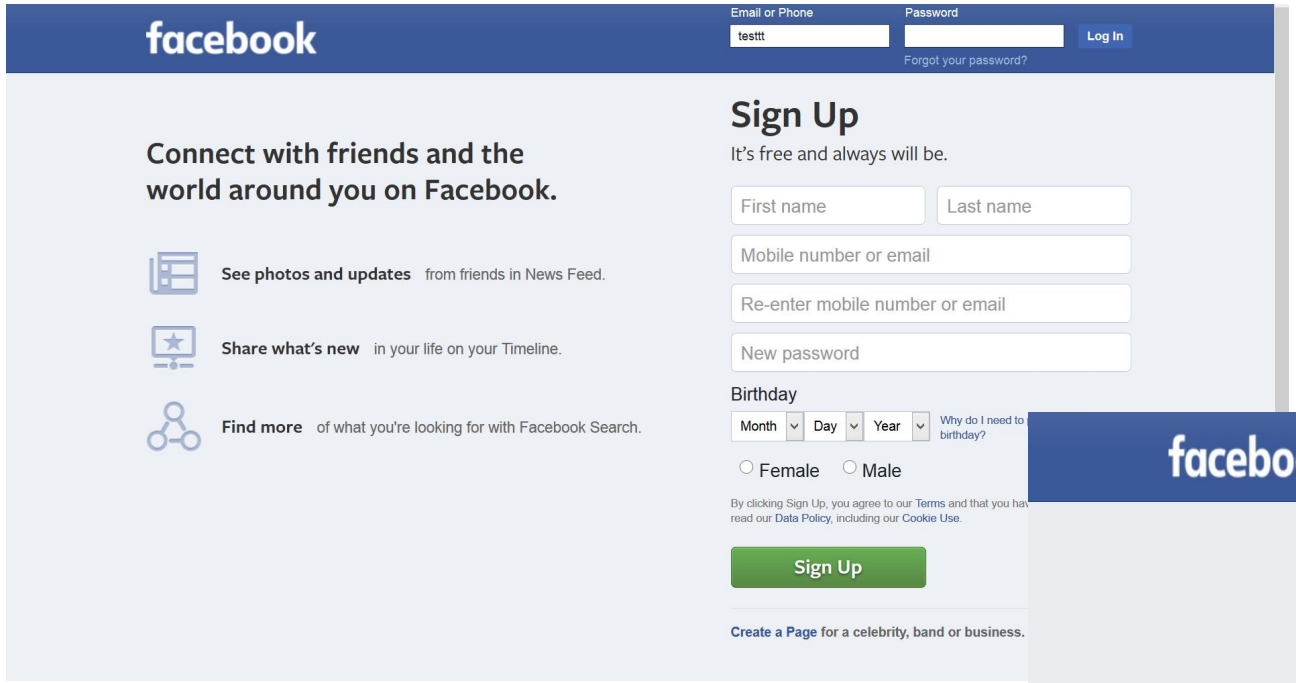
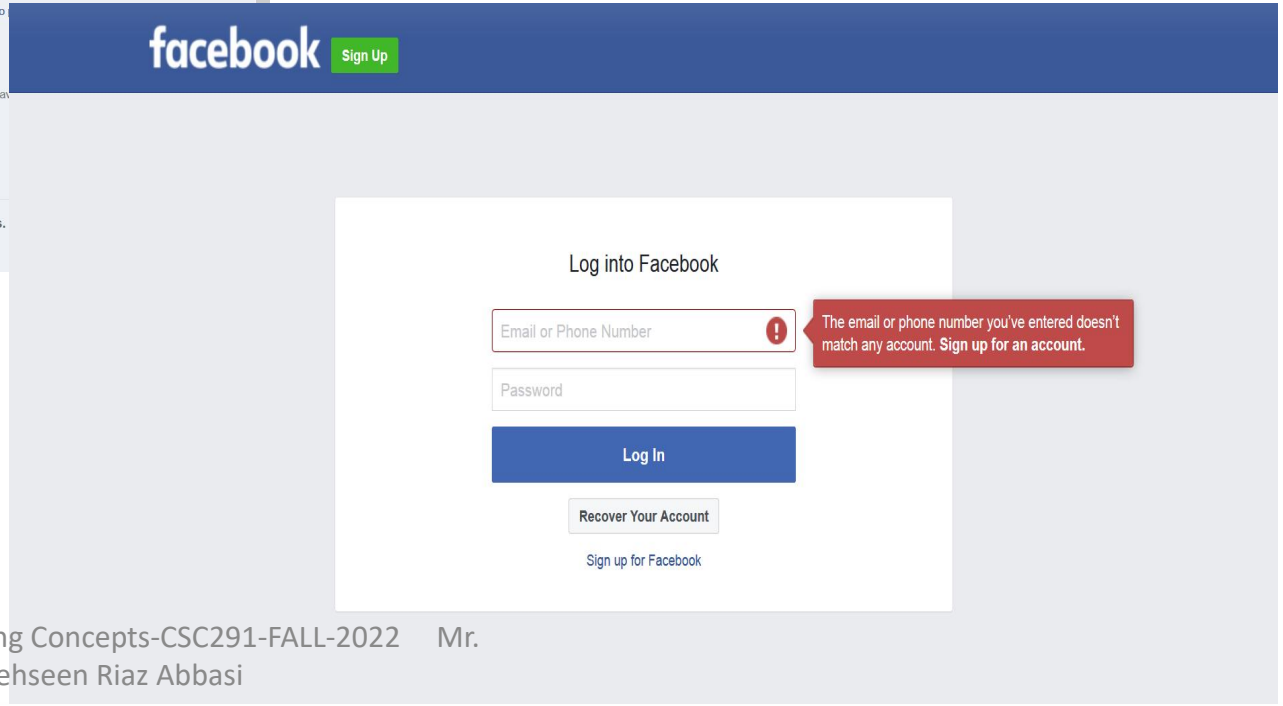
jetty-util-9.2.13.v20150730.jar - C:\Use
jna-4.1.0.jar - C:\Users\Neda\Desktop\
Test.java
testere.java
1 package selen;
2
3 import org.openqa.selenium.firefox.*;
5
6 public class testere {
7
8 public static void main(String[] args){
9 WebDriver driver;
10 System.setProperty("webdriver.gecko.driver", "C:\\Users\\Neda\\Downloads\\geckodriver-v0.
11 driver =new FirefoxDriver();
12 driver.get("http://www.facebook.com");
13 driver.manage().window().maximize();
14 driver.findElement(By.xpath(".//*[@id='blueBarDOMInspector']/div/div/div")).sendKeys("test
15 driver.findElement(By.xpath(".//*[@id='u_0_n']")).click();
16 driver.findElement(By.xpath(".//*[@id='reg-link']")).click();
17
18 }
19 }
Problems Javadoc Declaration Console
<terminated> testere [Java Application] C:\Program Files\Java\jre1.8.0_91\bin\javaw.exe (Nov 3, 2016, 9:58:34 AM)
Driver info: org.openqa.selenium.firefox.FirefoxDriver
Capabilities [{rotatable=false, raisesAccessibilityExceptions=false, marionette=true, firefoxOptions={
Session ID: 1341261c-53e7-4073-9a46-29873cd21e6a
*** Element info: {Using=xpath, value=.//*[@id='reg-link']}
at sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method)
at sun.reflect.NativeConstructorAccessorImpl.newInstance(Unknown Source)
at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(Unknown Source)
at java.lang.reflect.Constructor.newInstance(Unknown Source)
at org.openqa.selenium.remote.http.W3CHttpResponseCodec.createException(W3CHttpResponseCodec.j
at org.openqa.selenium.remote.http.W3CHttpResponseCodec.decode(W3CHttpResponseCodec.java:93)
at org.openqa.selenium.remote.http.W3CHttpResponseCodec.decode(W3CHttpResponseCodec.java:42)
Welcome
Overview
Get an overview
features
Tutorials
Go through tutori
Samples
Try out the samp
What's New
Find out what is
Workbench
Go to the workbe


facebook
Email or Phone
testtt
Password
Log In
Forgot your password?
Connect with friends and the world around you on Facebook.
See photos and updates from friends in News Feed.
Share what's new in your life on your Timeline.
Find more of what you're looking for with Facebook Search.
Sign Up
It's free and always will be.
First name
Last name
Mobile number or email
Re-enter mobile number or email
New password
Birthday
Month
Day
Year
Female
Male
Sign Up
Create a Page for a celebrity, band or business.


facebook
Sign Up
Log into Facebook
Email or Phone Number
The email or phone number you've entered doesn't match any account. Sign up for an account.
Password
Log In
Recover Your Account
Sign up for Facebook

- **As you saw in the demo:**
  - Writing and using a complete script which considers all possible scenarios, you are able to see if every part is works fine whenever a change is made into the software. Yes, that is possible by only one click and run the script!

References

- http://docs.seleniumhq.org/
- https://www.youtube.com/watch?v=juKRybHPMwE
- http://searchsoftwarequality.techtarget.com/

Automated Software Testing

Contents

- Introduction to Automated Software Testing
- Process of Automated Testing
- Advantages & Disadvantages
- Choosing Automation Tools

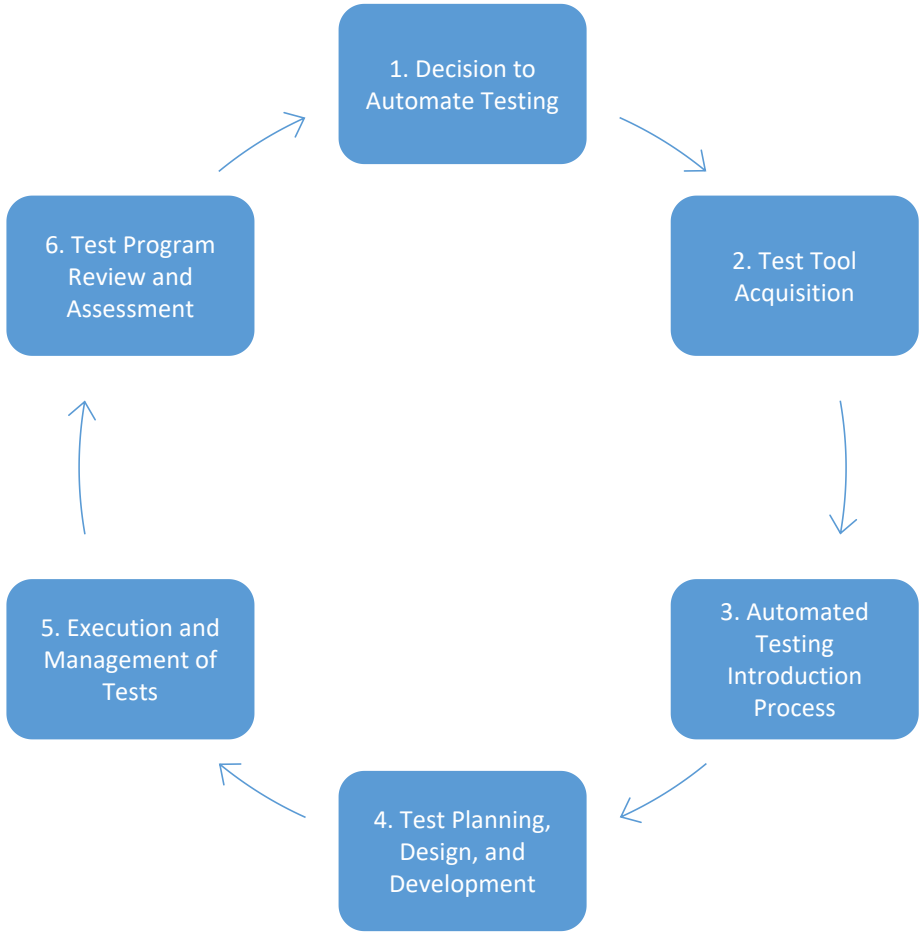
Introduction to automated software testing

- **"Software Testing is usually the part of the project which makes grown men weep"** [1]
- Ever-shrinking schedule and minimal resources
- It involves automating a manual process of testing

Definition of Automation

"Automation is the use of tools and strategies that reduce human involvement or interaction in unskilled, repetitive or redundant tasks"

The automated test lifecycle methodology [4]



Why automate?

- Verification and Validation of the requirements and organisation

Defects and Failures caused by misunderstood requirements or coding errors

- Compatibility of the Software

Advantages & Disadvantages of Automated Testing

Advantages

- Reliable: eliminating human error
- Reusable
- Better Quality Software
- Fast
- Cost Reduction

Disadvantages

- High investment is needed in the tools and training
- High man power requirement for test preparations
- A lot of testing areas left uncovered

Choosing Automation Tools

- Ease of integration
- Compatibility
- Performance
- Types of tests
- Maintainability
- Affordability

Summary

- Automate tests for ever-shrinking schedules and minimal resources
- Automated software testing lifecycle
- Advantages and disadvantages of automation
- Choosing automation tools

References

1. http://www.my-project-management-expert.com/software-application-testing.html
2. http://www.exforsys.com/tutorials/testing/automated-testing-advantages-disadvantages-and-guidelines.html
3. Software Quality Assurance - By Galin
4. Automated software testing: introduction, management, and performance - By Elfriede Dustin, Jeff Rashka, John Paul
5. http://www.informit.com/articles/article.aspx?p=21468

Thank
you