INTRODUCTION TO SELENIUM

1. History of Selenium

• In 2004 invented by Jason R. Huggins and team.
• Original name is JavaScript Functional Tester [JSFT]
• Open source browser based integration test framework built originally by Thought works.
• 100% JavaScript and HTML
• Web testing tool
• That supports testing Web 2.0 applications
• Supports for Cross-Browser Testing (ON Multiple Browsers)
• And multiple Operating Systems
• Cross browser – IE 6/7, Firefox .8+, Opera, and Safari 2.0+

2. What is Selenium?

• Acceptance testing tool for web-apps
• Tests run directly in browser
• Selenium can be deployed on Windows, Linux, and Macintosh.
• Implemented entirely using browser technologies -
 JavaScript
 DHTML
 Frames

3. Selenium Components

– Selenium IDE
Created by Shinya Kasatani of Japan
– Selenium RC
Created by Paul Hammant
– Selenium Grid
Developed by Patrick Lightbody

3.1 Selenium IDE

• The Selenium-IDE (Integrated Development Environment) is the tool you use to develop your Selenium test cases.
• It is Firefox plug-in

• Firefox extension which allows record/play testing paradigm
• Automates commands, but asserts must be entered by hand
• Creates the simplest possible Locator
• Based on Selenese

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1. **Install Selenium IDE & Write a test suite for different formats.**

   Version to be used
   (Selenium IDE Version 3.1.1 works with Firefox 56.0 and later)

   You need
   - Mozilla Firefox
   - Active Internet Connection
   - If you do not have Mozilla Firefox yet, you can download it **from http://www.mozilla.org/en-US/firefox/new.**

STEPS:

1. Launch **Mozilla Firefox** Browser.
2. Type URL https://www.seleniumhq.org/download/
   OR
   https://addons.mozilla.org/en-US/firefox/addon/selenium-ide/
3. Selenium IDE Add-ons page will get open then Click on Add to Firefox button
4. Firefox will show one popup saying do you want to allow Mozilla Firefox to install Selenium IDE Add-ons or not. **Click** on **Install** button.
5. Firefox will automatically install Selenium IDE software. After the installation is completed, a pop up window appears asking to re-start the Firefox. Click on the "Restart Now" button to reflect the Selenium IDE installation. Click on Restart Now button.
6. On clicking on the Restart Now button, Firefox will restart automatically. In case you missed the pop-up, simply close the Firefox and launch again.

7. Once the Firefox is booted and started again, we can see selenium IDE under the tools menu list. **Selenium IDE icon** will be displayed in the Firefox toolbar.
8. Click on **Selenium IDE icon to open Selenium IDE.**
   - Selenium IDE Works with all major versions, but we recommend to use 47.0.1 & above as they have better stability.
   - Selenium IDE is no longer compatible with Firefox 55 and above.

4 test cases for 4 websites

i. http://store.demoqa.com
ii. https://www.seleniumhq.org
iii. htttp://www.google.com
iv. htttp://www.yahoo.com
v. http://demo.guru99.com/test/newtours/

Step 1

- Launch Firefox and Selenium IDE.
- Type the value for our Base URL: http://demo.guru99.com/test/newtours/.
- Toggle the Record button on (if it is not yet toggled on by default).

Step 2

- In Firefox, navigate to http://demo.guru99.com/test/newtours/. Firefox should take you to the page similar to the one shown below.

Step 3

- Right-click on any blank space within the page, like on the Mercury Tours logo on the upper left corner. This will bring up the Selenium IDE context menu. Note: Do not click on any hyperlinked objects or images
- Select the "Show Available Commands" option.
- Then, select "assertTitle exact: Welcome: Mercury Tours." This is a command that makes sure that the page title is correct.

Step 4

- In the "User Name" text box of Mercury Tours, type an invalid username, "invalidUNN".
- In the "Password" text box, type an invalid password, "invalidPWD".

Step 5

- Click on the "Sign-In" button. Firefox should take you to this page.

Step 6

- Toggle the record button off to stop recording.

Step 7

- Now that we are done with our test script, we shall save it in a test case.

Step 8

- Choose your desired location, and then name the Test Case as "Invalid_login".
- Click the "Save" button.

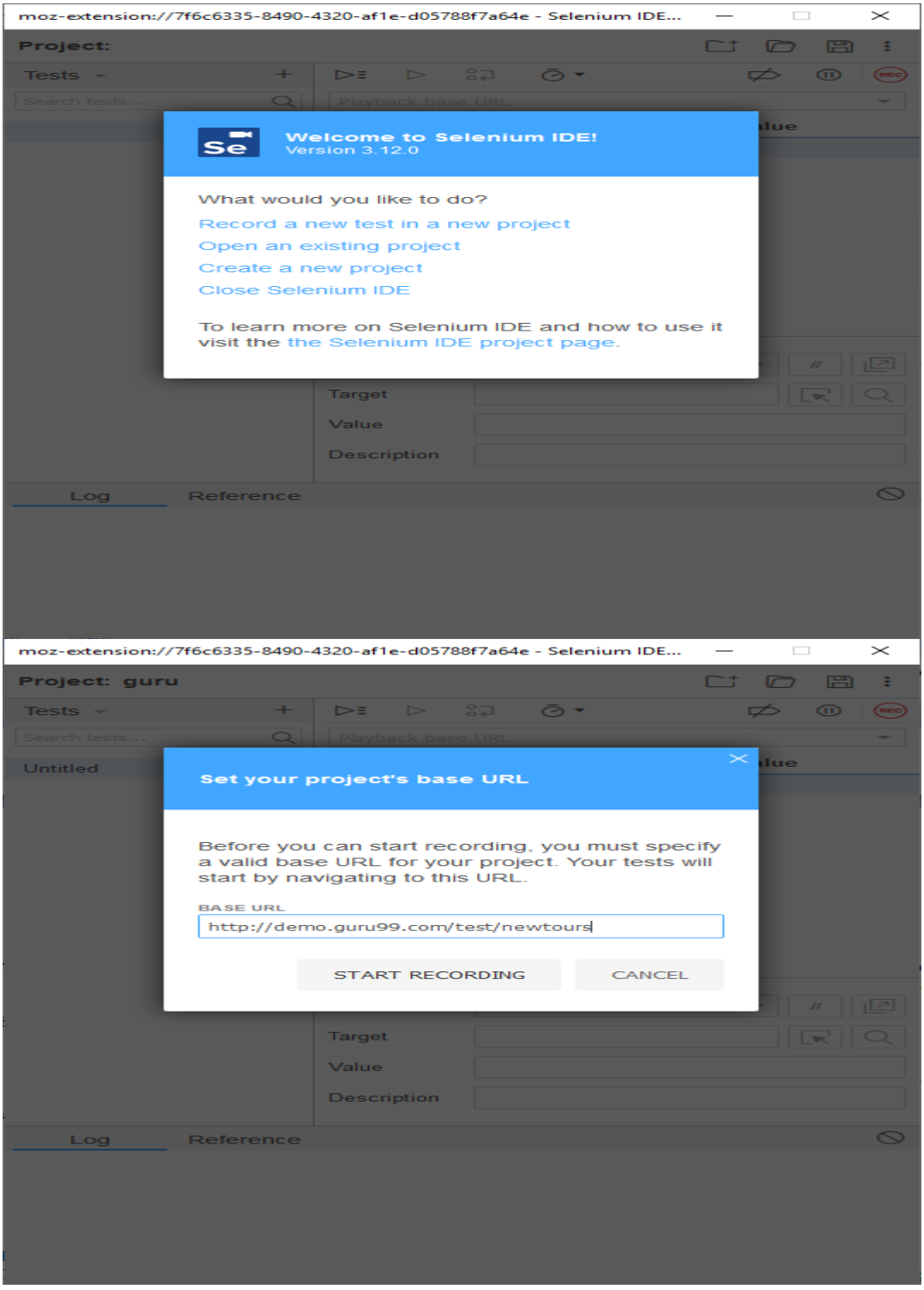
Step 9

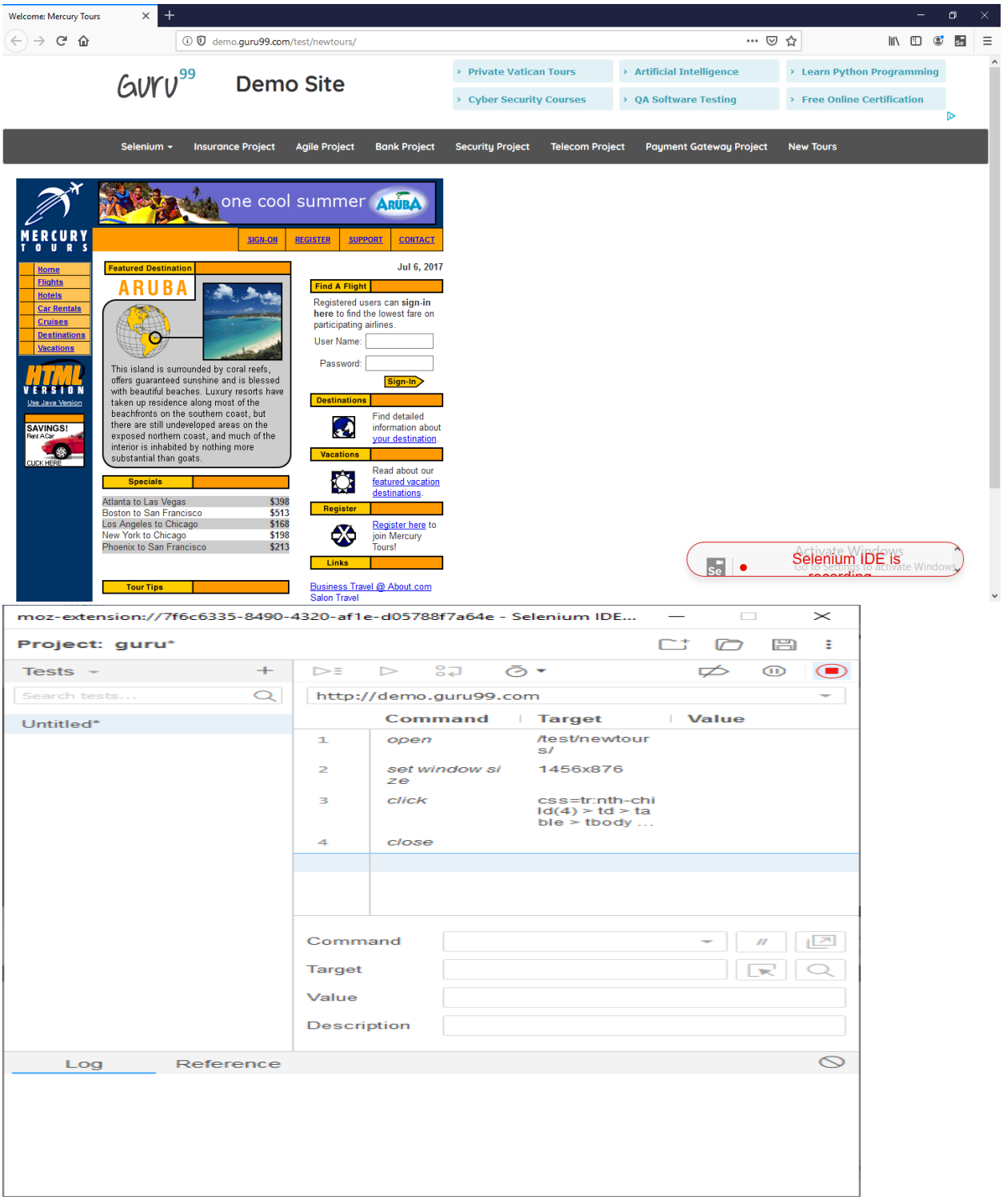
- Notice that the file was saved as side extension.

Step 10

- Go back to Selenium IDE and click the Playback button to execute the whole script. Selenium IDE should be able to replicate everything properly.

  OUTPUT:


moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project:
Tests
Search tests...
Playback base URL
Welcome to Selenium IDE!
Version 3.12.0
What would you like to do?
Record a new test in a new project
Open an existing project
Create a new project
Close Selenium IDE
To learn more on Selenium IDE and how to use it visit the the Selenium IDE project page.
Target
Value
Description
Log
Reference
moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: guru
Tests
Search tests...
Playback base URL
Untitled
Set your project's base URL
Before you can start recording, you must specify a valid base URL for your project. Your tests will start by navigating to this URL.
BASE URL
http://demo.guru99.com/test/newtours
START RECORDING
CANCEL
Target
Value
Description
Log
Reference


Welcome: Mercury Tours
demo.guru99.com/test/newtours/
Guru99 Demo Site
Private Vatican Tours
Artificial Intelligence
Learn Python Programming
Cyber Security Courses
QA Software Testing
Free Online Certification
Selenium
Insurance Project
Agile Project
Bank Project
Security Project
Telecom Project
Payment Gateway Project
New Tours
one cool summer
ARUBA
MERCURY TOURS
SIGN-ON
REGISTER
SUPPORT
CONTACT
Home
Flights
Hotels
Car Rentals
Cruises
Destinations
Vacations
HTML VERSION
Use Java Version
SAVINGS!
Rent A Car
CLICK HERE
Featured Destination
ARUBA
This island is surrounded by coral reefs, offers guaranteed sunshine and is blessed with beautiful beaches. Luxury resorts have taken up residence along most of the beachfronts on the southern coast, but there are still undeveloped areas on the exposed northern coast, and much of the interior is inhabited by nothing more substantial than goats.
Specials
Atlanta to Las Vegas $398
Boston to San Francisco $513
Los Angeles to Chicago $168
New York to Chicago $198
Phoenix to San Francisco $213
Tour Tips
Jul 6, 2017
Find A Flight
Registered users can sign-in here to find the lowest fare on participating airlines.
User Name:
Password:
Sign-In
Destinations
Find detailed information about your destination.
Vacations
Read about our featured vacation destinations.
Register
Register here to join Mercury Tours!
Links
Business Travel @ About.com
Salon Travel
Selenium IDE is recording
moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: guru*
Tests
Search tests...
Untitled*
http://demo.guru99.com
Command
Target
Value
1 open /test/newtours/
2 set window size 1456x876
3 click css=tr:nth-child(4) > td > table > tbody ...
4 close
Command
Target
Value
Description
Log
Reference

2.Install Selenium server and demonstrate it using a script in Java/PHP.

Introduction

1. **Selenium-RC** is the solution for tests that need more than simple browser actions and linear execution.
2. Selenium-RC uses the full power of programming languages to create more complex tests like reading and writing files, querying a database, emailing test results.
3. You'll want to use Selenium-RC whenever your test requires logic not supported by Selenium-IDE.
4. What logic could this be? For example, Selenium-IDE does not directly support:

- Condition statements
- Iteration
- Logging and reporting of test results
- Error handling, particularly unexpected errors
- Database testing
- Test case grouping
- Re-execution of failed tests
- Test case dependency
- Screenshot capture of test failures

5. Although these tasks are not supported by Selenium directly, all of them can be achieved by using programming techniques with a language-specific Selenium-RC client library.

Installation of Selenium RC and Eclipse

Download Eclipse

1. Go to URL – http://www.eclipse.org/downloads/
2. Select **Eclipse IDE for Java Developers** (Click on Windows 32 bit platform)

3. Click on OK button and save to a local drive (i.e. C: or D:, etc)
4. Unzip the downloaded zip file and rename that to Eclipse
5. Create one more folder "Eclipse-Workspace" (i.e. C:Eclipse-Workspace)in the same drive where Eclipse is unzipped and renamed.
6. Create Eclipse desktop shortcut (go to C:Eclipse folder –> right click Eclipse.exe and then click on "desktop create shortcut").

1. Now we need to create a workspace folder –> C:Eclipse-WorkspaceSeleniumTests
2. Double click on "Eclipse shortcut on Desktop"
3. This opens the Eclipse
4. Close Eclipse welcome screen
5. Click File menu –> Launch Worspace –> other
6. Now Select the C:Eclipse-WorkspaceSeleniumTests folder.

We have finished setting up the eclipse.

Now, we need to download Selenium RC server / client driver and configure that to Eclipse
1. Download Selenium server: http://seleniumhq.org/download/
2. Download Selenium Client driver for Java (from Selenium Client Drivers section)
3. Create "Selenium" folder in C: drive and copy the Selenium-server.jar as well as unzip the Selenium Client driver (C:Selenium)

Downloading and unzipping the files into a folder is done.
We need to configure the appropriate Selenium Client driver Jar file to the Eclipse.

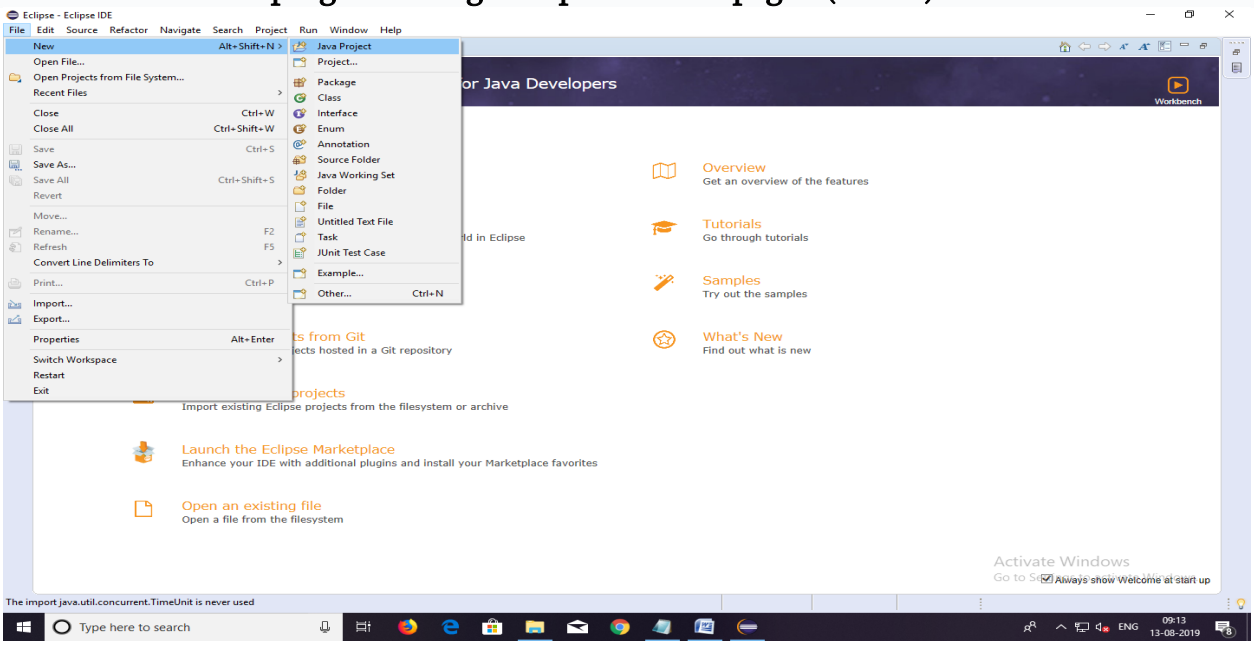
1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just "project")
2. In Select Wizard –> Click Java –> "Java Project"
3. Give the project name (e.g. DemoTests)
4. Click Finish – Click Yes
5. Now we are done with creation of project and need to configure the Selenium Client driver to this Project
6. Right Click "DemoTests" project

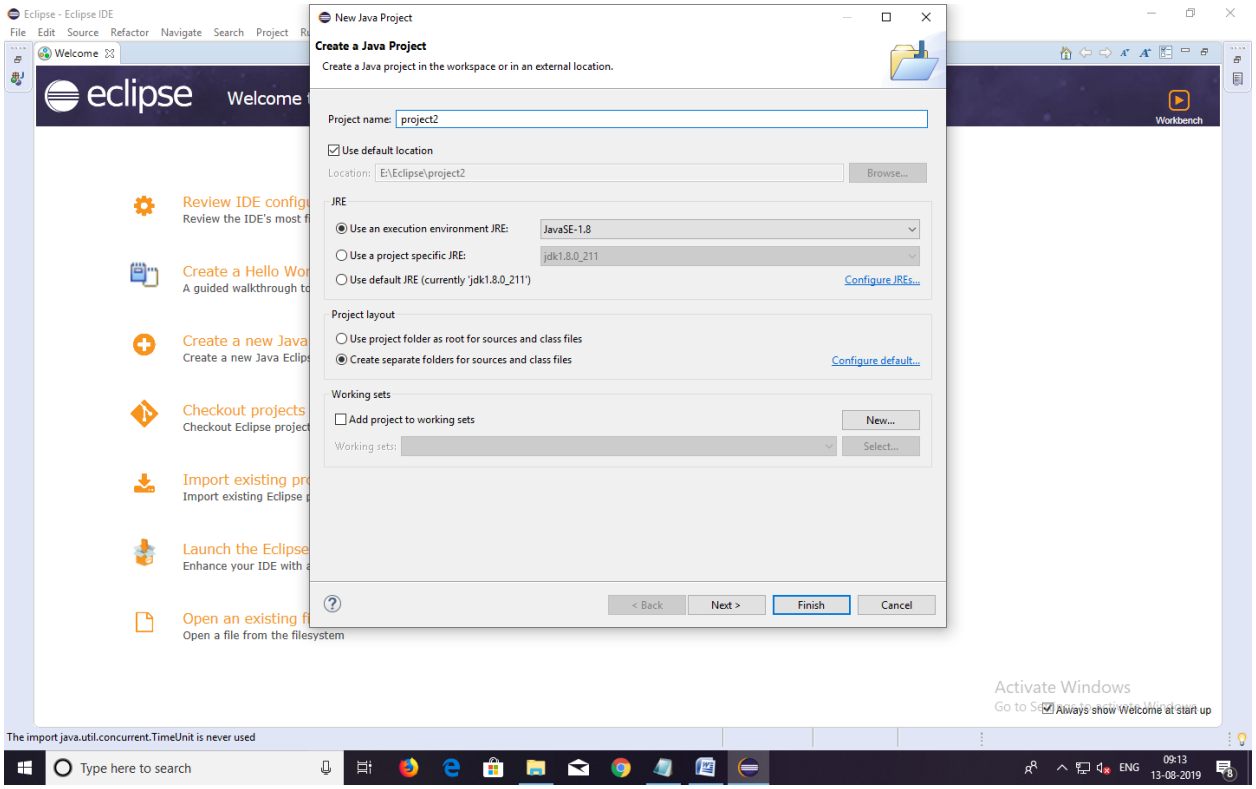
7. Click “Java Build Path”
8. Click Libraries tab
9. Click “Add External JARs” button
10. Select “Selenium Client Drivers” unzipped in C:Selenium folder (Selenium Server JAR file should not be added)
11. Click OK
12. Referenced libraries –> contains both the Selenium Client driver jar files.
13. Create a new class file as “SeleniumDemo” in the “DemoTest” by right click on src folder.
14. Copy the below code in the class file:-

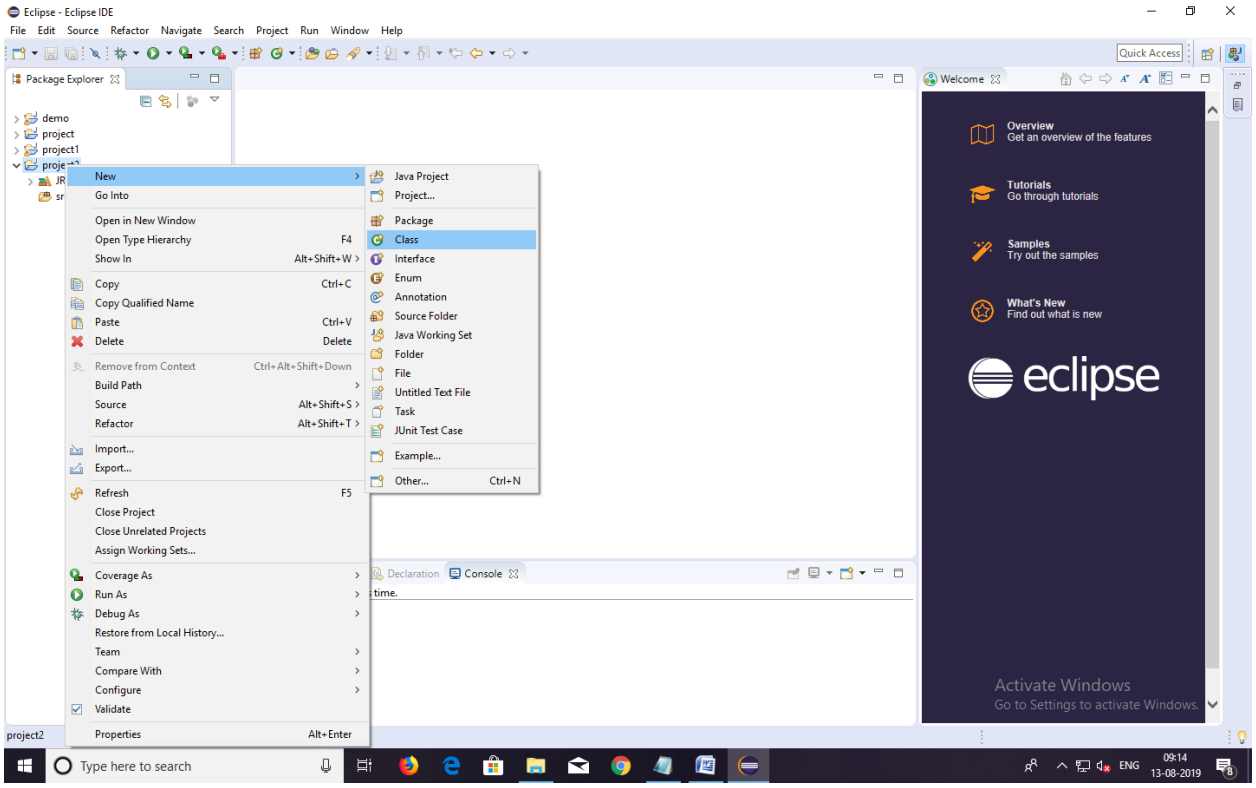
```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.remote.DesiredCapabilities;

public class hello
{
	static String driverPath = "D:\\selenium pracs\\geckodriver-v0.21.0-win32\\GeckoDriver.exe";
   public static WebDriver driver;
	public static void main(String args[])
	{
		int a=10,b=20;
		System.out.println("Hi....");
		System.out.println(a+b);
		System.out.println("Selenium demo.....");

		System.setProperty("webdriver.gecko.driver",driverPath);
		DesiredCapabilities capabilities = DesiredCapabilities.firefox();
		capabilities.setCapability("marionette",true);
		driver= new FirefoxDriver(capabilities);
		driver.get("https://www.facebook.com/");
		driver.manage().window().maximize();
		driver.quit();
```

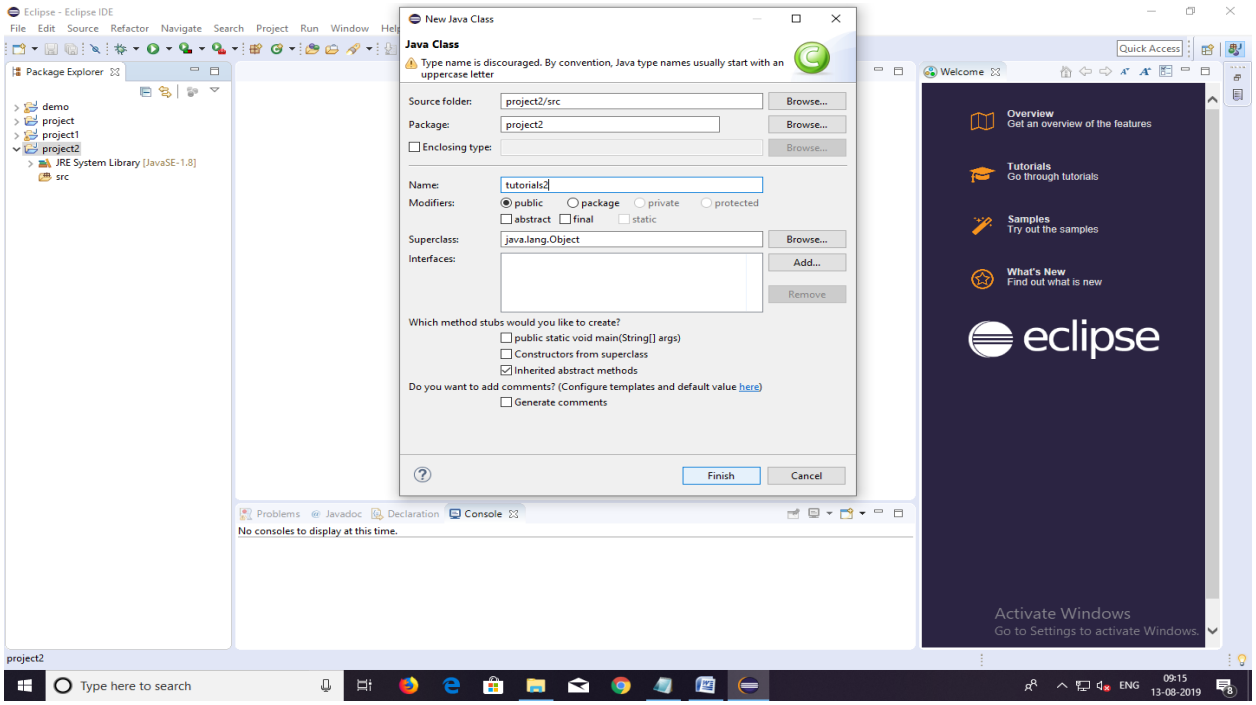
}}

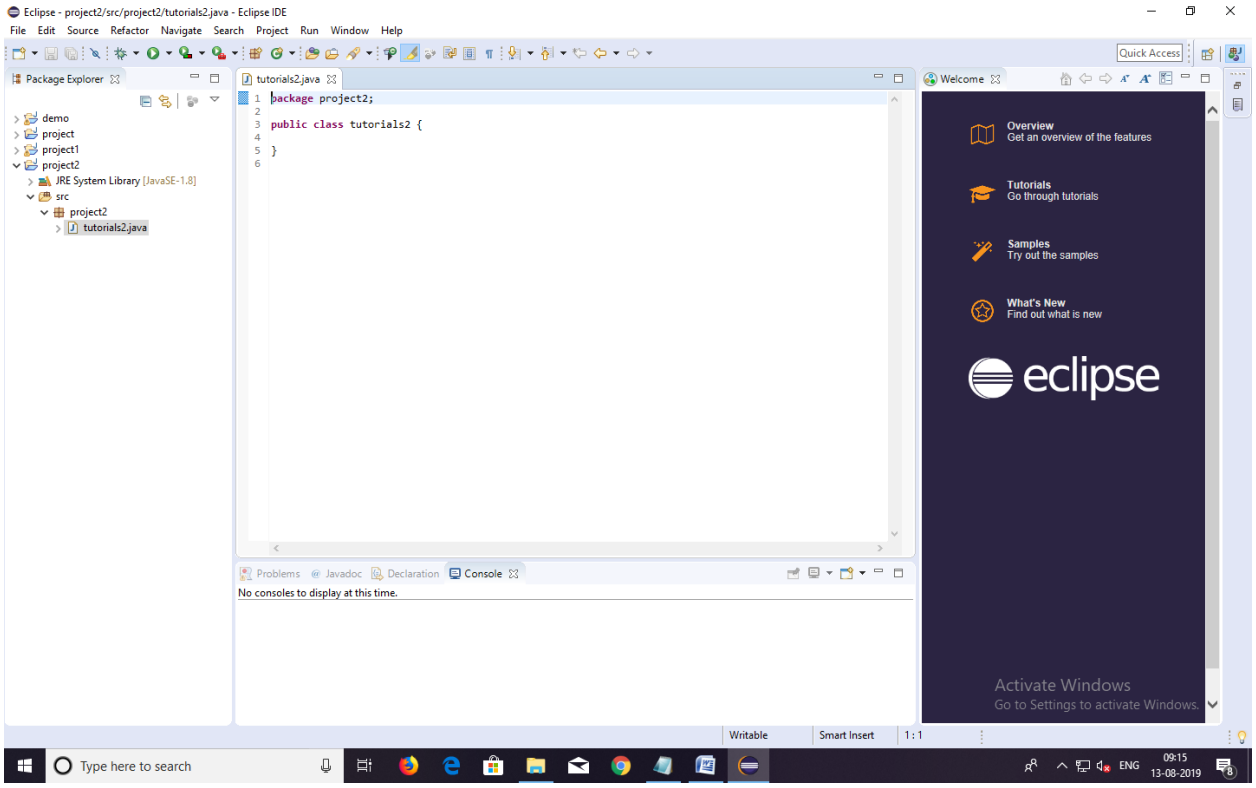
4.Write and test a program to login a specific web page. (Gmail)




Eclipse - Eclipse IDE
File Edit Source Refactor Navigate Search Project
Welcome
eclipse
Welcome
Workbench
Review IDE configu
Review the IDE's most f
Create a Hello Wor
A guided walkthrough to
Create a new Java
Create a new Java Eclips
Checkout projects
Checkout Eclipse project
Import existing pr
Import existing Eclipse
Launch the Eclipse
Enhance your IDE with
Open an existing f
Open a file from the filesystem
New Java Project
Create a Java Project
Create a Java project in the workspace or in an external location.
Project name: project2
Use default location
Location: E:\Eclipse\project2
Browse...
JRE
Use an execution environment JRE: JavaSE-1.8
Use a project specific JRE: jdk1.8.0_211
Use default JRE (currently 'jdk1.8.0_211')
Configure JREs...
Project layout
Use project folder as root for sources and class files
Create separate folders for sources and class files
Configure default...
Working sets
Add project to working sets
New...
Working sets:
Select...
< Back
Next >
Finish
Cancel
Activate Windows
Always show Welcome at start up
The import java.util.concurrent.TimeUnit is never used
Type here to search
ENG
09:13
13-08-2019


Eclipse - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Package Explorer
demo
project
project1
New
Go Into
Open in New Window
Open Type Hierarchy F4
Show In Alt+Shift+W
Copy Ctrl+C
Copy Qualified Name
Paste Ctrl+V
Delete Delete
Remove from Context Ctrl+Alt+Shift+Down
Build Path
Source Alt+Shift+S
Refactor Alt+Shift+T
Import...
Export...
Refresh F5
Close Project
Close Unrelated Projects
Assign Working Sets...
Coverage As
Run As
Debug As
Restore from Local History...
Team
Compare With
Configure
Validate
Properties Alt+Enter
Java Project
Project...
Package
Class
Interface
Enum
Annotation
Source Folder
Java Working Set
Folder
File
Untitled Text File
Task
JUnit Test Case
Example...
Other... Ctrl+N
Declaration
Console
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
project2
Type here to search
ENG
09:14
13-08-2019


Eclipse - Eclipse IDE
New Java Class
Java Class
Type name is discouraged. By convention, Java type names usually start with an uppercase letter
Source folder: project2/src
Package: project2
Enclosing type:
Name: tutorials2
Modifiers: public package private protected
abstract final static
Superclass: java.lang.Object
Interfaces:
Add...
Remove
Which method stubs would you like to create?
public static void main(String[] args)
Constructors from superclass
Inherited abstract methods
Do you want to add comments? (Configure templates and default value here)
Generate comments
Finish
Cancel
Problems Javadoc Declaration Console
No consoles to display at this time.
project2
JRE System Library [JavaSE-1.8]
src
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
09:15
13-08-2019


Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo
project
project1
project2
JRE System Library [JavaSE-1.8]
src
project2
tutorials2.java
tutorials2.java
1 package project2;
2
3 public class tutorials2 {
4
5 }
6
Problems Javadoc Declaration Console
No consoles to display at this time.
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
1 : 1
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ENG
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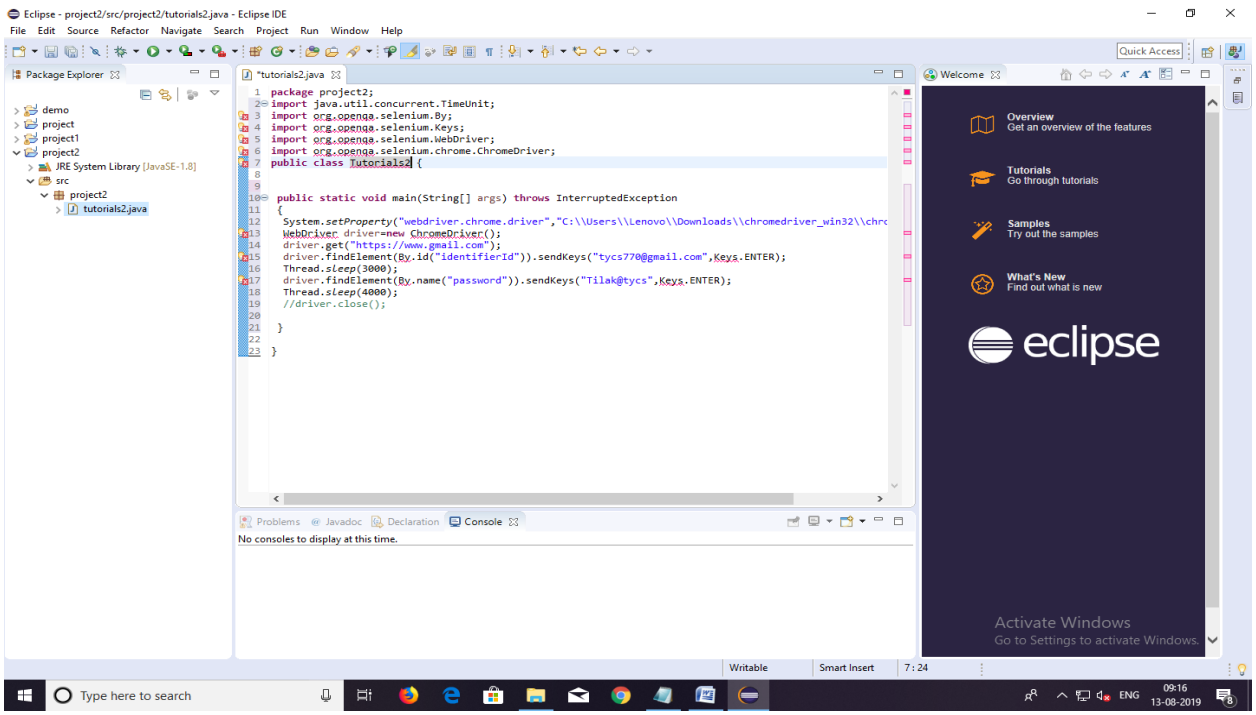
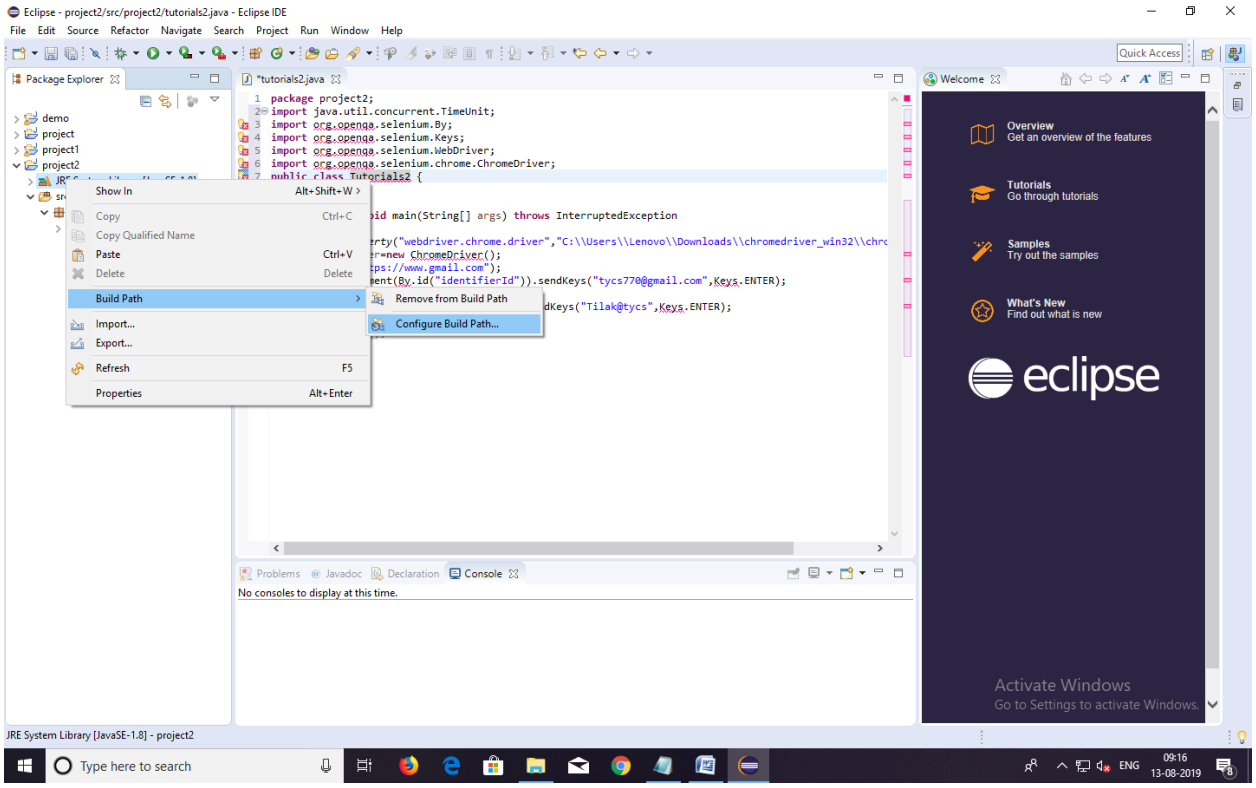
13-08-2019


Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo
project
project1
project2
JRE System Library [JavaSE-1.8]
src
project2
tutorials2.java
*tutorials2.java
1 package project2;
2 import java.util.concurrent.TimeUnit;
3 import org.openqa.selenium.By;
4 import org.openqa.selenium.Keys;
5 import org.openqa.selenium.WebDriver;
6 import org.openqa.selenium.chrome.ChromeDriver;
7 public class Tutorials2 {
8
9
10 public static void main(String[] args) throws InterruptedException
11 {
12 System.setProperty("webdriver.chrome.driver","C:\\Users\\Lenovo\\Downloads\\chromedriver_win32\\chro
13 WebDriver driver=new ChromeDriver();
14 driver.get("https://www.gmail.com");
15 driver.findElement(By.id("identifierId")).sendKeys("tycs770@gmail.com",Keys.ENTER);
16 Thread.sleep(3000);
17 driver.findElement(By.name("password")).sendKeys("Tilak@tycs",Keys.ENTER);
18 Thread.sleep(4000);
19 //driver.close();
20
21 }
22
23 }
Problems Javadoc Declaration Console
No consoles to display at this time.
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
7 : 24
Type here to search
ENG
09:16
13-08-2019


Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo
project
project1
project2
JRE System Library [JavaSE-1.8]
src
project2
tutorials2.java
*tutorials2.java
package project2;
import java.util.concurrent.TimeUnit;
import org.openqa.selenium.By;
import org.openqa.selenium.Keys;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
public class Tutorials2 {
Show In Alt+Shift+W
Copy Ctrl+C
Copy Qualified Name
Paste Ctrl+V
Delete Delete
Build Path
Import...
Export...
Refresh F5
Properties Alt+Enter
Remove from Build Path
Configure Build Path...
Problems Javadoc Declaration Console
No consoles to display at this time.
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
JRE System Library [JavaSE-1.8] - project2
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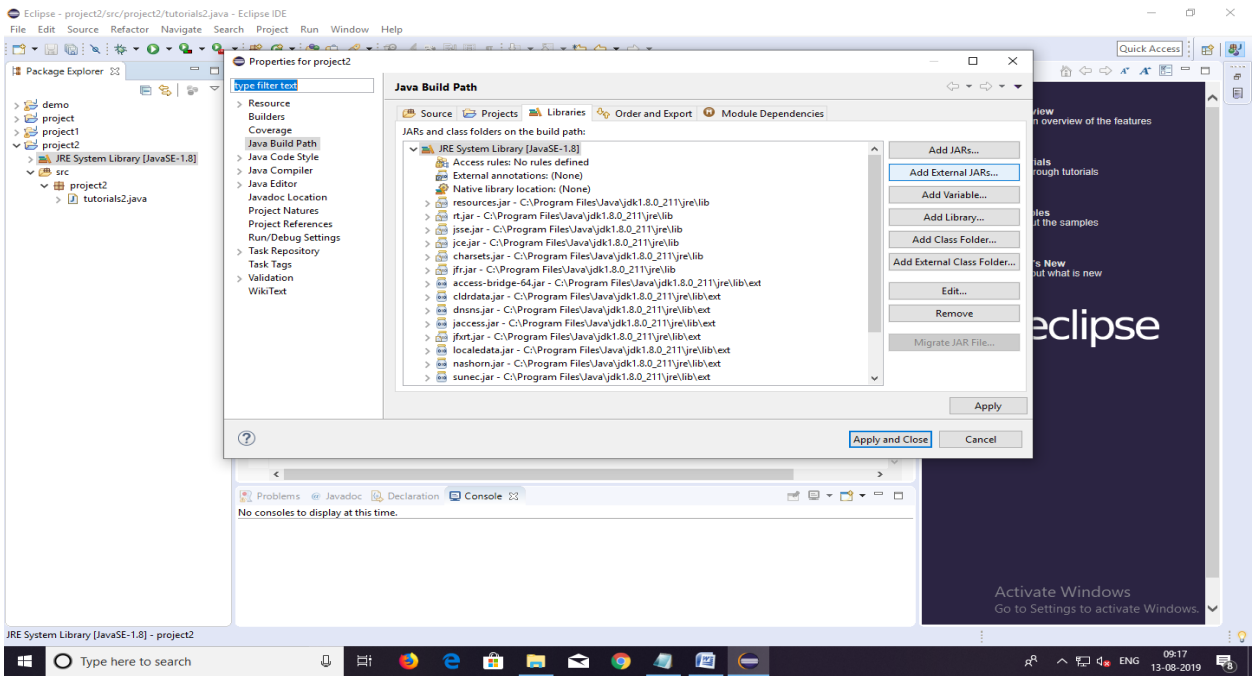
13-08-2019


Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
Properties for project2
type filter text
Resource
Builders
Coverage
Java Build Path
Java Code Style
Java Compiler
Java Editor
Javadoc Location
Project Natures
Project References
Run/Debug Settings
Task Repository
Task Tags
Validation
WikiText
Java Build Path
Source Projects Libraries Order and Export Module Dependencies
JARs and class folders on the build path:
JRE System Library [JavaSE-1.8]
Access rules: No rules defined
External annotations: (None)
Native library location: (None)
resources.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib
rt.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib
jsse.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib
jce.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib
charsets.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib
jfr.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib
access-bridge-64.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
cldrdata.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
dnsns.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
jaccess.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
jfxrt.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
localedata.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
nashorn.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
sunec.jar - C:\Program Files\Java\jdk1.8.0_211\jre\lib\ext
Add JARs...
Add External JARs...
Add Variable...
Add Library...
Add Class Folder...
Add External Class Folder...
Edit...
Remove
Migrate JAR File...
Apply
Apply and Close
Cancel
Problems Javadoc Declaration Console
No consoles to display at this time.
Activate Windows
Go to Settings to activate Windows.
JRE System Library [JavaSE-1.8] - project2
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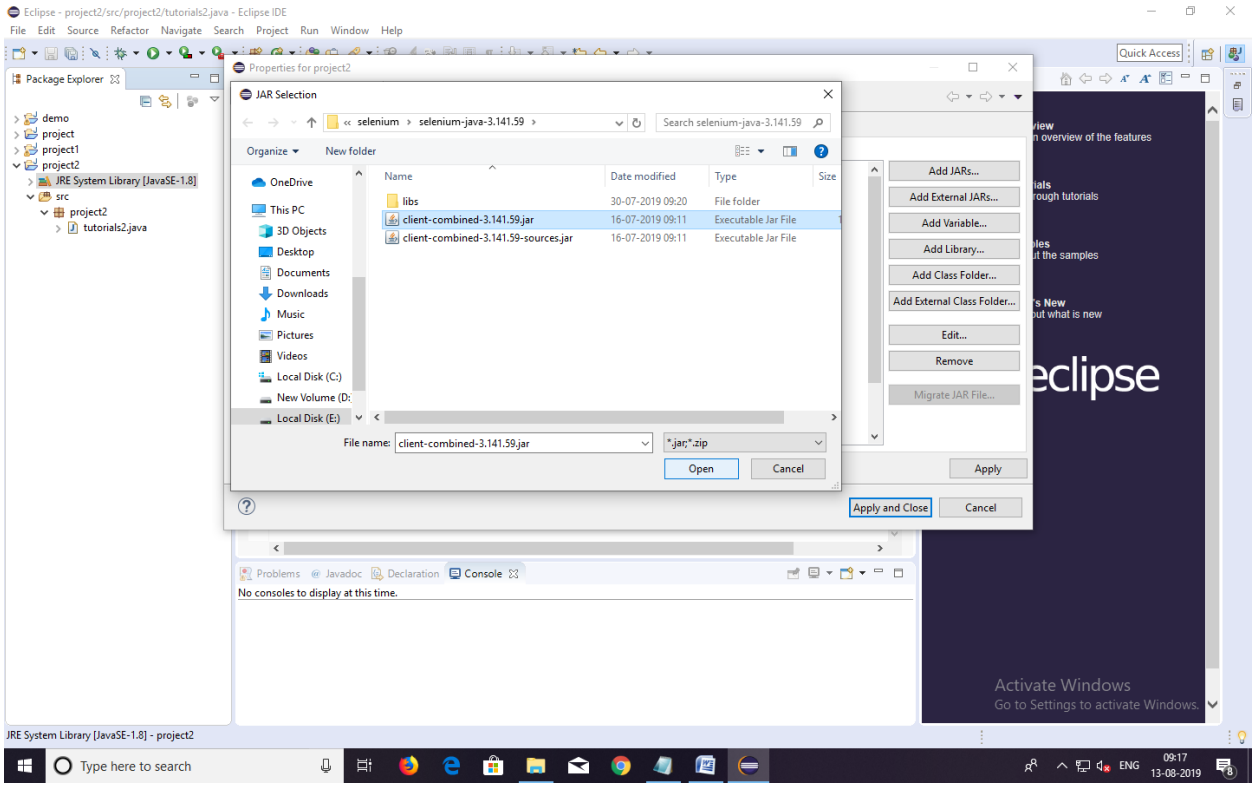
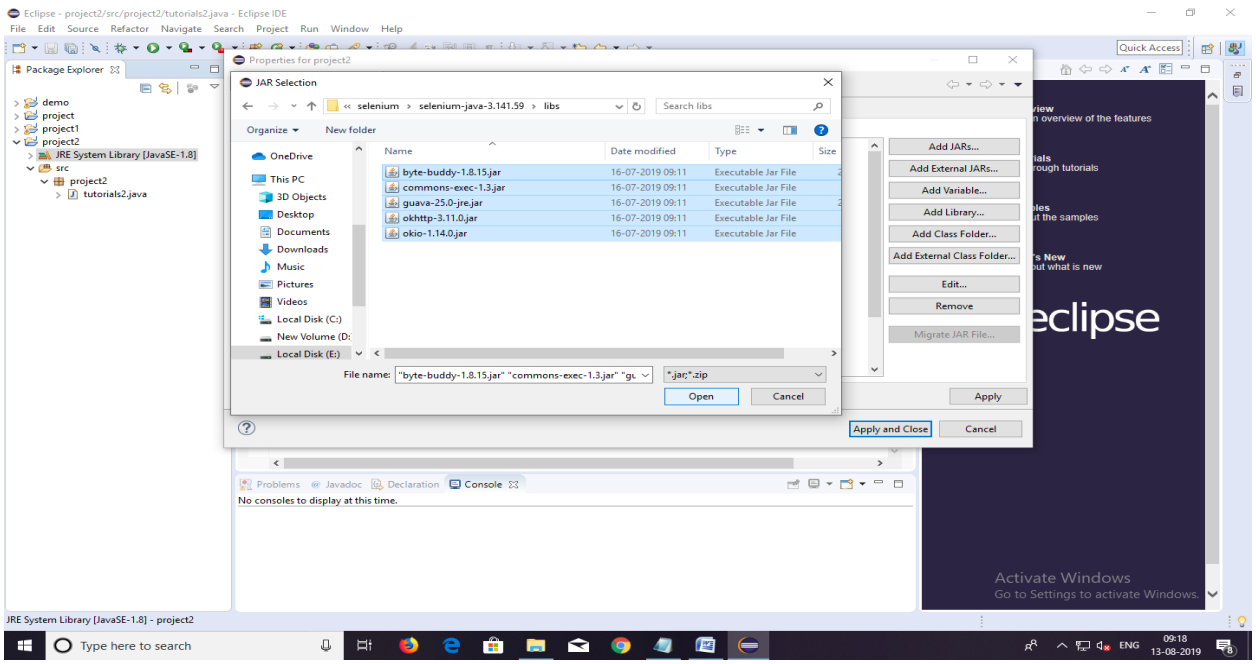
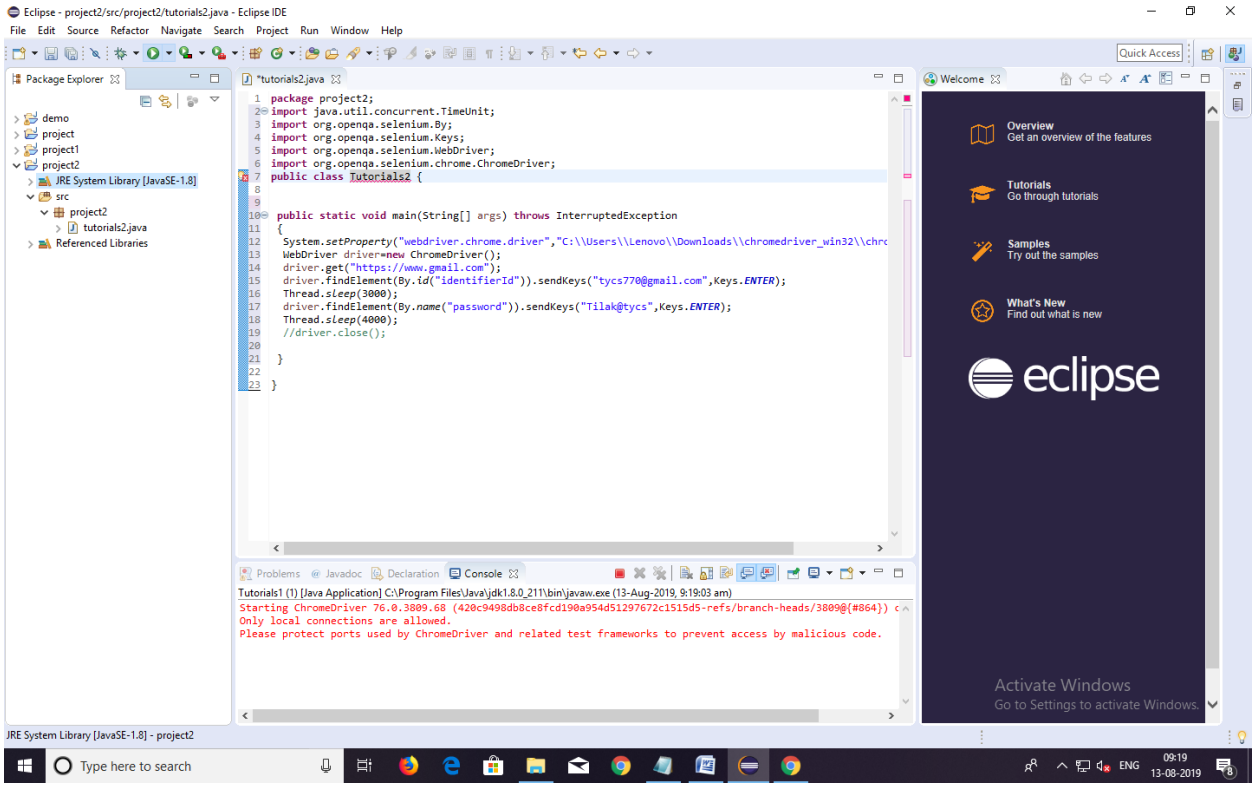
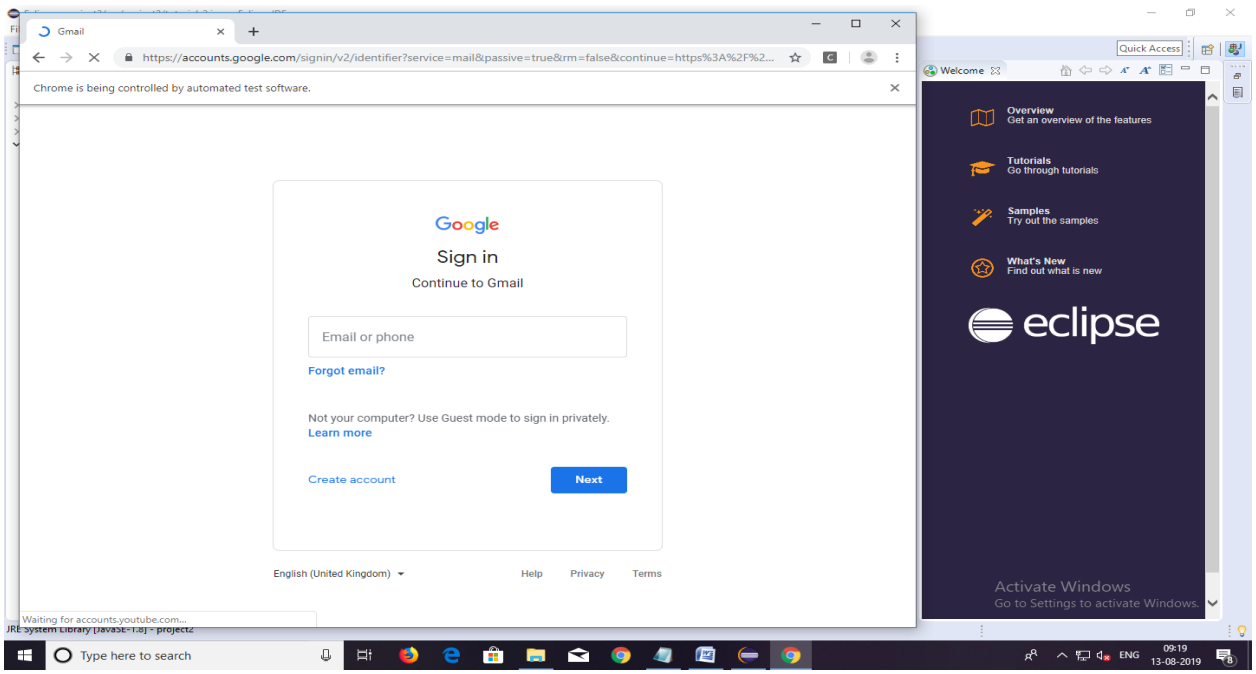
13-08-2019

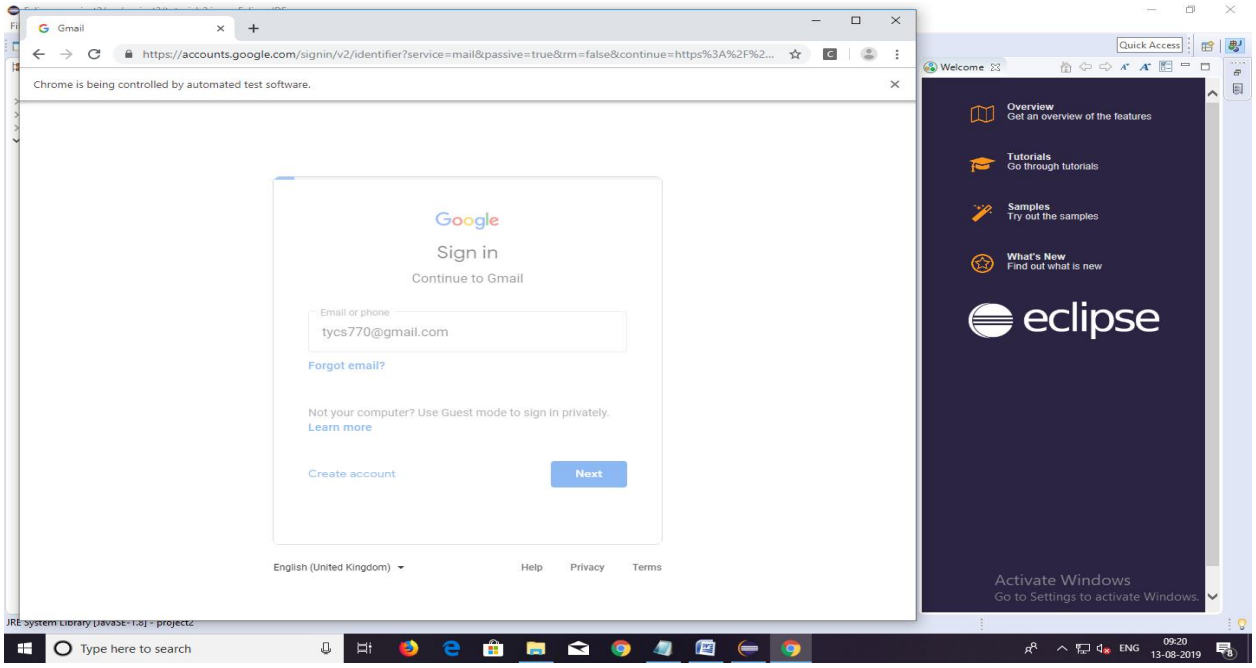

Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo
project
project1
project2
JRE System Library [JavaSE-1.8]
src
project2
tutorials2.java
Properties for project2
JAR Selection
selenium › selenium-java-3.141.59 ›
Search selenium-java-3.141.59
Organize
New folder
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
New Volume (D:
Local Disk (E:)
Name
Date modified
Type
Size
libs
30-07-2019 09:20
File folder
client-combined-3.141.59.jar
16-07-2019 09:11
Executable Jar File
client-combined-3.141.59-sources.jar
16-07-2019 09:11
Executable Jar File
File name:
client-combined-3.141.59.jar
.jar;.zip
Open
Cancel
Add JARs...
Add External JARs...
Add Variable...
Add Library...
Add Class Folder...
Add External Class Folder...
Edit...
Remove
Migrate JAR File...
Apply
Apply and Close
Cancel
Problems
Javadoc
Declaration
Console
No consoles to display at this time.
Quick Access
eclipse
Activate Windows
Go to Settings to activate Windows.
JRE System Library [JavaSE-1.8] - project2
Type here to search
ENG
09:17
13-08-2019

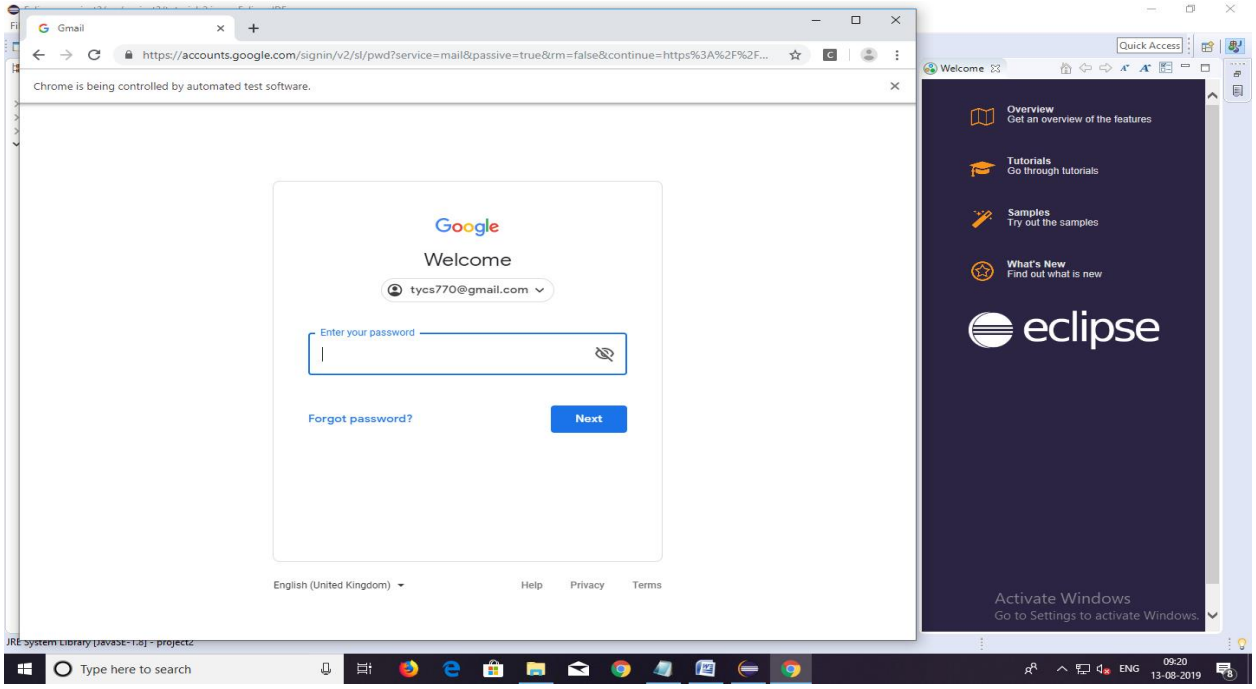

Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo
project
project1
project2
JRE System Library [JavaSE-1.8]
src
project2
tutorials2.java
Properties for project2
JAR Selection
selenium › selenium-java-3.141.59 › libs
Search libs
Organize
New folder
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
New Volume (D:
Local Disk (E:)
Name
Date modified
Type
Size
byte-buddy-1.8.15.jar
16-07-2019 09:11
Executable Jar File
commons-exec-1.3.jar
16-07-2019 09:11
Executable Jar File
guava-25.0-jre.jar
16-07-2019 09:11
Executable Jar File
okhttp-3.11.0.jar
16-07-2019 09:11
Executable Jar File
okio-1.14.0.jar
16-07-2019 09:11
Executable Jar File
File name:
"byte-buddy-1.8.15.jar" "commons-exec-1.3.jar" "gu
.jar;.zip
Open
Cancel
Add JARs...
Add External JARs...
Add Variable...
Add Library...
Add Class Folder...
Add External Class Folder...
Edit...
Remove
Migrate JAR File...
Apply
Apply and Close
Cancel
Problems
Javadoc
Declaration
Console
No consoles to display at this time.
Quick Access
eclipse
Activate Windows
Go to Settings to activate Windows.
JRE System Library [JavaSE-1.8] - project2
Type here to search
ENG
09:18
13-08-2019

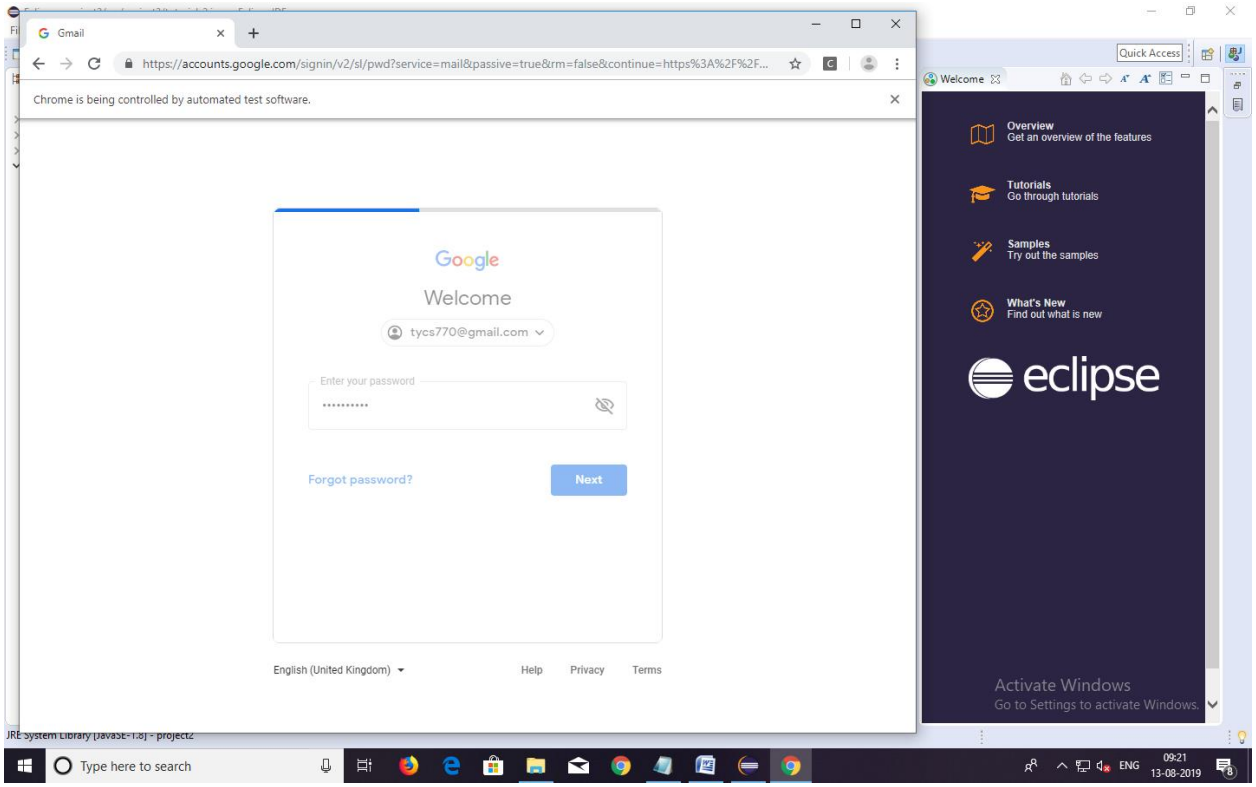

Eclipse - project2/src/project2/tutorials2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
demo
project
project1
project2
JRE System Library [JavaSE-1.8]
src
project2
tutorials2.java
Referenced Libraries
*tutorials2.java
package project2;
import java.util.concurrent.TimeUnit;
import org.openqa.selenium.By;
import org.openqa.selenium.Keys;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
public class Tutorials2 {
public static void main(String[] args) throws InterruptedException
{
System.setProperty("webdriver.chrome.driver","C:\\Users\\Lenovo\\Downloads\\chromedriver_win32\\chr
WebDriver driver=new ChromeDriver();
driver.get("https://www.gmail.com");
driver.findElement(By.id("identifierId")).sendKeys("tycs770@gmail.com",Keys.ENTER);
Thread.sleep(3000);
driver.findElement(By.name("password")).sendKeys("Tilak@tycs",Keys.ENTER);
Thread.sleep(4000);
//driver.close();
}
}
Problems Javadoc Declaration Console
Tutorials1 (1) [Java Application] C:\Program Files\Java\jdk1.8.0_211\bin\javaw.exe (13-Aug-2019, 9:19:03 am)
Starting ChromeDriver 76.0.3809.68 (420c9498db8ce8fcd190a954d51297672c1515d5-refs/branch-heads/3809@{#864})
Only local connections are allowed.
Please protect ports used by ChromeDriver and related test frameworks to prevent access by malicious code.
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
JRE System Library [JavaSE-1.8] - project2
Type here to search
ENG
09:19
13-08-2019

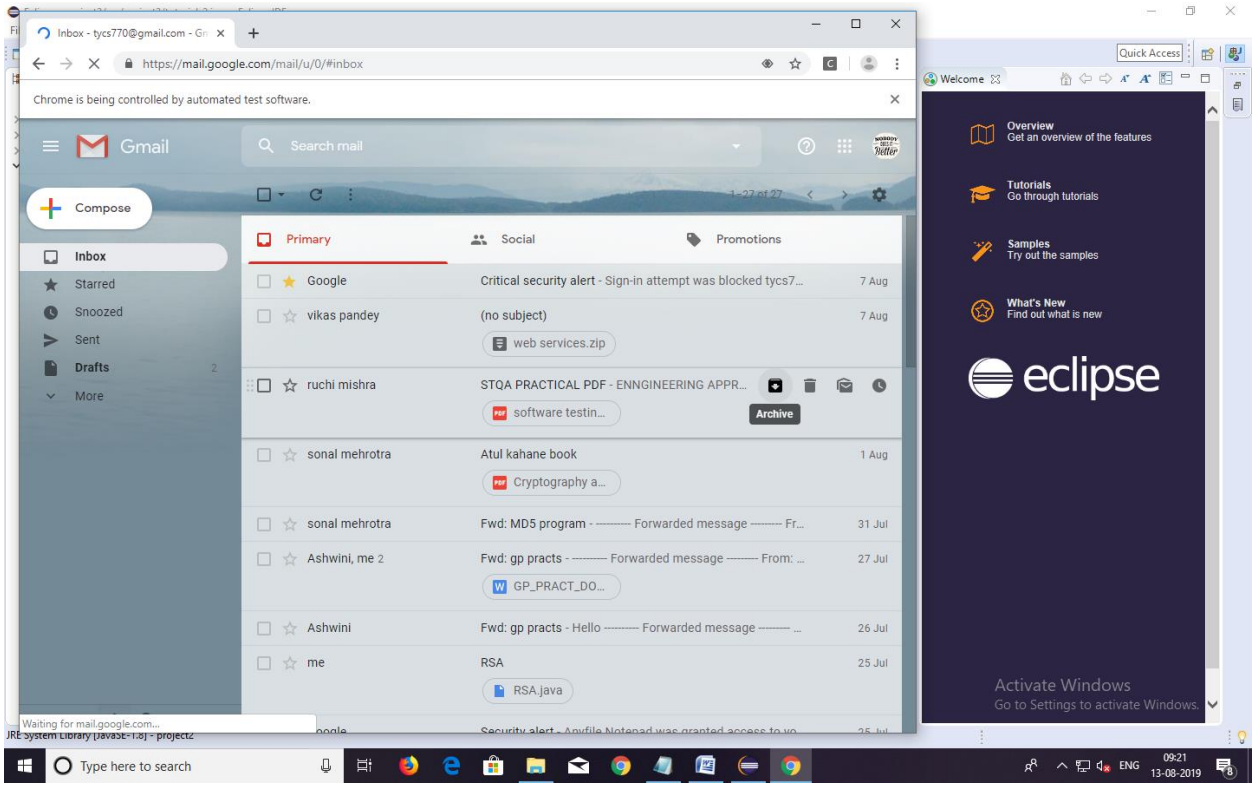
OUTPUT:


Gmail
https://accounts.google.com/signin/v2/identifier?service=mail&passive=true&rm=false&continue=https%3A%2F%2...
Chrome is being controlled by automated test software.
Google
Sign in
Continue to Gmail
Email or phone
Forgot email?
Not your computer? Use Guest mode to sign in privately.
Learn more
Create account
Next
English (United Kingdom)
Help
Privacy
Terms
Waiting for accounts.youtube.com...
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
09:19
13-08-2019


Gmail
https://accounts.google.com/signin/v2/identifier?service=mail&passive=true&rm=false&continue=https%3A%2F%2...
Chrome is being controlled by automated test software.
Google
Sign in
Continue to Gmail
Email or phone
tycs770@gmail.com
Forgot email?
Not your computer? Use Guest mode to sign in privately.
Learn more
Create account
Next
English (United Kingdom)
Help
Privacy
Terms
Quick Access
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
09:20
13-08-2019


Gmail
https://accounts.google.com/signin/v2/sl/pwd?service=mail&passive=true&rm=false&continue=https%3A%2F%2F...
Chrome is being controlled by automated test software.
Google
Welcome
tycs770@gmail.com
Enter your password
Forgot password?
Next
English (United Kingdom)
Help
Privacy
Terms
Quick Access
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
09:20
13-08-2019


Gmail
https://accounts.google.com/signin/v2/sl/pwd?service=mail&passive=true&rm=false&continue=https%3A%2F%2F...
Chrome is being controlled by automated test software.
Google
Welcome
tycs770@gmail.com
Enter your password
Forgot password?
Next
English (United Kingdom)
Help
Privacy
Terms
Quick Access
Welcome
Overview
Get an overview of the features
Tutorials
Go through tutorials
Samples
Try out the samples
What's New
Find out what is new
eclipse
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
09-21
13-08-2019



5.Write and test a program to update 10 student records into table into Excel file (using TestNG)

TestNG is a testing framework inspired from JUnit and NUnit but introducing some new functionality that make it more powerful and easier to use, such as:

- Annotations.
- Run your tests in arbitrarily big thread pools with various policies available (all methods in their own thread, one thread per test class, etc...).
- Test that your code is multithread safe.

• Flexible test configuration.
• Support for data-driven testing (with @DataProvider).
• Support for parameters.
• Powerful execution model (no more TestSuite).
• Supported by a variety of tools and plug-ins (Eclipse, IDEA, Maven, etc...).
• Embeds BeanShell for further flexibility.
• Default JDK functions for runtime and logging (no dependencies).
• Dependent methods for application server testing.

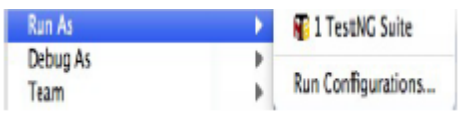
TestNG is designed to cover all categories of tests: unit, functional, end-to-end, integration, etc...

Installing TestNG in eclipse

1. Select Help / Software updates / Find and Install.
2. Search for new features to install.
3. New remote site.
4. For Eclipse 3.4 and above, enter http://beust.com/eclipse.
5. For Eclipse 3.3 and below, enter http://beust.com/eclipse1.
6. Make sure the check box next to URL is checked and click Next.
7. **Eclipse will then guide you through the process.**

Launching your tests in Eclipse

• We finished writing our tests, now how can we run them?
• You can launch TestNG from the command line, using an Eclipse plugin or even programatically. We are going to use the Eclipse plugin. Follow the steps described on the official TestNG documentation over here.
• If you installed TestNG correctly, you will see this menu when you right click on the XML file:



Click on “Run as TestNG Suite” and your test will start running.

Selenium Tests with Microsoft Excel

Parameterizing a test from external sources such as Microsoft Excel is always recommended in order to handle large amount of test data. To read data from Excel, we need APIs which support opening file, reading data, and writing data into Excel. We should know various classes and methods which support above mentioned operations. In this post, let us try to figure out which is the API that supports all the activities we need to do during execution of a test.

Jxl.jar is an open source Java API which supports read Excel spreadsheets and to write into Excel spreadsheets. Below are some of the operations that we can handle with this API.

1. Read data from Excel spreadsheet
2. Read and write formulas into spreadsheets
3. Generate spreadsheets
4. Supports formatting of font, number, and date
5. Supports coloring of cells

To access the methods and classes provided by this API inside Eclipse we need to add this JAR file to the Java Build Path.

(I have explained steps to add external Jar files to Java Build Path in previous examples)

Download the jxl.jar from "http://jexcelapi.sourceforge.net/"

Add the JAR file to Java Build Path

Add import statements to the .java file as below to read from an Excel spreadsheet

```
import jxl.Cell;
import jxl.Sheet;
import jxl.Workbook;
import jxl.read.biff.BiffException;
```

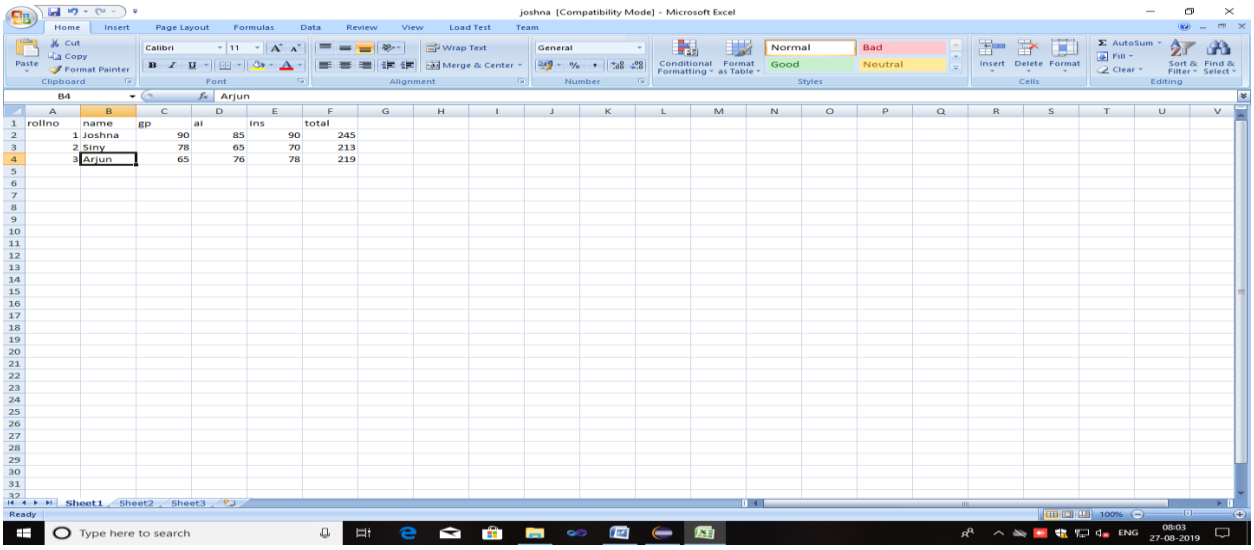
//Code to update 10 student records into table into Excel file

```
import org.testng.annotations.BeforeClass;
import org.testng.annotations.Test;
import jxl.*;
import jxl.read.*;
```

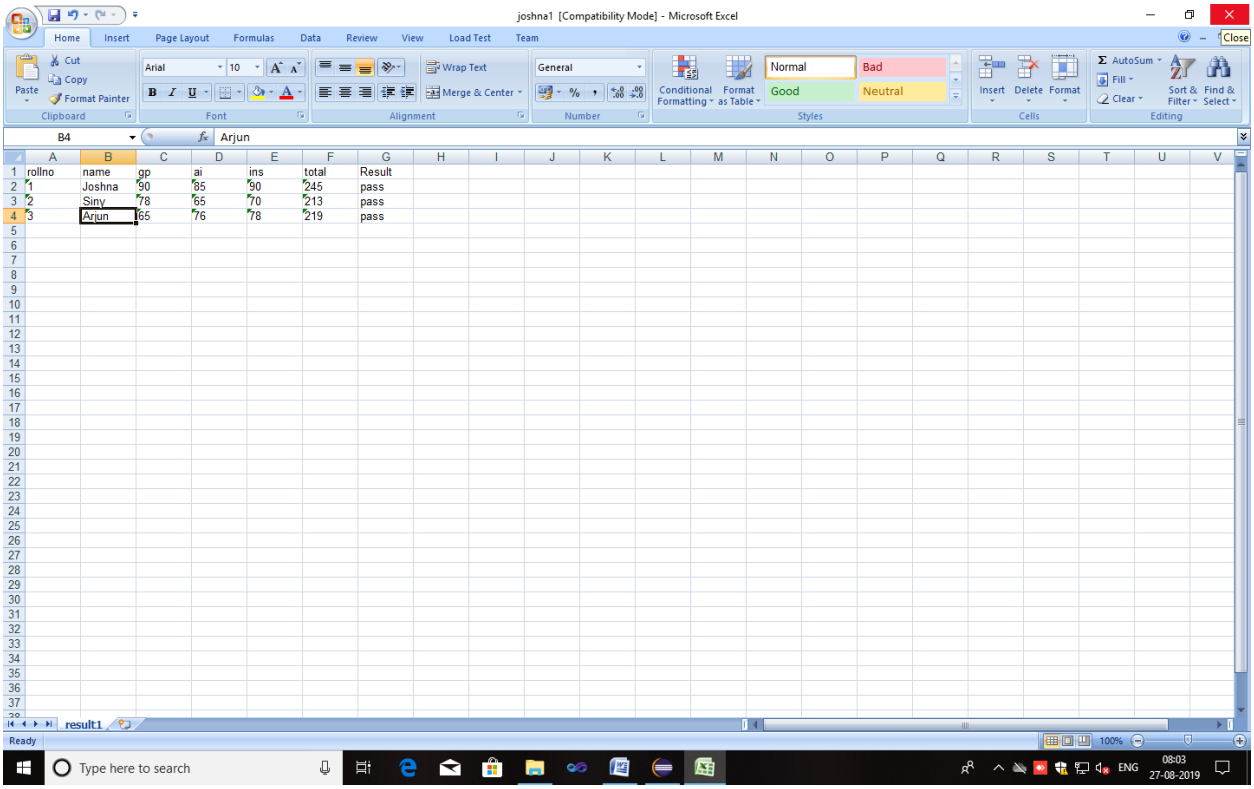
```
import jxl.write.*;
import java.io.*;

public class updatestudrecords {
	@BeforeClass
	public void f1()
	{}
	@Test
	public void testImportexport1() throws Exception {
	FileInputStream fi = new
FileInputStream("C:\Users\Lenovo\Desktop\joshna.xls");
	Workbook w = Workbook.getWorkbook(fi);
	Sheet s = w.getSheet(0);
	String a[][] = new String[s.getRows()][s.getColumns()];
	FileOutputStream fo = new
FileOutputStream("C:\Users\Lenovo\Desktop\joshna1.xls");
	WritableWorkbook wwb = Workbook.createWorkbook(fo);
	WritableSheet ws = wwb.createSheet("result1", 0);
	for (int i = 0; i < s.getRows(); i++)
	for (int j = 0; j < s.getColumns(); j++)
	{
	a[i][j] = s.getCell(j, i).getContents();
	Label l2 = new Label(j, i, a[i][j]);
	ws.addCell(l2);
	Label l1 = new Label(6, 0, "Result");
	ws.addCell(l1);
	}
	for (int i = 1; i < s.getRows(); i++) {
		for (int j = 2; j < s.getColumns(); j++)
		{
		a[i][j] = s.getCell(j, i).getContents();
		int x=Integer.parseInt(a[i][j]);
		if(x > 35)
		{
```

```
Label l1 = new Label(6, i, "pass");
ws.addCell(l1);
}
else
{
Label l1 = new Label(6, i, "fail");
ws.addCell(l1);
break;   }              }
}
wwb.write();
wwb.close();          }        }
```

Input:-



Output:-

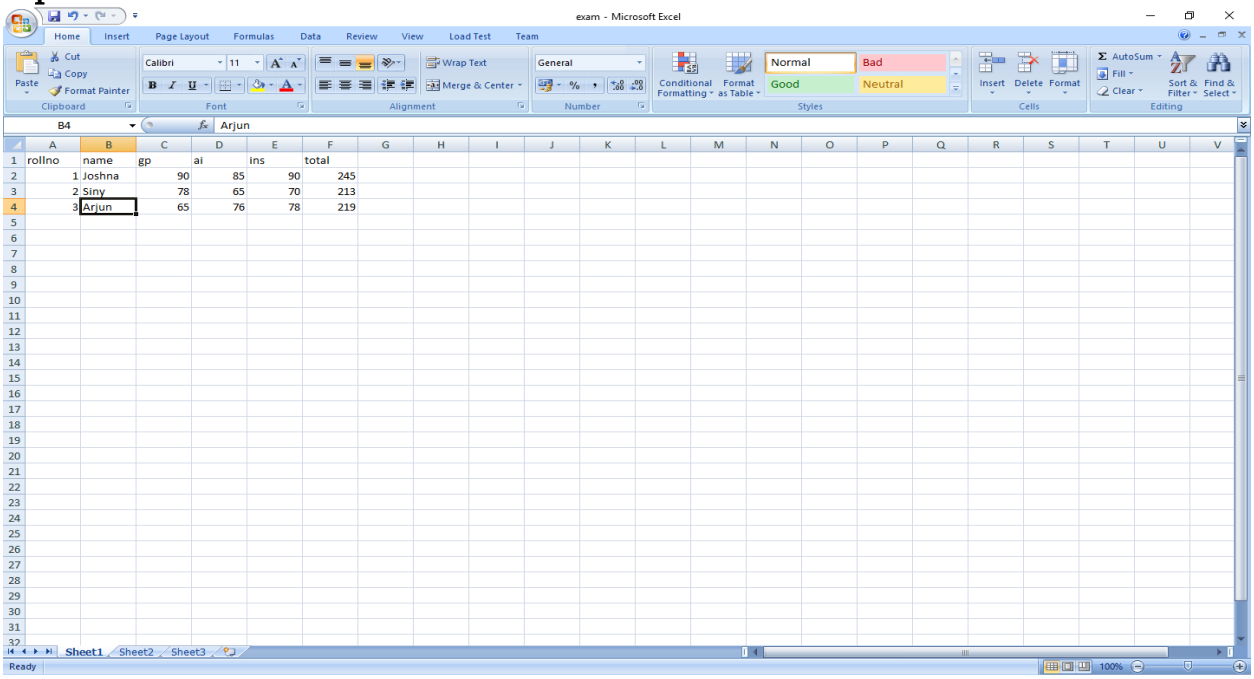

joshna1 [Compatibility Mode] - Microsoft Excel
Home
Insert
Page Layout
Formulas
Data
Review
View
Load Test
Team
Close
Paste
Cut
Copy
Format Painter
Clipboard
Arial
10
Font
Wrap Text
Merge & Center
Alignment
General
Number
Conditional Formatting
Format as Table
Normal
Bad
Good
Neutral
Styles
Insert
Delete
Format
Cells
AutoSum
Fill
Clear
Sort & Filter
Find & Select
Editing
B4
Arjun
rollno name gp ai ins total Result
1 Joshna 90 85 90 245 pass
2 Siny 78 65 70 213 pass
3 Arjun 65 76 78 219 pass
result1
Ready
100%
Type here to search
ENG
08:03
27-08-2019

6.Write and test a program to select the number of students who have scored more than 60 in any one subject (or all subjects).

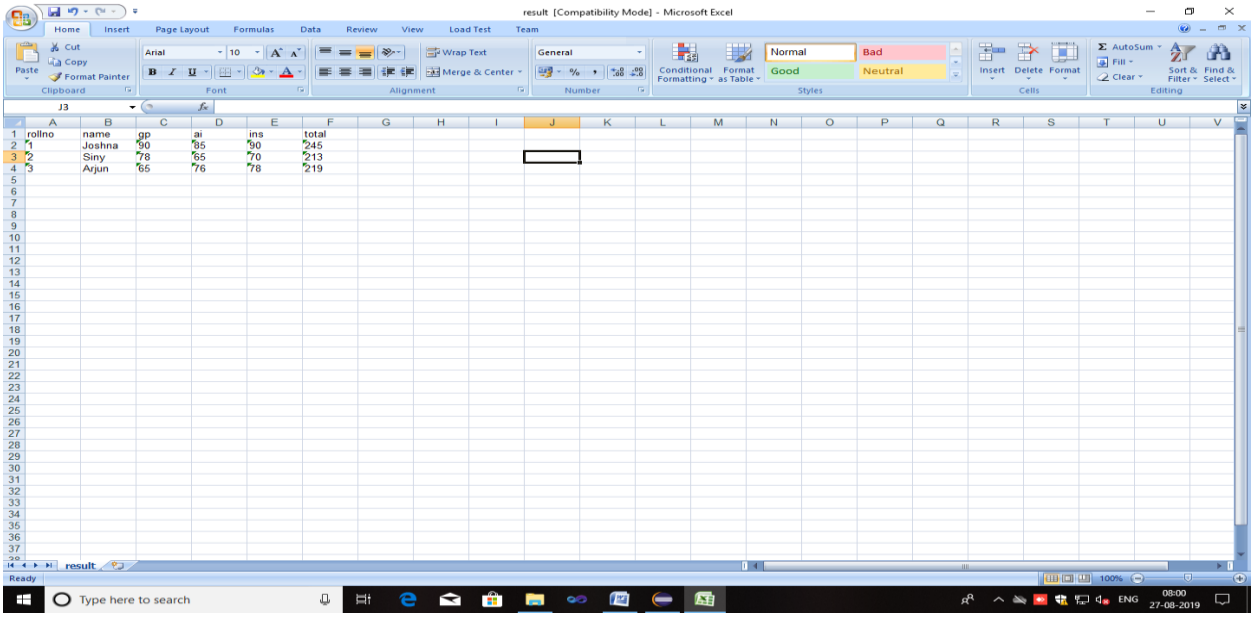
```
import jxl.*;
import jxl.read.*;
import jxl.write.*;
import java.io.*;
import org.testng.annotations.Test;
public class countstuds {
	@Test
	public void testImportexport1() throws Exception {
	FileInputStream fi = new FileInputStream("E:\\Selenium\\exam.xls");
	Workbook w = Workbook.getWorkbook(fi);
	Sheet s = w.getSheet(0);
	String a[][] = new String[s.getRows()][s.getColumns()];
	FileOutputStream fo = new FileOutputStream("E:\\Selenium\\result.xls");
	WritableWorkbook wwb = Workbook.createWorkbook(fo);
	WritableSheet ws = wwb.createSheet("result", 0);
	int c=0;
	for (int i = 0; i < s.getRows(); i++) {
	for (int j = 0; j < s.getColumns(); j++)
	{
	if(i >= 1)
	{	String b= new String();
	b=s.getCell(3,i).getContents();
	int x= Integer.parseInt(b);
	if( x < 60)
	{	c++;
	break;		}
	}
	a[i][j] = s.getCell(j, i).getContents();
	Label l2 = new Label(j, i-c, a[i][j]);
	ws.addCell(l2);
	}  }
	wwb.write();
```

```
        wwb.close();
        }   }
```

Input:-



Output:-

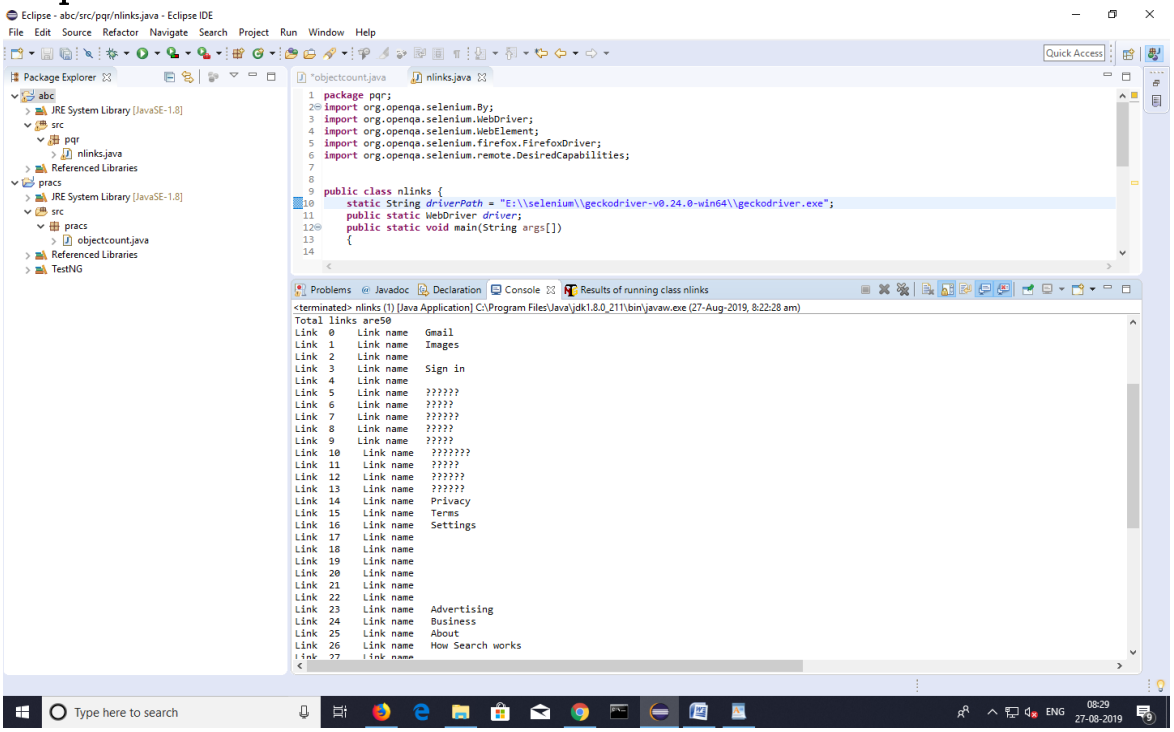


7.Write and test a program to provide total number of objects present / available on the page.

```
package pqr;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.WebElement;

import org.openqa.selenium.firefox.FirefoxDriver;

import org.openqa.selenium.remote.DesiredCapabilities;

public class nlinks {

	static String driverPath = "E:\\selenium\\geckodriver-v0.24.0-
win64\\geckodriver.exe";

  public static WebDriver driver;

	public static void main(String args[])

	{

		System.setProperty("webdriver.gecko.driver",driverPath);

		 DesiredCapabilities capabilities = DesiredCapabilities.firefox();

		 capabilities.setCapability("marionette",true);

		 driver= new FirefoxDriver(capabilities);

		 driver.get("http://google.com/");

java.util.List<WebElement> links = driver.findElements(By.tagName("a"));
```

```
 System.out.println("Total links are"+links.size());
for (int i = 0; i<links.size(); i=i+1)
{
System.out.println("Link  "+ i + "    Link name   "+ links.get(i).getText());
}
} }
```

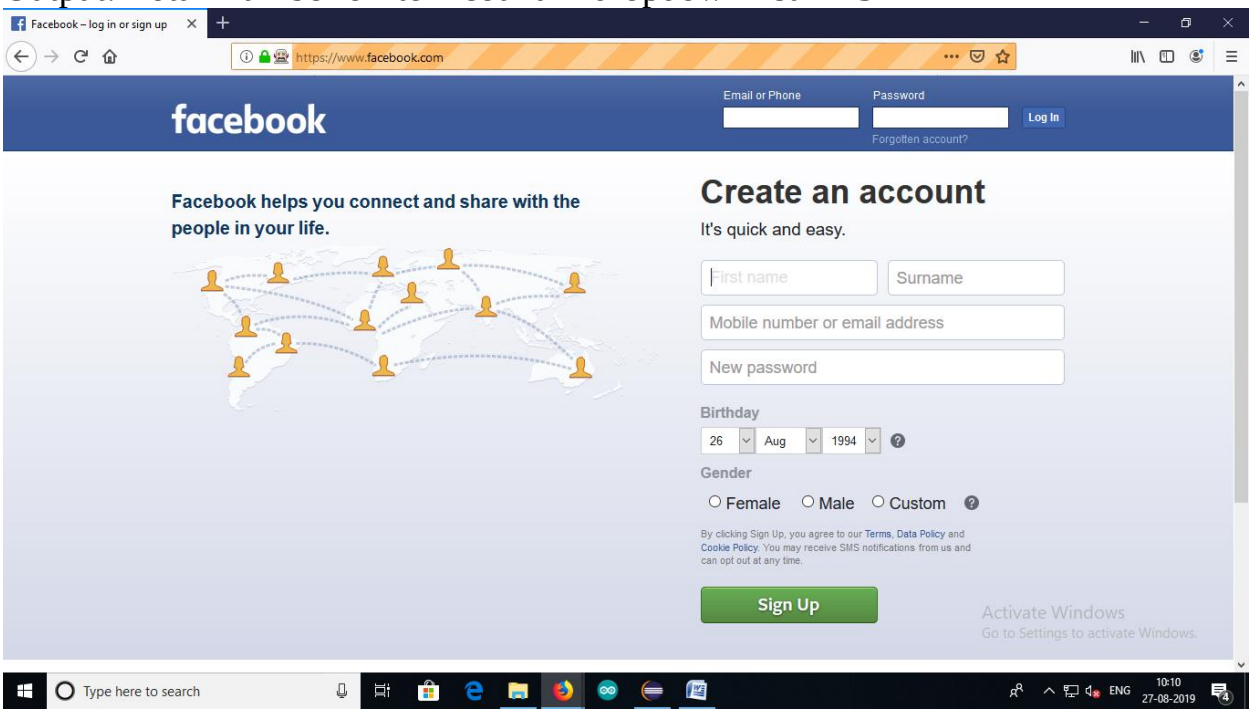
Output:-Total Links are 50



8.Write and test a program to get the number of items in a list / combo box.

```
package combo;
import java.util.List;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.support.ui.Select;
public class combocount{
public static void main(String[] args) {

System.setProperty("webdriver.gecko.driver","C:\\Selenium\\geckodriver-v0.24.0-win64\\geckodriver.exe");


//Define the Webdriver for Browser i.e. Firefox
WebDriver driver = new FirefoxDriver();

//Open the URL (Website)
driver.get("http://facebook.com/");

//Assign and Select the dropdown list element
Select selectDropdown = new Select(driver.findElement(By.id("month")));

//Get all the option from dropdown list and assign into List
List<WebElement> listOptionDropdown = selectDropdown.getOptions();

// Count the item dropdown list and assign into integer variable
int dropdownCount = listOptionDropdown.size();

//Print the total count of dropdown list using integer variable
System.out.println("Total Number of item count in dropdown list = "  +
dropdownCount);
} }
```

Output: Total Number of item count in dropdown list = 13



9.Design a class calculator in java,add basic arithmatic operations and using Junit test to the calculator class.

Main.java:

```
 package Caculator;
import java.util.Scanner;
public class Main {
	public static void main(String[] args) {
		Method cm = new Method();
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter first number: ");
		double first = sc.nextDouble();
		System.out.println("Enter Second number: ");
		double second = sc.nextDouble();
		System.out.println("Select methods: ");
		System.out.println("1 : +");
		System.out.println("2 : /");
		System.out.println("3 : *");
		System.out.println("4 : -");
		int choice = sc.nextInt();
		switch (choice) {
		case 1:
			System.out.println(cm.Addition(first, second));
			break;
		case 2:
			System.out.println(cm.Division(first, second));
			break;
	    case 3:
			System.out.println(cm.Multipication(first, second));
			break;
		case 4:
			System.out.println(cm.Subtraction(first, second));
			break;
		} } }
```

Method.java:

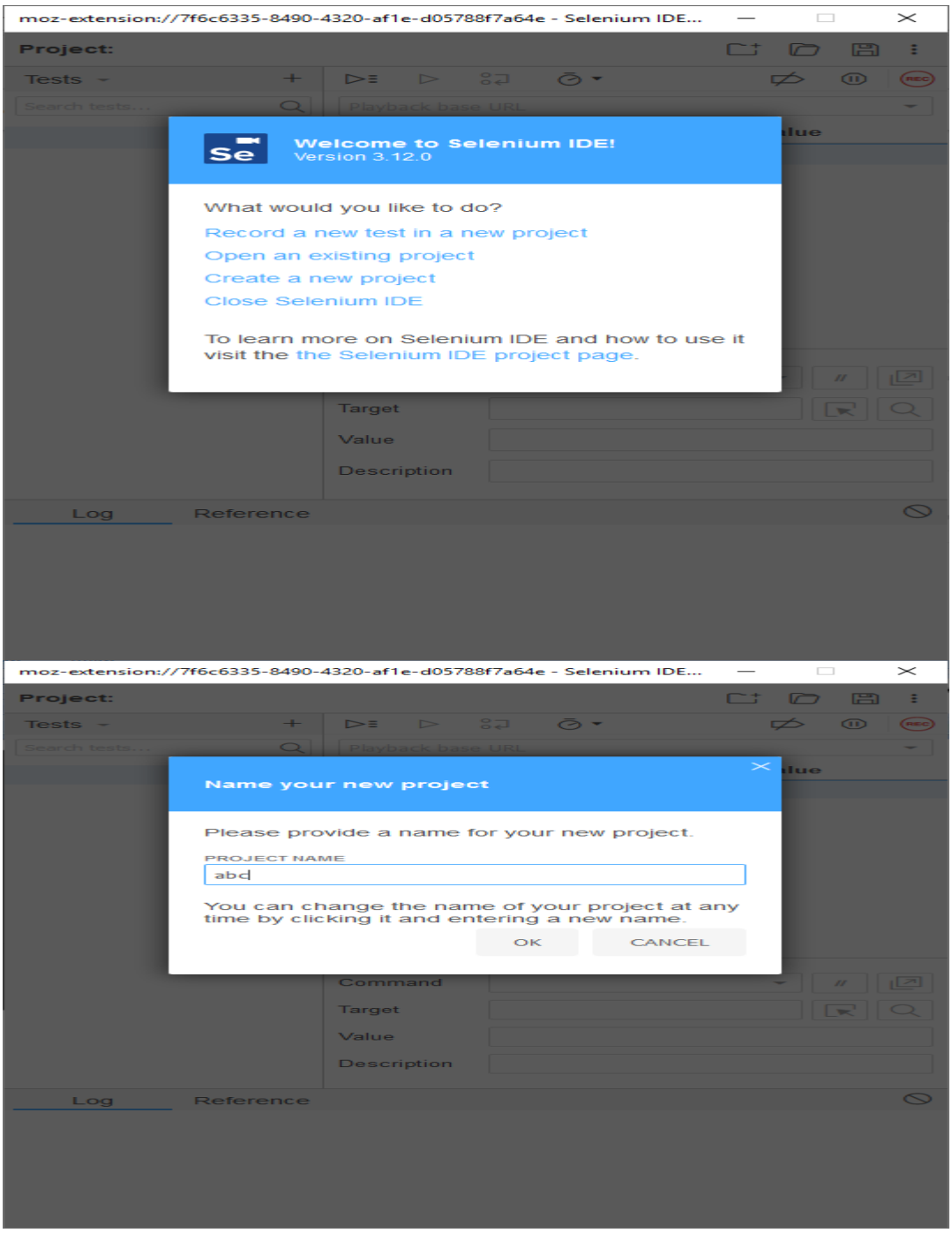
```
package Caculator;
public class Method {
```

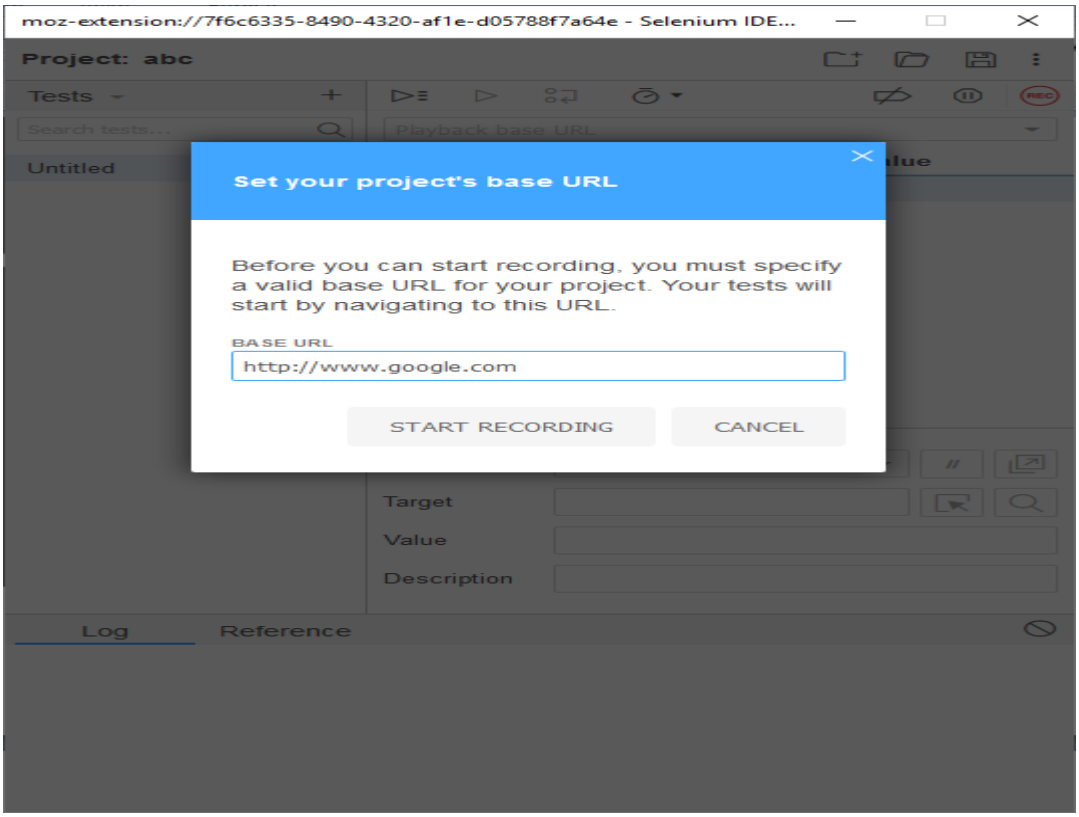
```
public double first, second, total;
public double Addition(double fnum, double snum) {
        total = fnum + snum;
                return total; }

        public double Division(double fnum, double snum) {
                total = fnum / snum;
                        return total; }
        public double Multipication(double fnum, double snum) {
                total = fnum * snum;
                        return total; }

        public double Subtraction(double fnum, double snum) {
                total = fnum - snum;
                        return total; } }
```

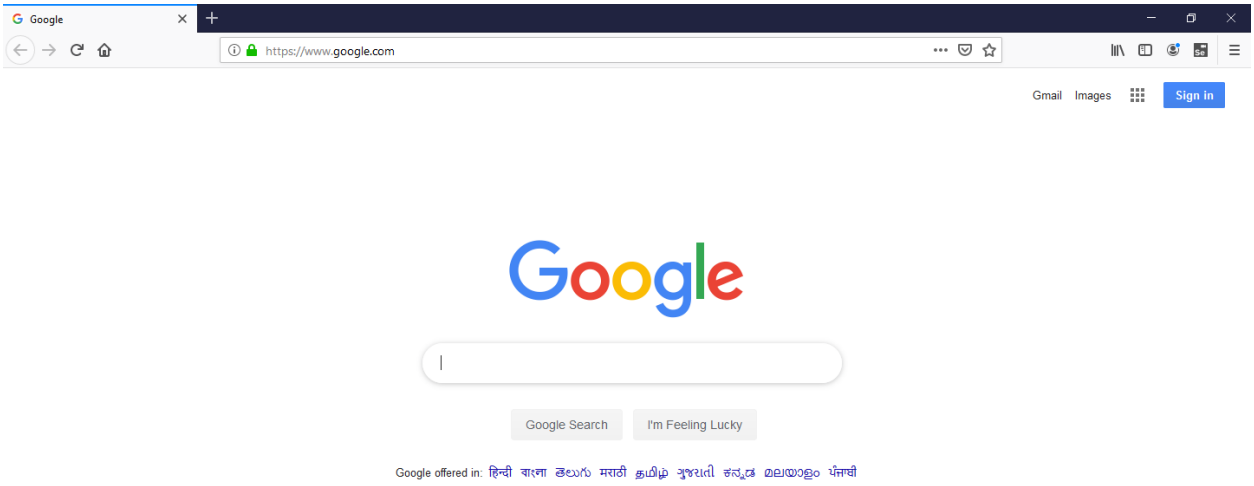
OUTPUT:

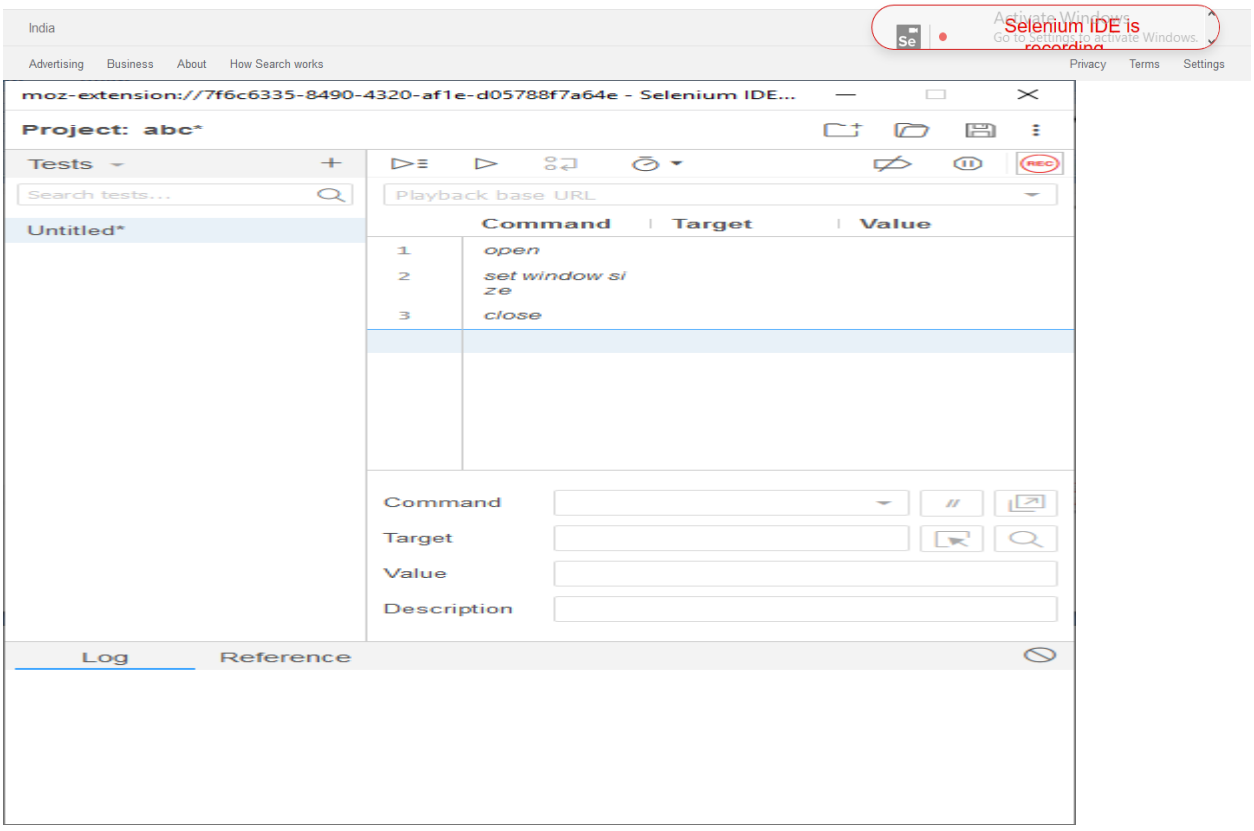
```
Enter first number:
12
Enter Second number:
17
Select methods:
1 : +
2 : /
3 : *
4 : -
1
29.0
```

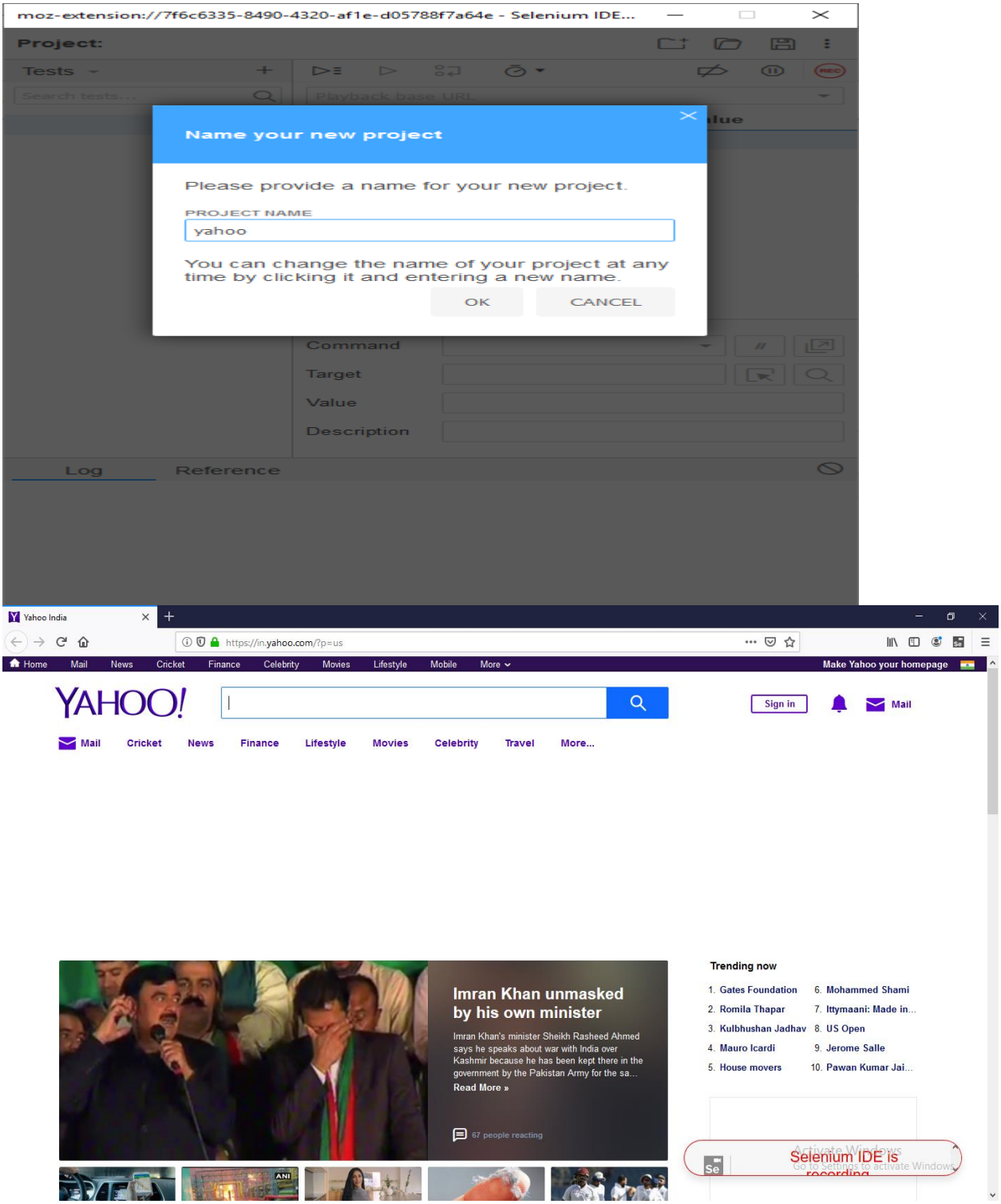
10.Conduct a test suite for any two web sites.




moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: abc
Tests
Search tests...
Playback base URL
Untitled
Set your project's base URL
Before you can start recording, you must specify a valid base URL for your project. Your tests will start by navigating to this URL.
BASE URL
http://www.google.com
START RECORDING
CANCEL
Target
Value
Description
Log
Reference


Google
https://www.google.com
Gmail
Images
Sign in
Google
Google Search
I'm Feeling Lucky
Google offered in: हिन्दी বাংলা తెలుగు मराठी தமிழ் ગુજરાતી ಕನ್ನಡ മലയാളം ਪੰਜਾਬੀ


India
Advertising
Business
About
How Search works
Privacy
Terms
Settings
Selenium IDE is recording
Activate Windows
Go to Settings to activate Windows.
moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: abc*
Tests
Search tests...
Untitled*
Playback base URL
Command
Target
Value
1
open
2
set window size
3
close
Command
Target
Value
Description
Log
Reference


moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project:
Tests
Search tests...
Playback base URL
Name your new project
Please provide a name for your new project.
PROJECT NAME
yahoo
You can change the name of your project at any time by clicking it and entering a new name.
OK
CANCEL
Command
Target
Value
Description
Log
Reference
Yahoo India
https://in.yahoo.com/?p=us
Home
Mail
News
Cricket
Finance
Celebrity
Movies
Lifestyle
Mobile
More
Make Yahoo your homepage
YAHOO!
Sign in
Mail
Mail
Cricket
News
Finance
Lifestyle
Movies
Celebrity
Travel
More...
Imran Khan unmasked by his own minister
Imran Khan's minister Sheikh Rasheed Ahmed says he speaks about war with India over Kashmir because he has been kept there in the government by the Pakistan Army for the sa...
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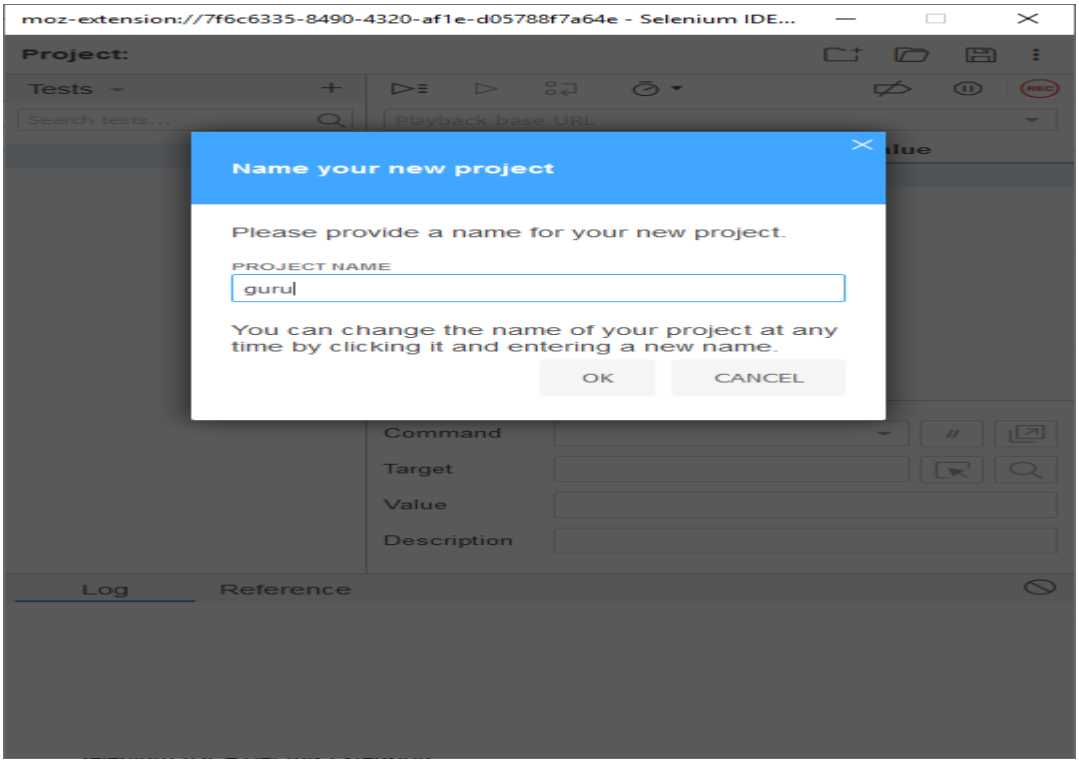
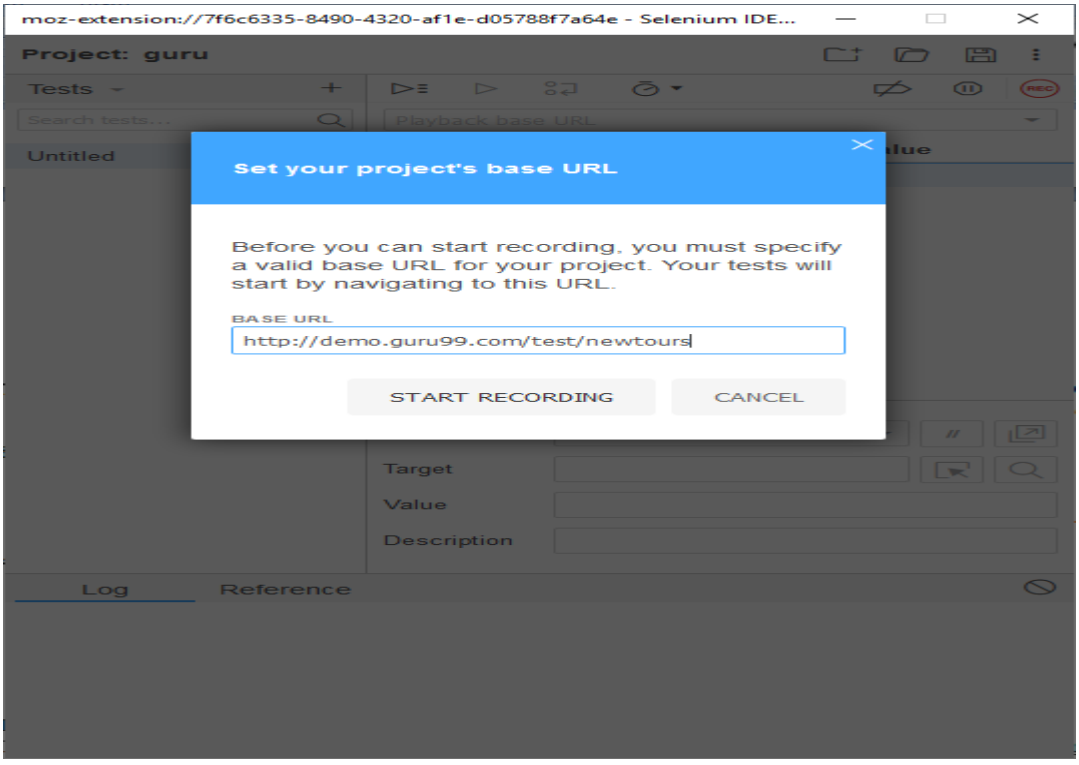
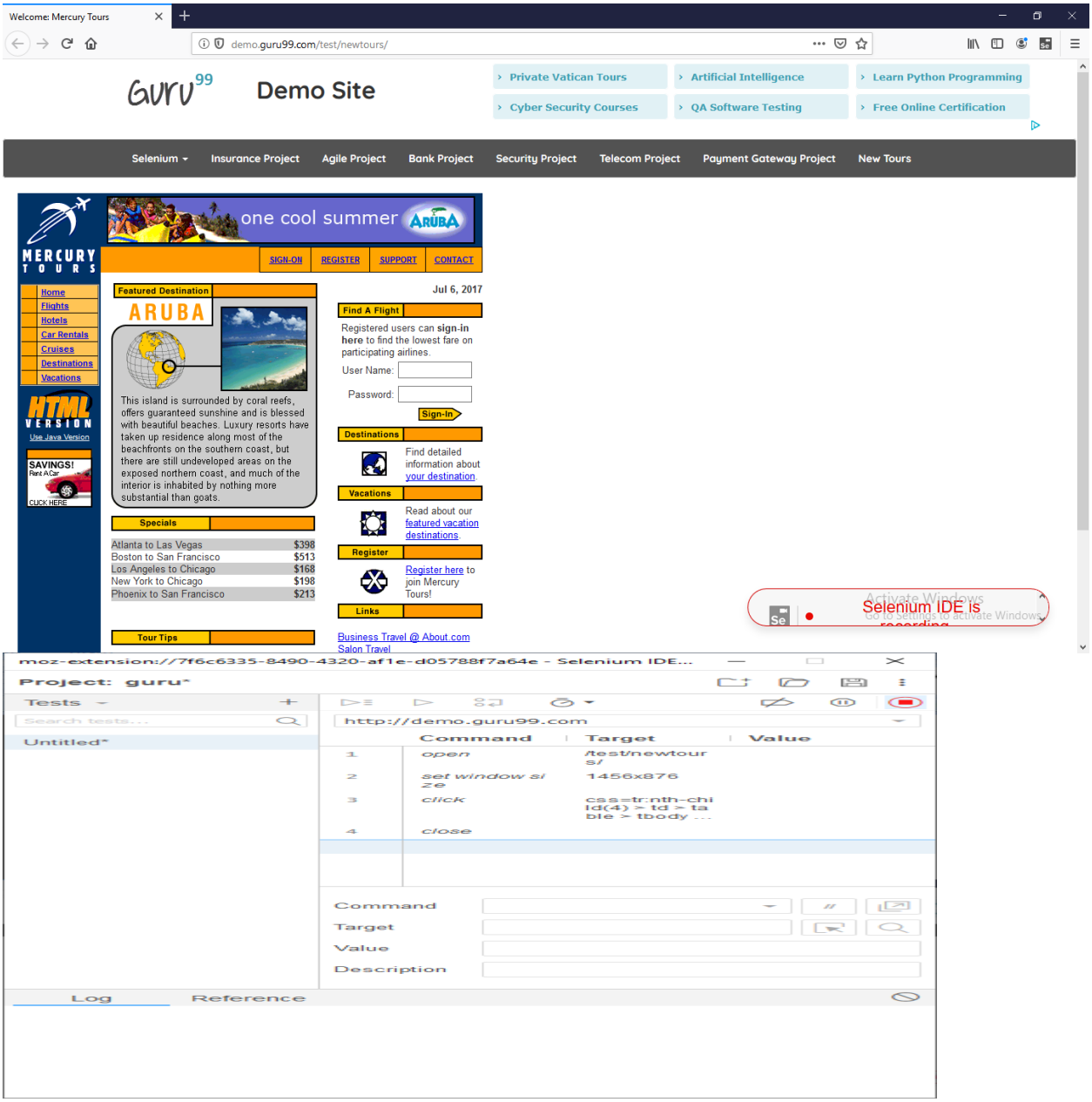
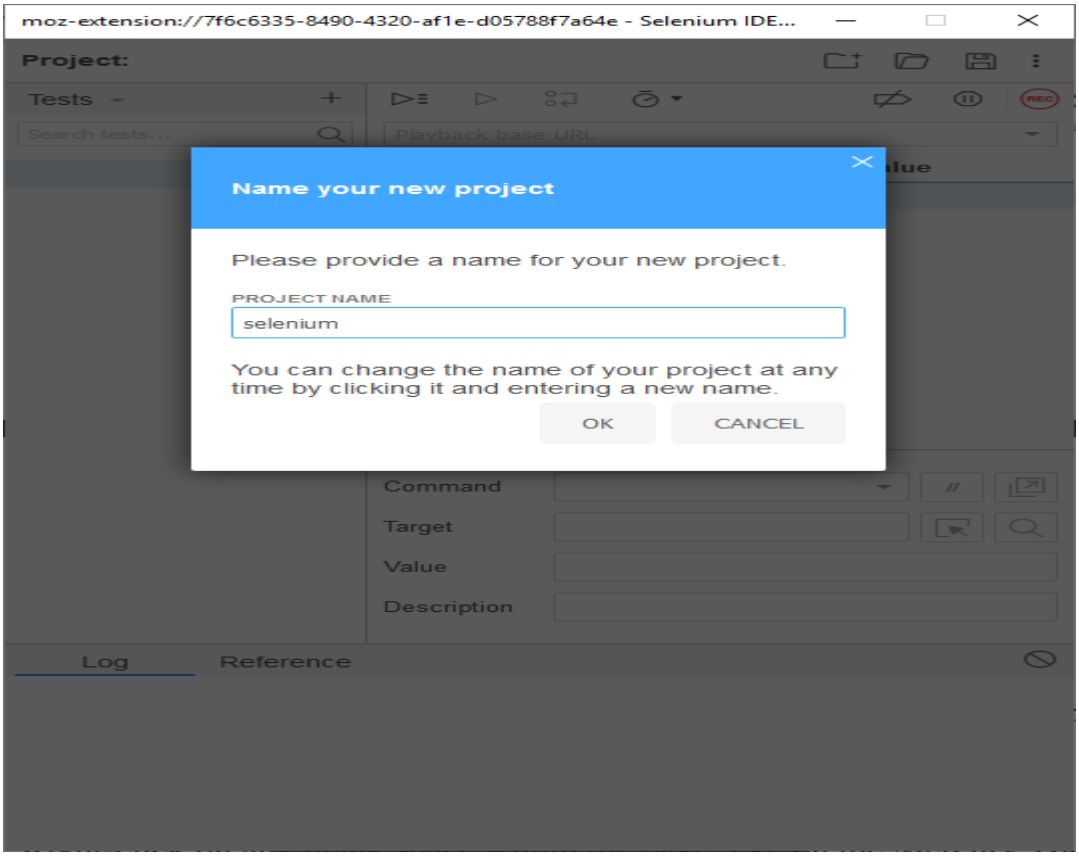
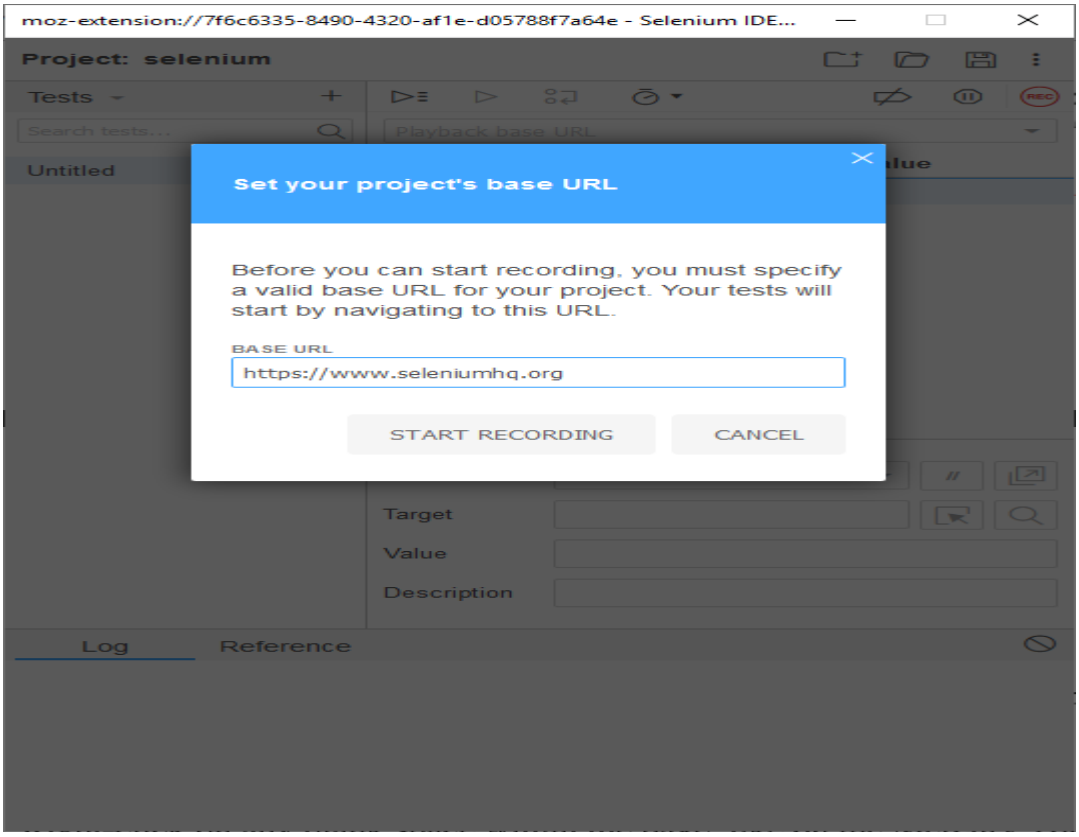
8. US Open
9. Jerome Salle
10. Pawan Kumar Jai...
Activate Windows
Go to Settings to activate Windows.
Selenium IDE is recording


moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project:
Tests
Search tests...
Playback base URL
Name your new project
Please provide a name for your new project.
PROJECT NAME
guru
You can change the name of your project at any time by clicking it and entering a new name.
OK
CANCEL
Command
Target
Value
Description
Log
Reference

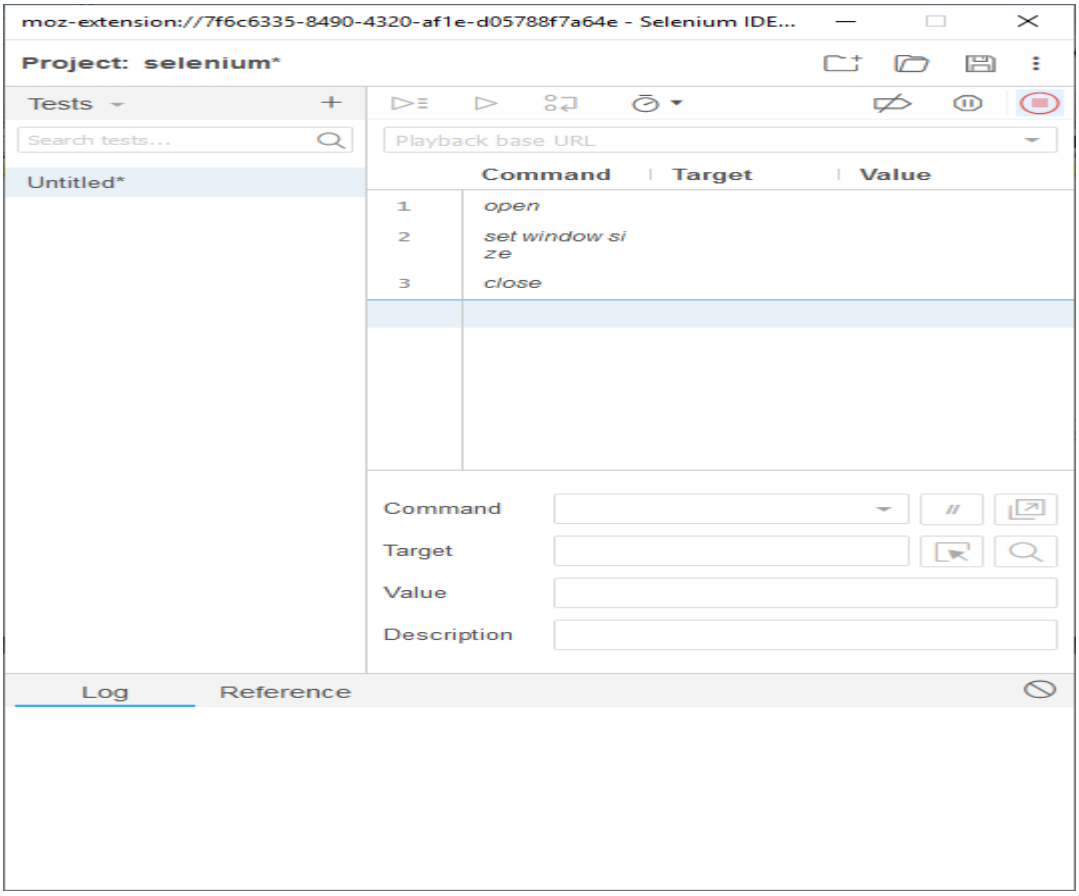

moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: guru
Tests
Search tests...
Playback base URL
Untitled
Set your project's base URL
Before you can start recording, you must specify a valid base URL for your project. Your tests will start by navigating to this URL.
BASE URL
http://demo.guru99.com/test/newtours
START RECORDING
CANCEL
Target
Value
Description
Log
Reference


Welcome: Mercury Tours
demo.guru99.com/test/newtours/
Guru99 Demo Site
Private Vatican Tours
Artificial Intelligence
Learn Python Programming
Cyber Security Courses
QA Software Testing
Free Online Certification
Selenium
Insurance Project
Agile Project
Bank Project
Security Project
Telecom Project
Payment Gateway Project
New Tours
MERCURY TOURS
one cool summer
ARUBA
SIGN-ON
REGISTER
SUPPORT
CONTACT
Home
Flights
Hotels
Car Rentals
Cruises
Destinations
Vacations
HTML VERSION
Use Java Version
SAVINGS!
Rent A Car
CLICK HERE
Featured Destination
ARUBA
This island is surrounded by coral reefs, offers guaranteed sunshine and is blessed with beautiful beaches. Luxury resorts have taken up residence along most of the beachfronts on the southern coast, but there are still undeveloped areas on the exposed northern coast, and much of the interior is inhabited by nothing more substantial than goats.
Specials
Atlanta to Las Vegas $398
Boston to San Francisco $513
Los Angeles to Chicago $168
New York to Chicago $198
Phoenix to San Francisco $213
Tour Tips
Jul 6, 2017
Find A Flight
Registered users can sign-in here to find the lowest fare on participating airlines.
User Name:
Password:
Sign-In
Destinations
Find detailed information about your destination.
Vacations
Read about our featured vacation destinations.
Register
Register here to join Mercury Tours!
Links
Business Travel @ About.com
Salon Travel
Selenium IDE is recording
moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: guru*
Tests
Search tests...
Untitled*
http://demo.guru99.com
Command
Target
Value
1 open /test/newtours/
2 set window size 1456x876
3 click css=tr:nth-child(4) > td > table > tbody ...
4 close
Command
Target
Value
Description
Log
Reference


moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project:
Tests
Search tests...
Playback base URL
Name your new project
Please provide a name for your new project.
PROJECT NAME
selenium
You can change the name of your project at any time by clicking it and entering a new name.
OK
CANCEL
Command
Target
Value
Description
Log
Reference


moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: selenium
Tests
Search tests...
Playback base URL
Untitled
Set your project's base URL
Before you can start recording, you must specify a valid base URL for your project. Your tests will start by navigating to this URL.
BASE URL
https://www.seleniumhq.org
START RECORDING
CANCEL
Target
Value
Description
Log
Reference


Selenium - Web Browser Auto
https://www.seleniumhq.org
[Standard]Tickets for [SeleniumConf London] are on sale NOW Go HERE!
SeleniumHQ
Browser Automation
edit this page
search selenium:
Go
Projects
Download
Documentation
Support
About
What is Selenium?
Selenium automates browsers. That's it! What you do with that power is entirely up to you. Primarily, it is for automating web applications for testing purposes, but is certainly not limited to just that. Boring web-based administration tasks can (and should!) be automated as well.
Selenium has the support of some of the largest browser vendors who have taken (or are taking) steps to make Selenium a native part of their browser. It is also the core technology in countless other browser automation tools, APIs and frameworks.
Which part of Selenium is appropriate for me?
Selenium WebDriver
If you want to
create robust, browser-based regression automation suites and tests
scale and distribute scripts across many environments
Then you want to use Selenium WebDriver; a collection of language specific bindings to drive a browser -- the way it is meant to be driven.
Selenium WebDriver is the successor of Selenium Remote Control which has been officially deprecated. The Selenium Server (used by both WebDriver and Remote Control) now also includes built-in grid capabilities.
Selenium IDE
If you want to
create quick bug reproduction scripts
create scripts to aid in automation-aided exploratory testing
Then you want to use Selenium IDE; a Chrome and Firefox add-on that will do simple record-and-playback of interactions with the browser.
Selenium is a suite of tools to automate web browsers across many platforms.
Selenium...
runs in many browsers and operating systems
can be controlled by many programming languages and testing frameworks.
Download Selenium
Donate to Selenium
with PayPal
Donate
Selenium IDE is recording...
Selenium project if


moz-extension://7f6c6335-8490-4320-af1e-d05788f7a64e - Selenium IDE...
Project: selenium*
Tests
Search tests...
Untitled*
Playback base URL
Command
Target
Value
1
open
2
set window size
3
close
Command
Target
Value
Description
Log
Reference