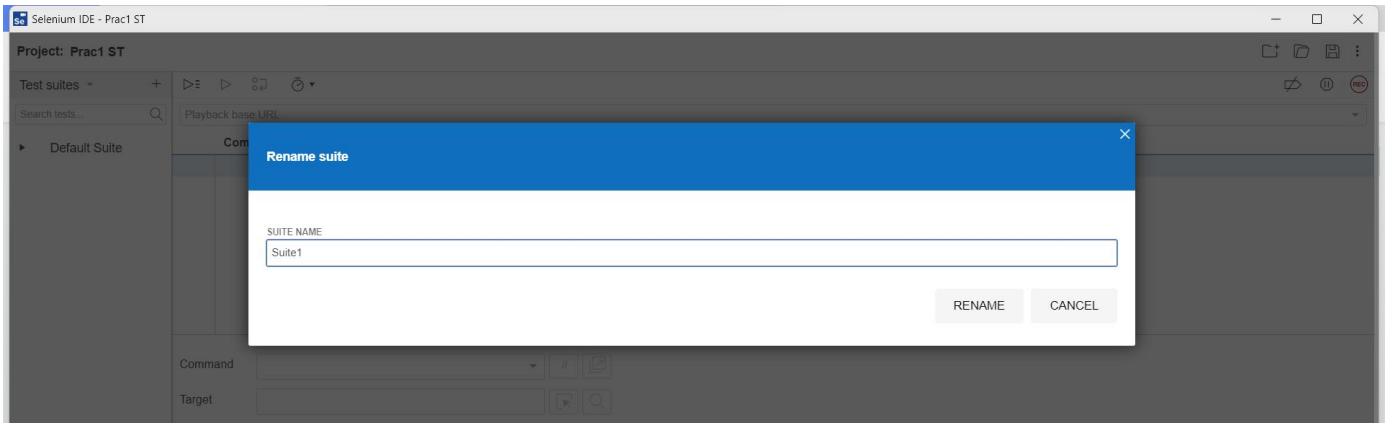
TYCS SEM 5, SUBJECT: Software Testing and Quality Assurance
Name: Navin Rajbhar
Roll no: 12

Practical 1

Aim : Install Selenium IDE; Write a test suite containing minimum 4 test cases for different formats.

STEPS:

1) Google “Selenium IDE chrome” and click on the first link. Add the “Selenium IDE” extension to your browser.
2) For testing, we need to create a test case suite, so we create the same in Selenium IDE.
3) Press CTRL+2 and Rename the Suite, “Suite1”



4) Add tests in the Selenium IDE, total 4 tests
5) We will use 4 different websites in each of the tests

6) For Test1:

https://www.google.com

	Command	Target	Value
1	*open*	/	
2	*set window size*	1297x816	
3	*click*	name=q	
4	*type*	name=q	abcdef
5	*send keys*	name=q	${KEY_ENTER}

7) For Test2:

https://classroom.google.com/u/0/

	Command	Target	Value
1	open	/	
2	set window size	1298x816	
3	type	id=sb_form_q	bing search
4	send keys	id=sb_form_q	${KEY_ENTER}
5	mouse over	id=desc	
6	mouse out	id=desc	
7	click	linkText=Bing	

8) For Test3:

https://classroom.google.com/u/0/

	Command	Target	Value
1	open	https://www.calculator.net/	
2	set window size	1298x816	
3	click	css=div:nth-child(1) > .scinm:nth-child(2)	
4	click	css=div:nth-child(3) > .sciop:nth-child(4)	
5	click	css=div:nth-child(3) > .scinm:nth-child(2)	
6	click	css=.scieq:nth-child(4)	

9) For Test4:

https://classroom.google.com/u/0/

	Command	Target	Value
1	✓ open	https://classroom.google.com/u/0/	
2	✓ set window size	1297x816	
3	✓ mouse over	css=.GR7QId .NMm5M	
4	✓ click	css=.gHz6xd:nth-child(2) .YVvGBb:nth-child(2)	
5	✓ close		

10) Press CTRL+2 to go to Suites and Add 4 Tests
11) Now we can run this suite which will run all the 4 tests

12) **Note** : To play a suite you must select a test case from within that suite

- ✓ Suite1*
  - ✓ test3
  - ✓ test4
  - ✓ test1*
  - ✓ test2*

	Command	Target
1	✓ open	https://www.calculator.net/
2	✓ set window size	1298x816
3	✓ click	css=div:nth-child(1) > .scinm:nth-child(2)
4	✓ click	css=div:nth-child(3) > .sciop:nth-child(4)
5	✓ click	css=div:nth-child(3) > .scinm:nth-child(2)
6	✓ click	css=.scieq:nth-child(4)

Practical 2

Aim : Conduct a test suite for any two web sites using

Selenium IDE.

1) Create a New Test Suite, we name it Suite1
2) Create two tests for two different websites
3) Test 1 (t1) :

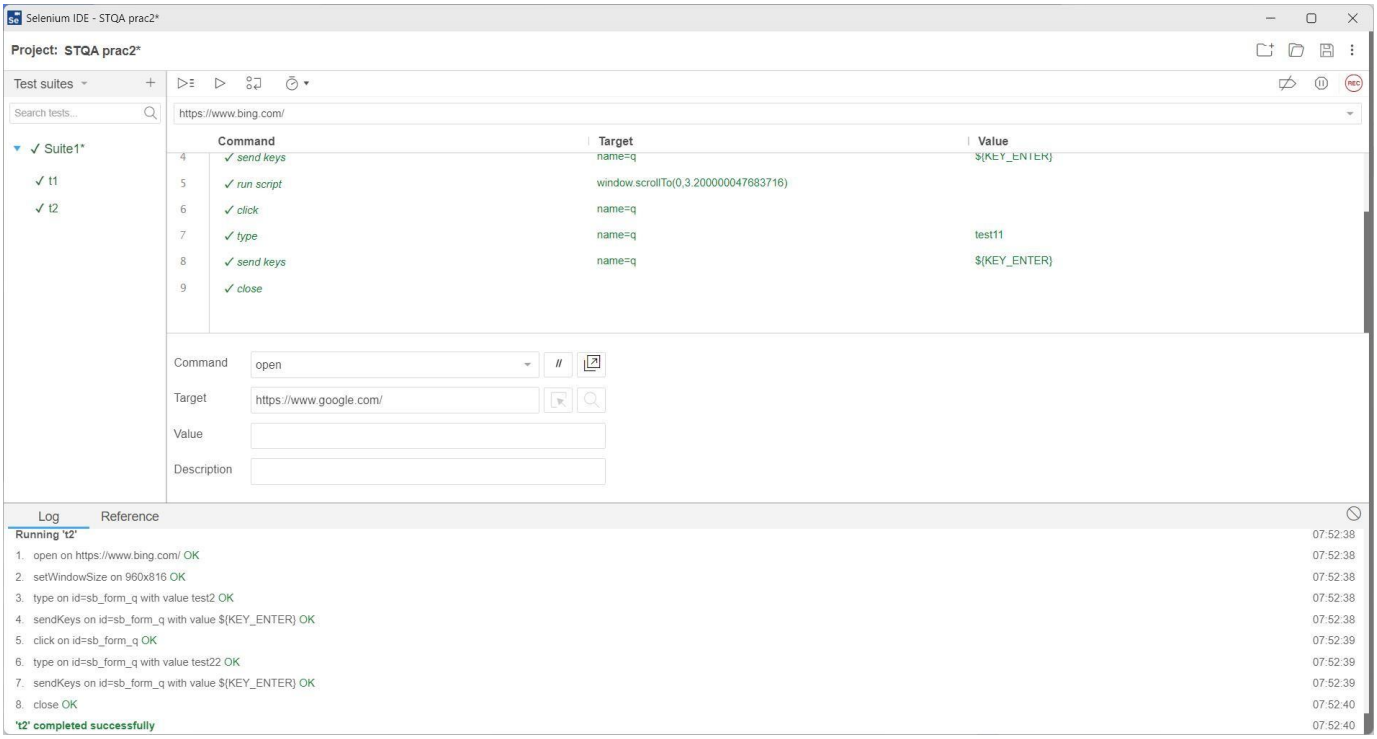
1.open on https://www.google.com/ OK07:41:27
2.setWindowSize on 960x816 OK07:41:27
3.type on name=q with value test1 OK07:41:27
4.sendKeys on name=q with value ${KEY_ENTER} OK07:41:28
5.runScript on window.scrollTo(0,3.200000047683716) OK07:41:28
6.click on name=q OK07:41:30
7.type on name=q with value test11 OK07:41:30
8.sendKeys on name=q with value ${KEY_ENTER} OK07:41:30
9.close OK

4) Test 2 (t2) :

1.open on https://www.bing.com/ OK07:48:10
2.setWindowSize on 960x816 OK07:48:11
3.type on id=sb_form_q with value test2 OK07:48:11
4.sendKeys on id=sb_form_q with value ${KEY_ENTER} OK07:48:11
5.click on id=sb_form_q OK07:48:12
6.type on id=sb_form_q with value test22 OK07:48:12
7.sendKeys on id=sb_form_q with value ${KEY_ENTER} OK07:48:12
8.close OK07:48:13

4) Press CTRL+2 to go to Suites and Add 4 Tests
5) Now we can run this suite which will run all the 4 tests

6) **Note** : To play a suite you must select a test case from within that suite



Practical 3

Aim : Install Selenium server (Selenium RC) and demonstrate it using a script in Java or to automate browser actions.

Selenium-RC

1. Introduction

Selenium-RCisthesolutionforteststhatneedmorethansimplebrowseractions and linear execution.
Selenium-RCusesthefullpowerofprogramminglanguagestocreatemore complextestslikereadingandwritingfiles,queryingadatabase,emailingtest results.
You'llwanttouseSelenium-RCwheneveryourtestrequireslogicnotsupported by Selenium-IDE.
What logic could this be? For example, Selenium-IDE does not directly support:
• condition statements
• iteration
• logging and reporting of testresults
• error handling, particularly unexpected errors
• database testing
• test case grouping
• re-execution of failed tests
• test case dependency
• screenshot capture of testfailures
Although these tasks are not supported bySelenium directly, all of them can be achieved by using programming techniques with a language-specific Selenium-RC client library.

Pre-requisites :

1) To Download "JDK":

• Visit https://www.oracle.com/technetwork/java/javase/downloads/
• Download the jdk 8 and install it.

2) To Download "Netbeans 8.2 IDE":

• Visit https://www.oracle.com/technetwork/java/javase/downloads/jdk-netbeans-jsp-3413139-esa.html
• Click "Download".
• Installation:
  Open Setup File
  It will automatically locate the JDK. Choose path, and click "Install".
• After installation, click "Launch" or open Netbeans 8.2 from START menu in Windows.

3) To Download "Selenium Server Driver and Client Driver(JAR files)":

a) For "Selenium Server Driver":

• Visit https://www.selenium.dev/downloads
• Under section "Selenium Server (Grid)", click download **Latest stable version 4.3.0**
• You'll get the executable jar file(selenium-server-standalone-4.3.0)

b) For "Selenium Java Driver":

• Visit - https://github.com/SeleniumHQ/selenium/releases/download/selenium-4.3.0/selenium-java-4.3.0.zip
• Extract the file and you'll see two jar files. From them, we'll be using this

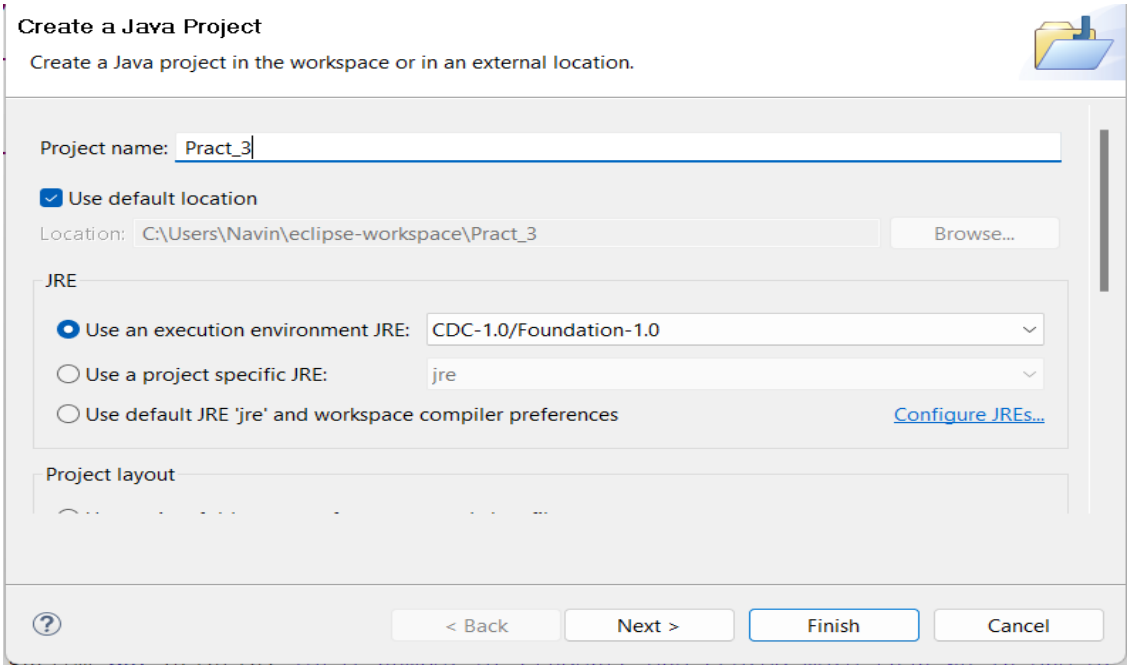
executable jar file

4) To Download “Chromium Web Driver”:

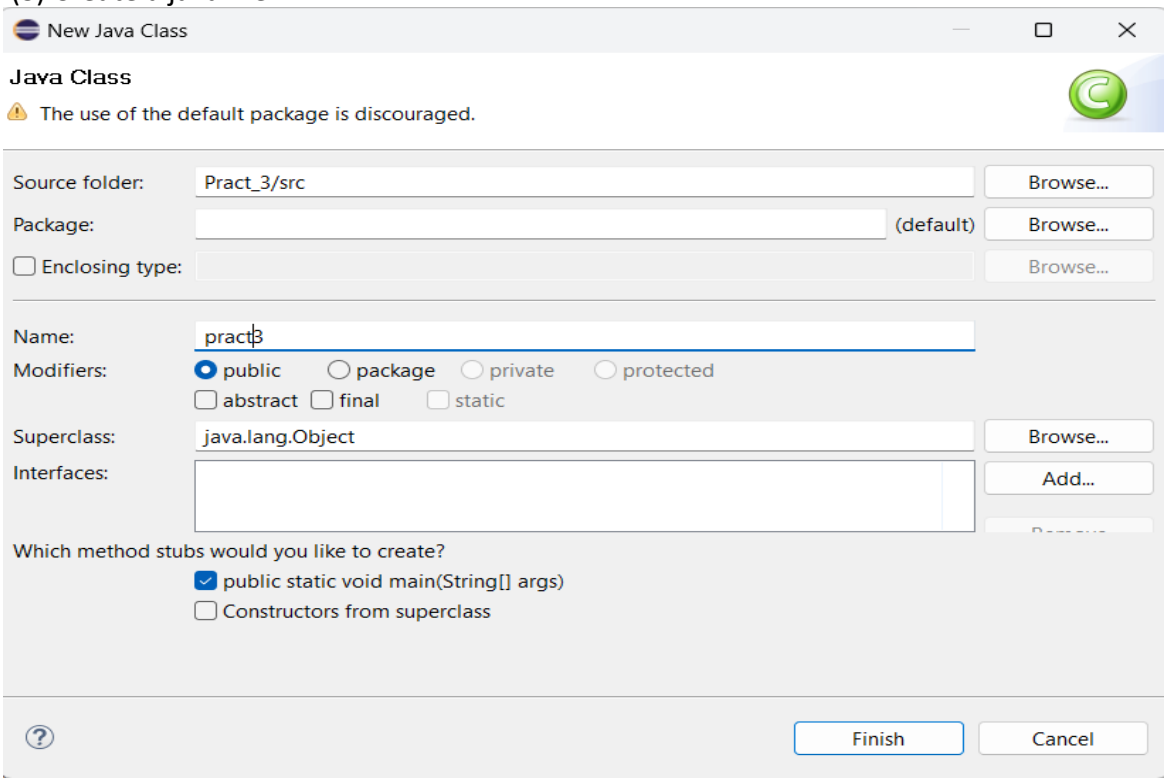
- Visit https://chromedriver.storage.googleapis.com/index.html?path=103.0.5060.134/ for 103 version
- Extract the zip file
- You’ll get the application file “chromiumdriver.exe”.

STEPS:

1) Open Eclipse. Select your workspace directory. Click Launch:
2) Create a Project(File > New > Java Project):

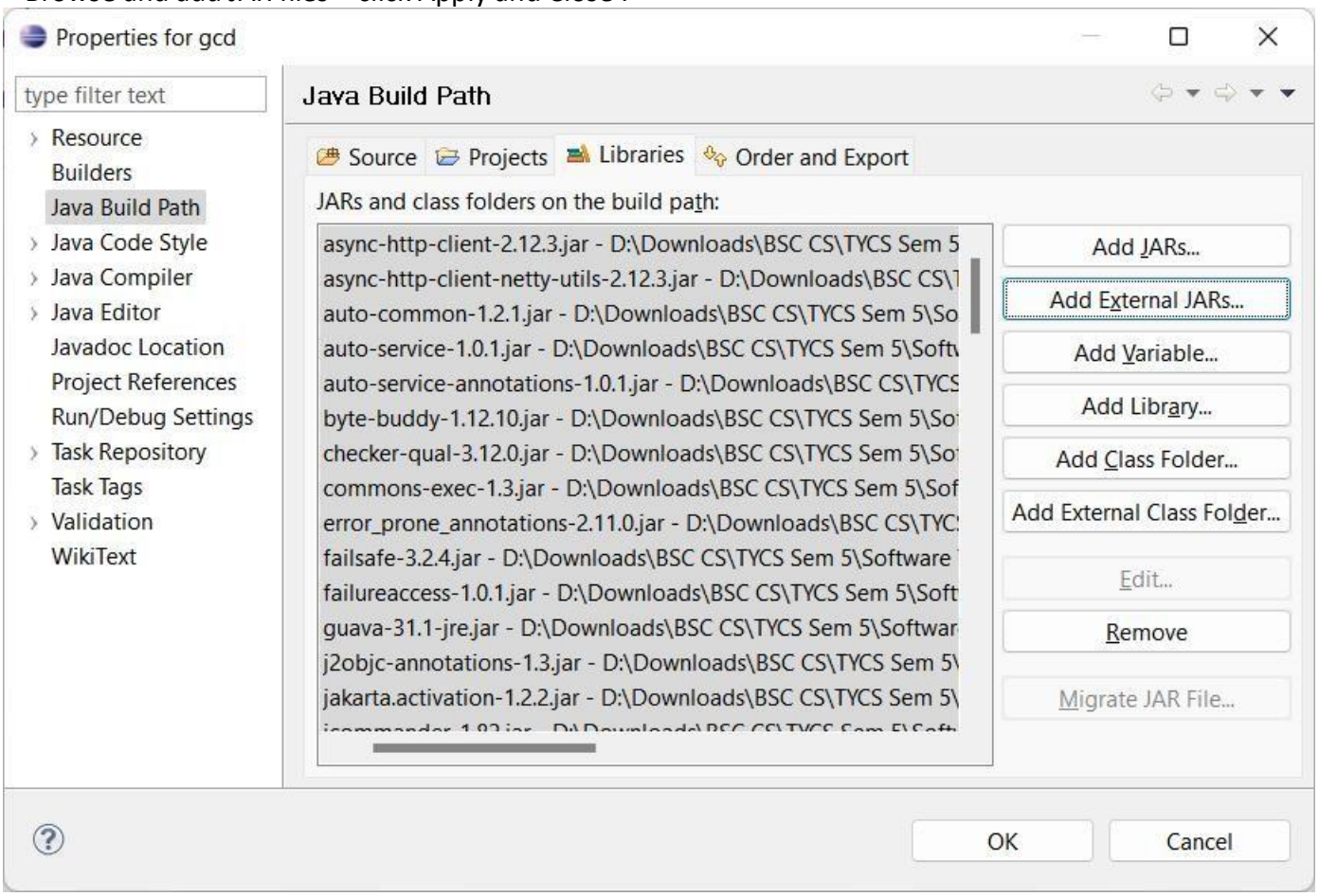


(3) Create a java file:



3) Adding “Selenium Server Driver and Client Driver(JAR files)” in Eclipse IDE:

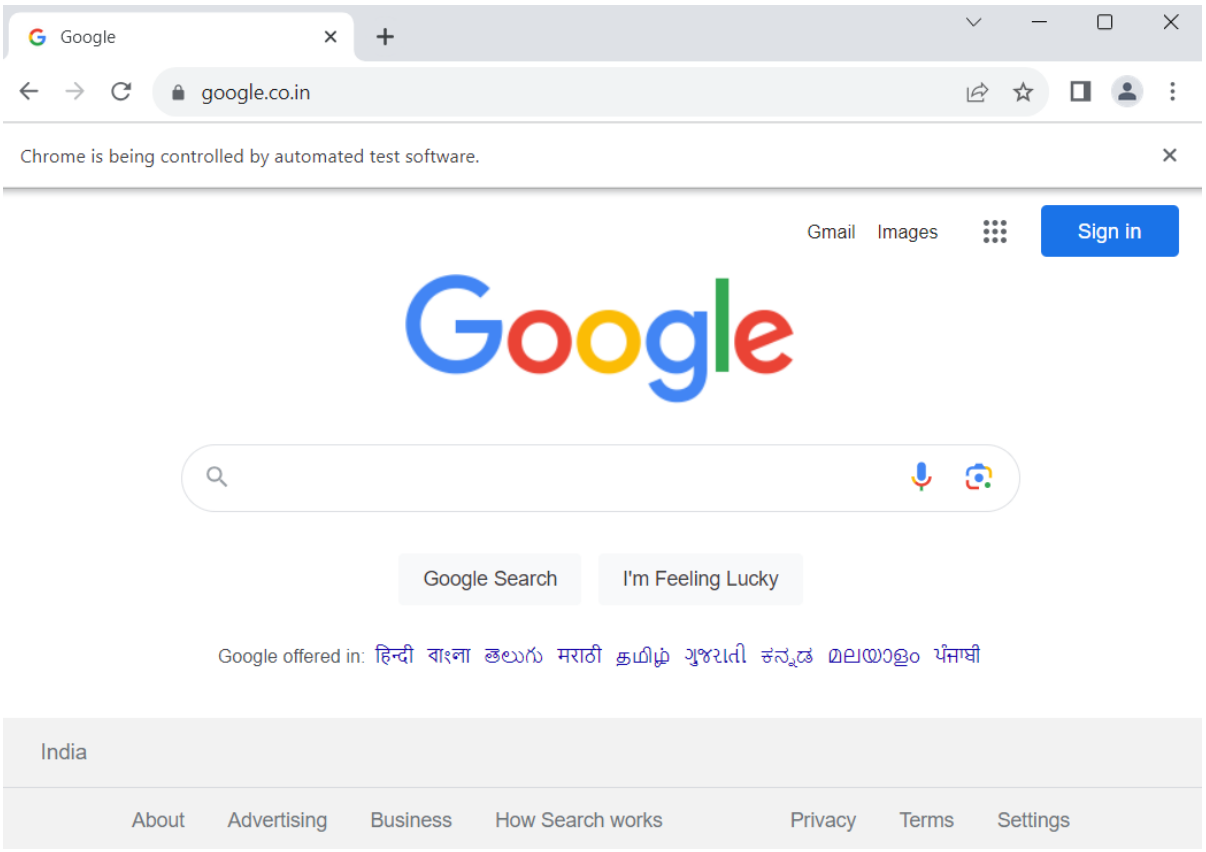
- right-click on Project Name > Build Path > Configure Build Path…
- now go under: Java Build Path > Libraries >click Add External JARs…
- Browse and add JAR files > click Apply and Close :



---(pract3.java)---

```
package pract3;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;

public class pract3 {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		WebDriver d =new ChromeDriver();

		d.get("https://www.google.co.in/");

		String u=d.getCurrentUrl();

		if(u.equals("https://www.google.co.in/")) {
			System.out.println("Pass test case");
		}
		else {
			System.out.println("Failed test case");
		}


	}
```

Output:


Google
google.co.in
Chrome is being controlled by automated test software.
Gmail
Images
Sign in
Google
Google Search
I'm Feeling Lucky
Google offered in: हिन्दी বাংলা తెలుగు मराठी தமிழ் ગુજરાતી ಕನ್ನಡ മലയാളം ਪੰਜਾਬੀ
India
About
Advertising
Business
How Search works
Privacy
Terms
Settings

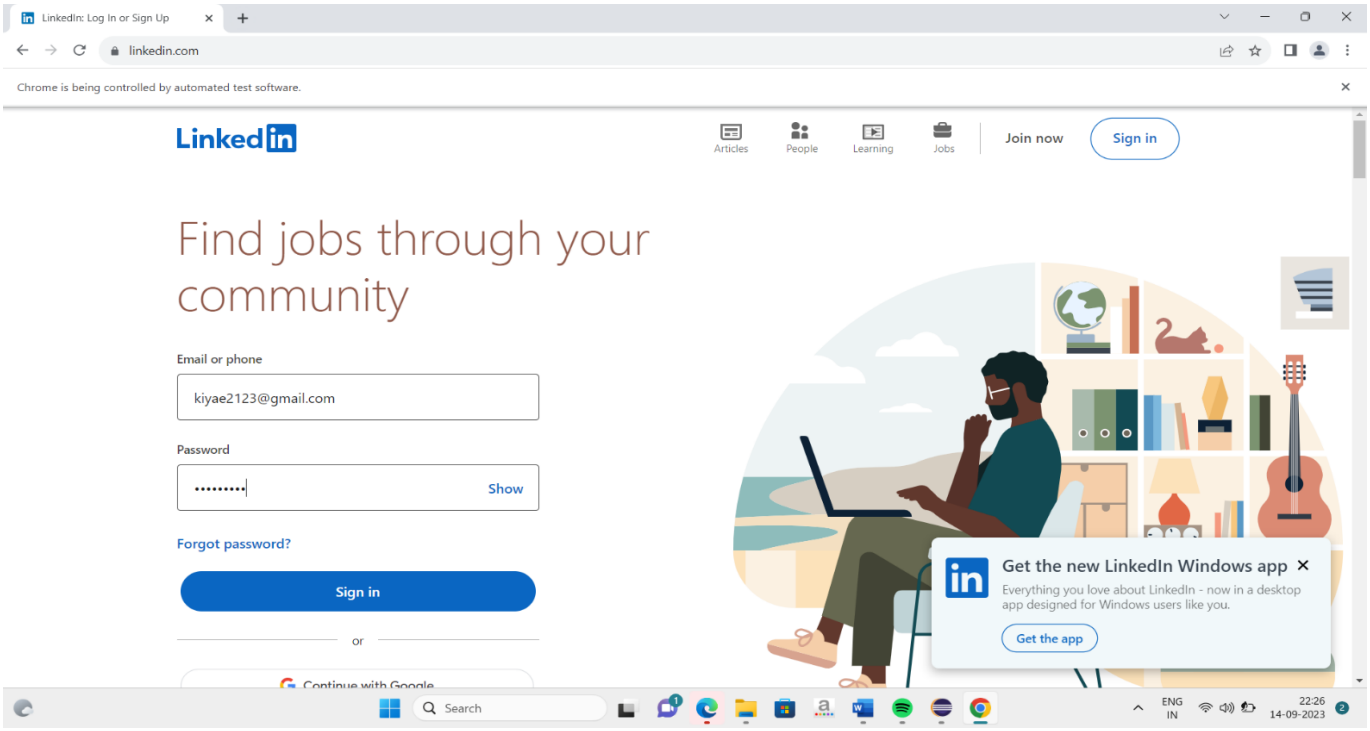
Practical 4

Aim : Install Selenium server (Selenium RC) and demonstrate it using a script in Java or to automate the login process on a specific web page. Verify successful login with appropriate assertions.

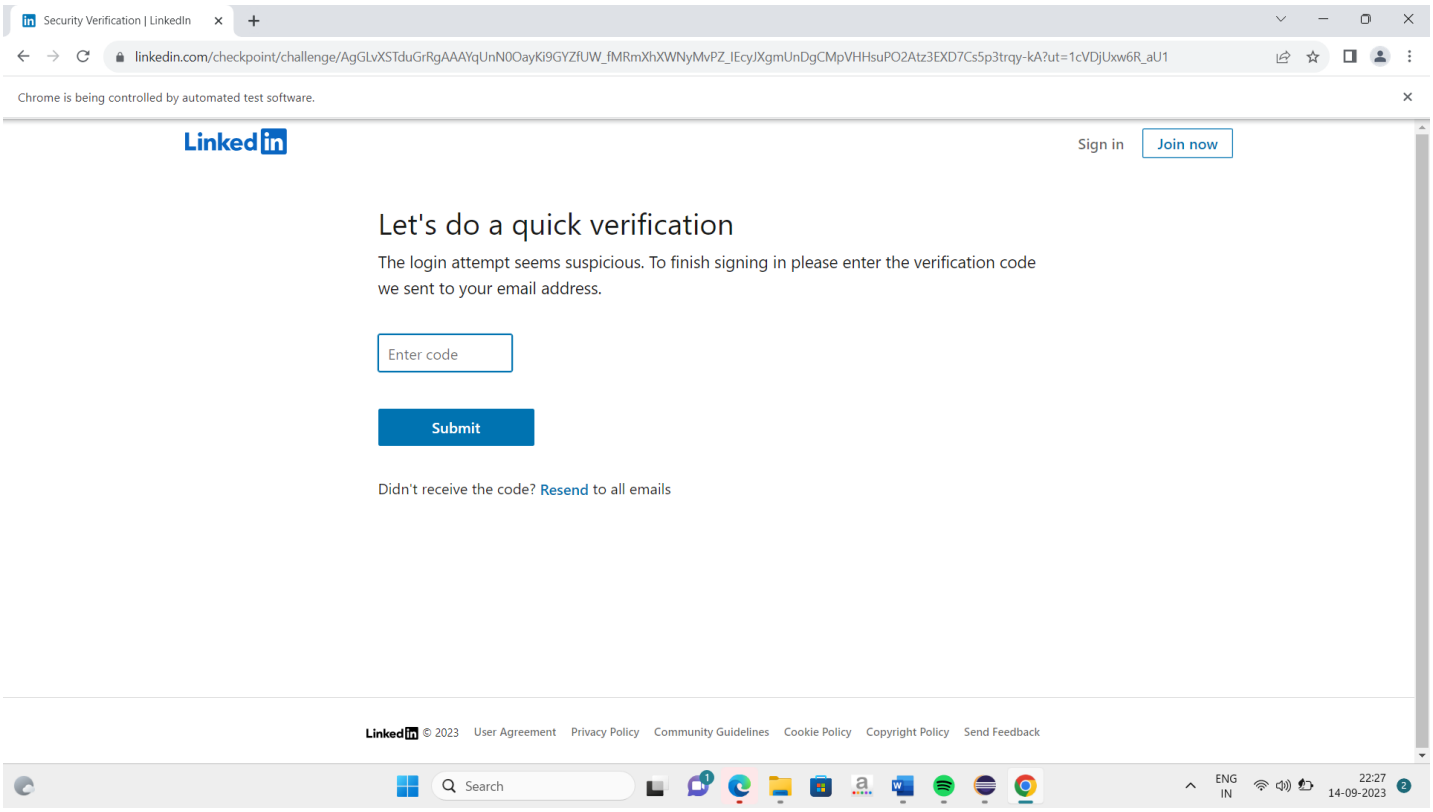
---(P4.java)---

```
package pract4;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;


public class P4 {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		WebDriver d =new ChromeDriver();

		d.get("https://www.linkedin.com/");

		d.findElement(By.id("session_key")).sendKeys("kiyae2123@gmail.com");
		d.findElement(By.id("session_password")).sendKeys("Aeroplane");
		d.findElement(By.xpath("//*[@class=\"sign-in-form__submit-
button\"]")).click();

		String u=d.getCurrentUrl();

	    if(u.equals("https://www.linkedin.com/")) {
		System.out.println("Pass test case");

		}
		else {
			System.out.println("Failed test case");
		}

	}
```

Output:



Click Sign in Button

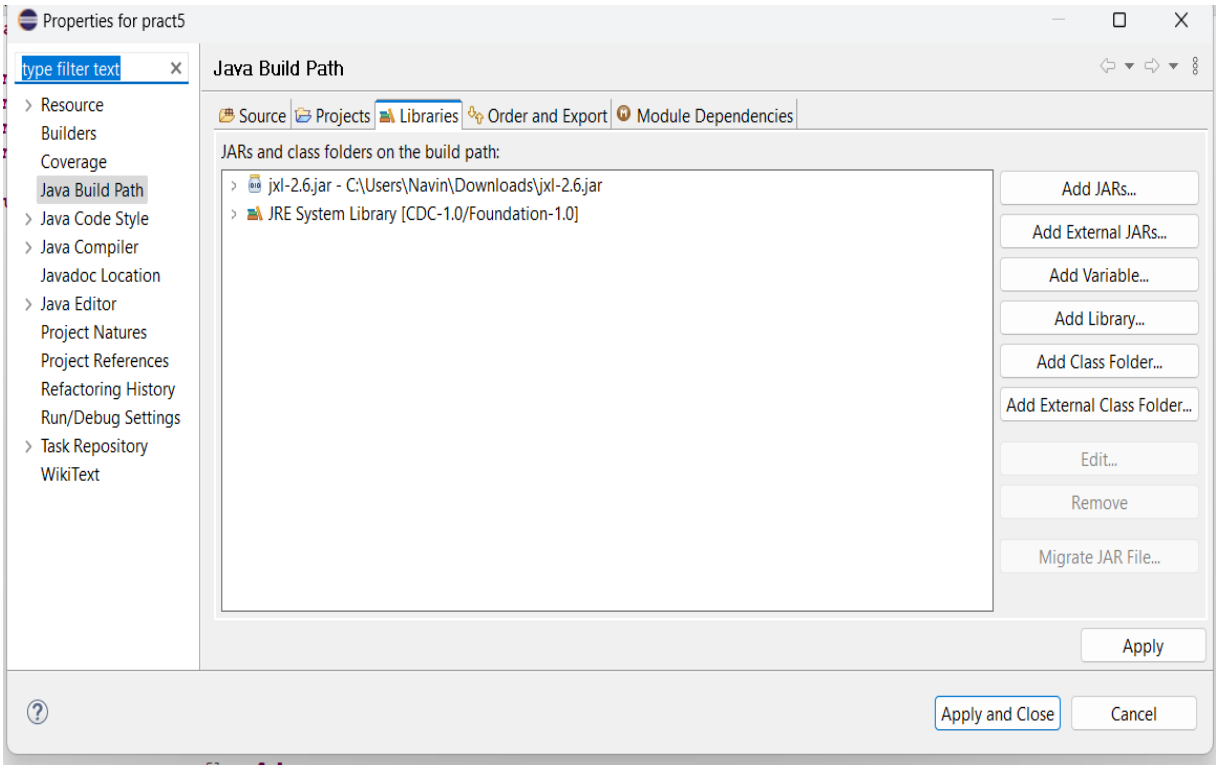


Practical 5

Aim : Write a Program using Selenium Web driver to update 10 students records in a excel file. Perform data manipulation and verification package excel reader.

1)Download from google “jxl jar file” Adding “jxl jar file” in Eclipse IDE:

- right-click on Project Name > Build Path > Configure Build Path…
- now go under: Java Build Path > Libraries >click Add External JARs…
- Browse and add JAR files > click Apply and Close :

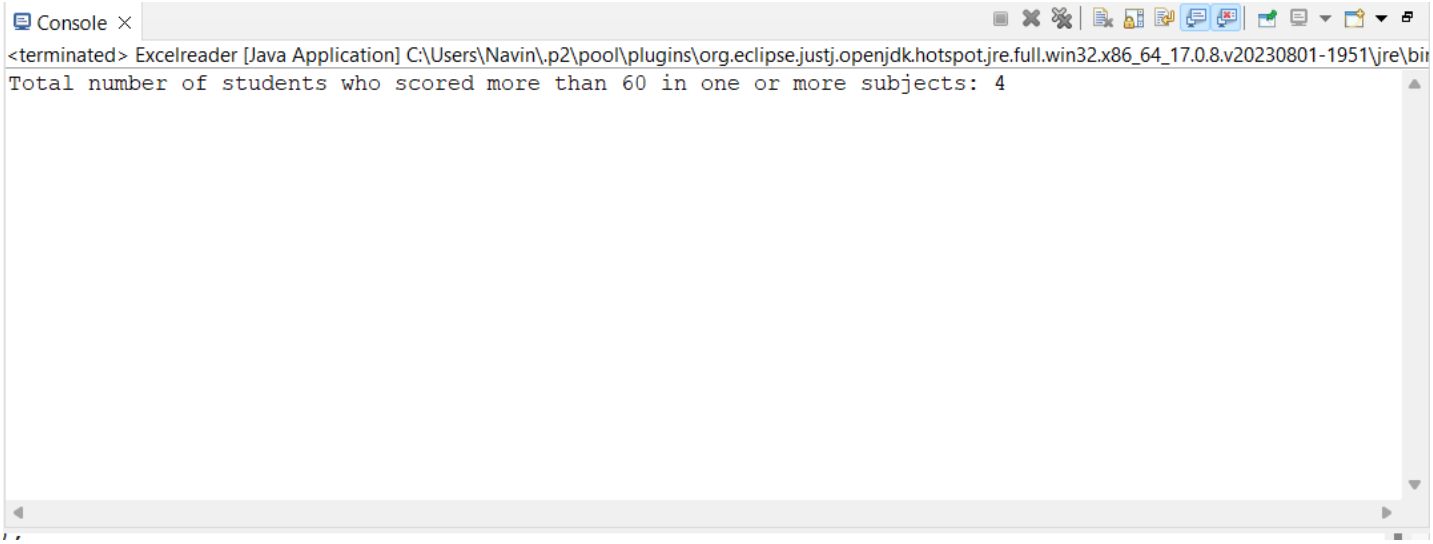


---(Excelreader.java)---

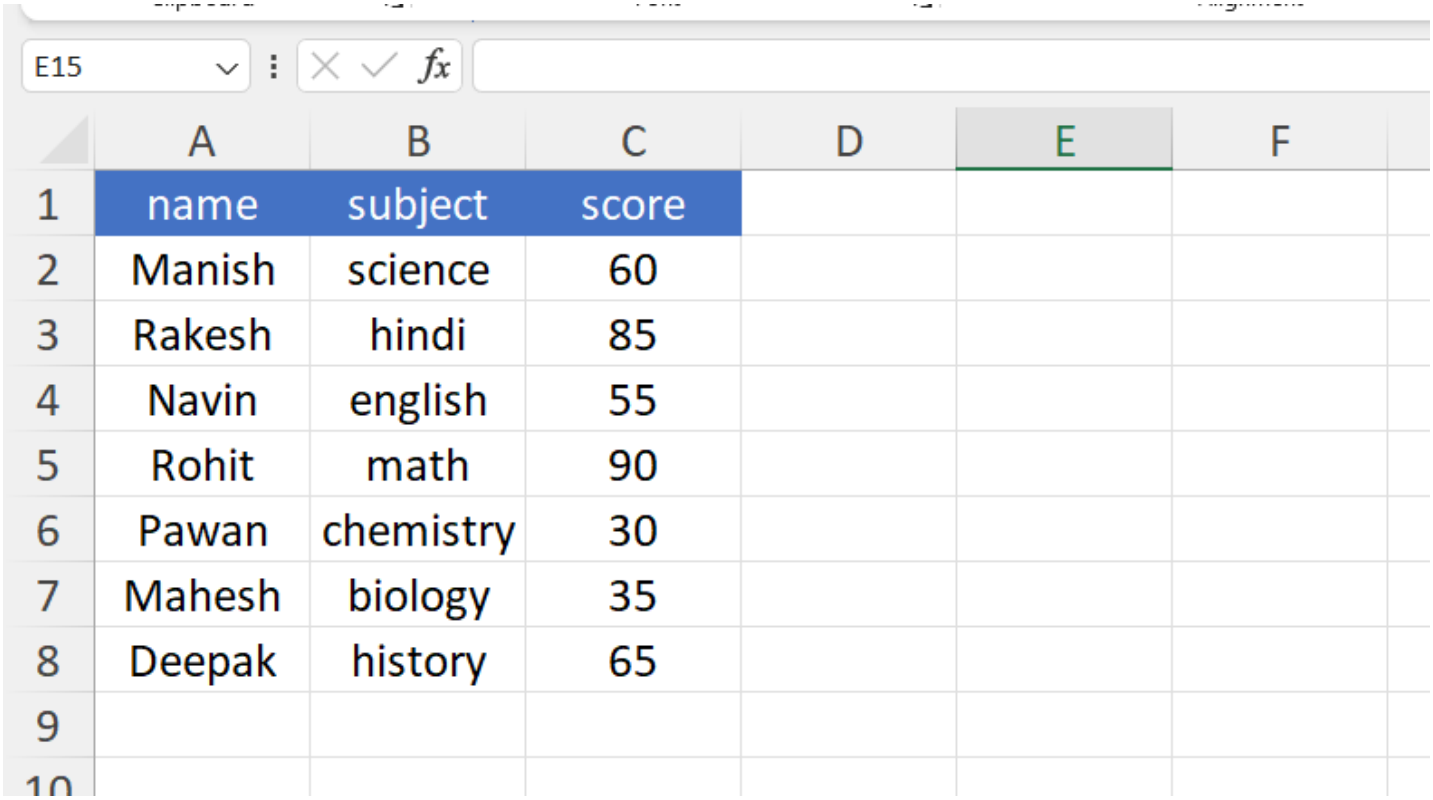
```
package pract5;

import jxl.*;
import java.io.File;
import java.io.IOException;
import jxl.read.biff.BiffException;



public class Excelreader {

      private String inputFile;

      public void setInputFile(String inputFile) {
        this.inputFile = inputFile;
        }

      public void read() throws IOException {
           File file = new File(inputFile);
          boolean flag=false;
          int count=0;
          try {
               Workbook w = Workbook.getWorkbook(file);
```

```
                Sheet sheet = w.getSheet(0);
                for (int j = 0; j < sheet.getRows(); j++){
                for (int i = 0; i < sheet.getColumns(); i++){
                Cell cell = sheet.getCell(i, j);
                if (cell.getType() == CellType.NUMBER){
                 if(Integer.parseInt(cell.getContents())>=60){
                     flag = true;
                     if(flag == true){
                     count++;
                     flag=false;
                     }
                     break;
                   }
                 }
              }
            }
            System.out.println("Total number of students who scored more than 60 in one or
more subjects: " +count);
            }
            catch (BiffException e) {
                e.printStackTrace();
            }
   }

public static void main(String[] args) throws IOException {
 Excelreader test = new Excelreader();
 test.setInputFile("D://dataset//std.xls");
 test.read();
   }
 }
```

Output:



Excel file ---(std.xls)---

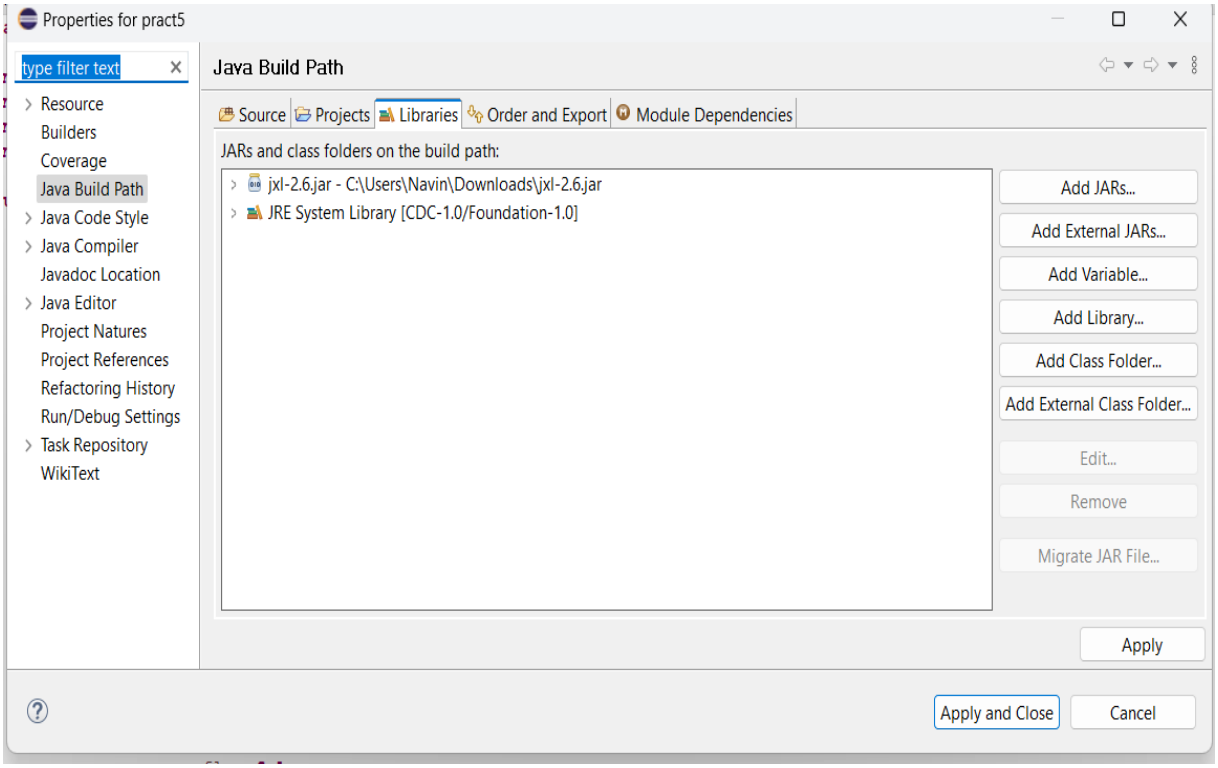

E15
A
B
C
D
E
F
1 name subject score
2 Manish science 60
3 Rakesh hindi 85
4 Navin english 55
5 Rohit math 90
6 Pawan chemistry 30
7 Mahesh biology 35
8 Deepak history 65
9
10

Practical 6

Aim : Write a Program using Selenium Web driver to select the number of student who score more than 60 in one subject. Perform data extraction and analysis.

1)Download from google “jxl jar file” Adding “jxl jar file” in Eclipse IDE:

- right-click on Project Name > Build Path > Configure Build Path…
- now go under: Java Build Path > Libraries >click Add External JARs…
- Browse and add JAR files > click Apply and Close :

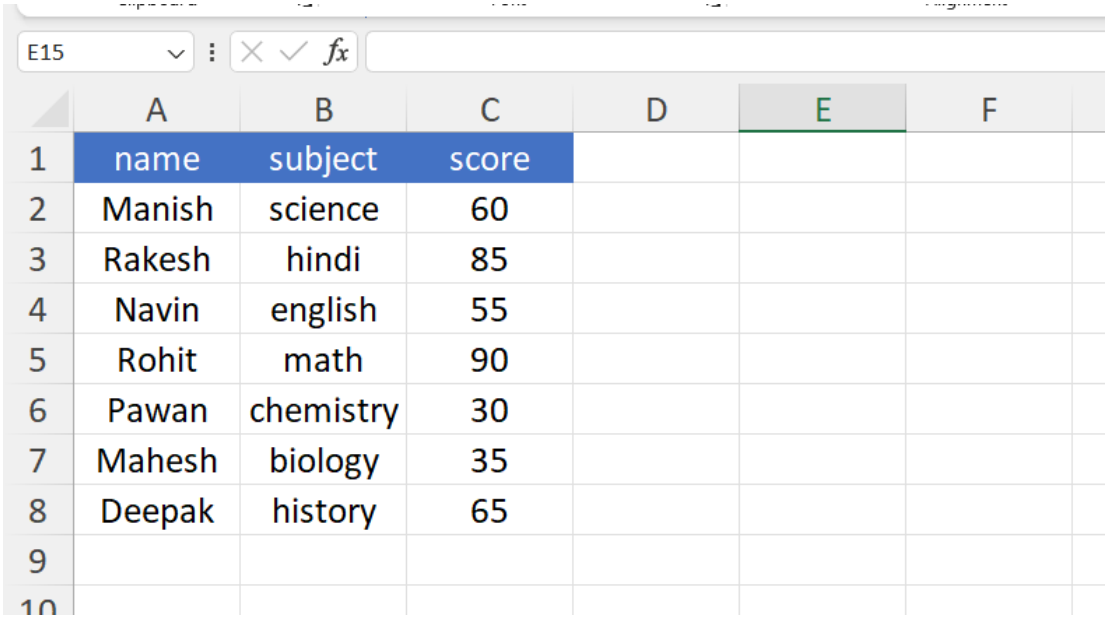


---(Countstd.java)---

```
package pract6;

import jxl.*;
import java.io.*;
import jxl.read.biff.BiffException;
import jxl.write.*;
import jxl.write.biff.RowsExceededException;



public class CountStd {
 public static void main(String[] args) throws BiffException, IOException,
RowsExceededException, WriteException {


        FileInputStream file= new FileInputStream("D://dataset//std.xls");

        Workbook w = Workbook.getWorkbook( file);

        Sheet s =w.getSheet(0);

        String a[][]= new String[s.getRows()][s.getColumns()];
```

```
        FileOutputStream output=new FileOutputStream("D://dataset//result5.xls");

        WritableWorkbook book= Workbook.createWorkbook(output);

        WritableSheet sheet=book.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 l1=new Label(j,i-c,a[i][j]);
                     sheet.addCell(l1);

           }
        }

        book.write();
        book.close();


      }

}
```

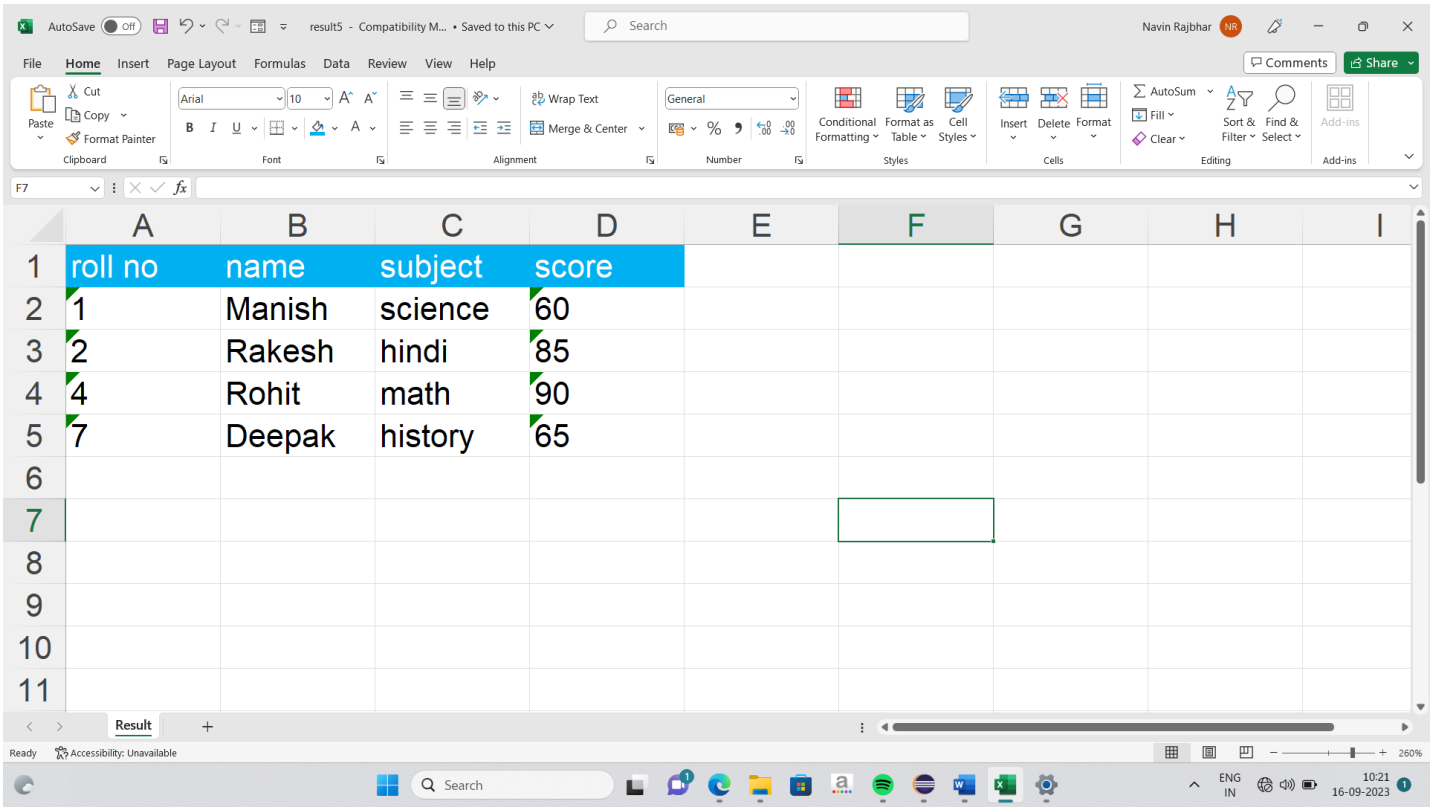
Input: std.xls file



E15

	A	B	C	D	E	F
1	name	subject	score			
2	Manish	science	60			
3	Rakesh	hindi	85			
4	Navin	english	55			
5	Rohit	math	90			
6	Pawan	chemistry	30			
7	Mahesh	biology	35			
8	Deepak	history	65			
9						
10						

Output: result5.xls file


result5 - Compatibility M... • Saved to this PC
Search
Navin Rajbhar
File Home Insert Page Layout Formulas Data Review View Help
Comments Share
Paste Cut Copy Format Painter
Arial 10
Wrap Text Merge & Center
General
Conditional Formatting Format as Table Cell Styles
Insert Delete Format
AutoSum Fill Clear
Sort & Filter Find & Select
Add-ins
Clipboard Font Alignment Number Styles Cells Editing Add-ins
F7
roll no name subject score
1 Manish science 60
2 Rakesh hindi 85
4 Rohit math 90
7 Deepak history 65
Result
Ready
Accessibility: Unavailable
260%
Search
ENG IN
10:21
16-09-2023

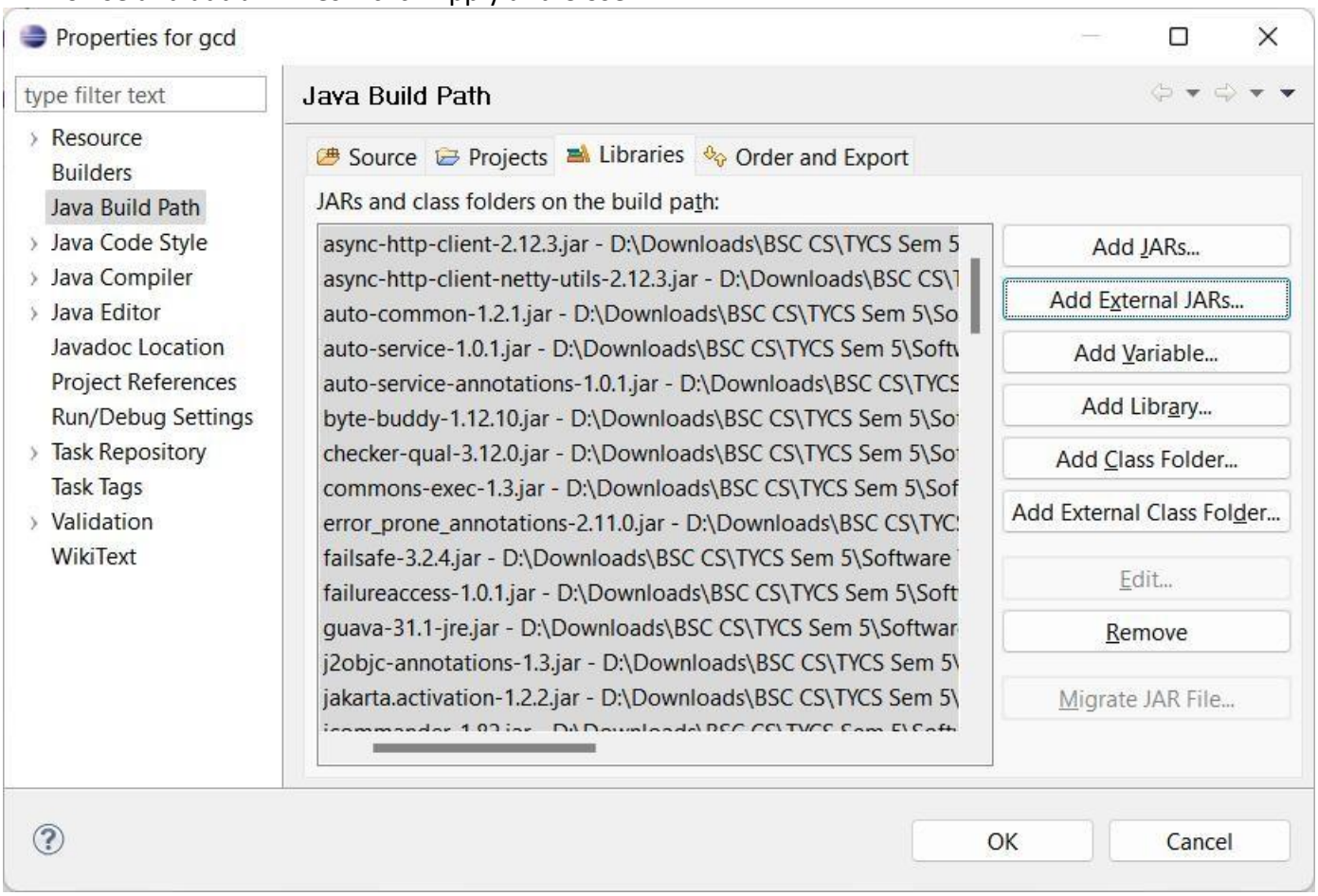
Practical 7

Aim : Write a Program using Selenium Web driver to provide total number of objects available on a web page . Perform object identification and counting .

---(nlinks.java)---

1)Adding “Selenium Server Driver and Client Driver(JAR files)” in Eclipse IDE:

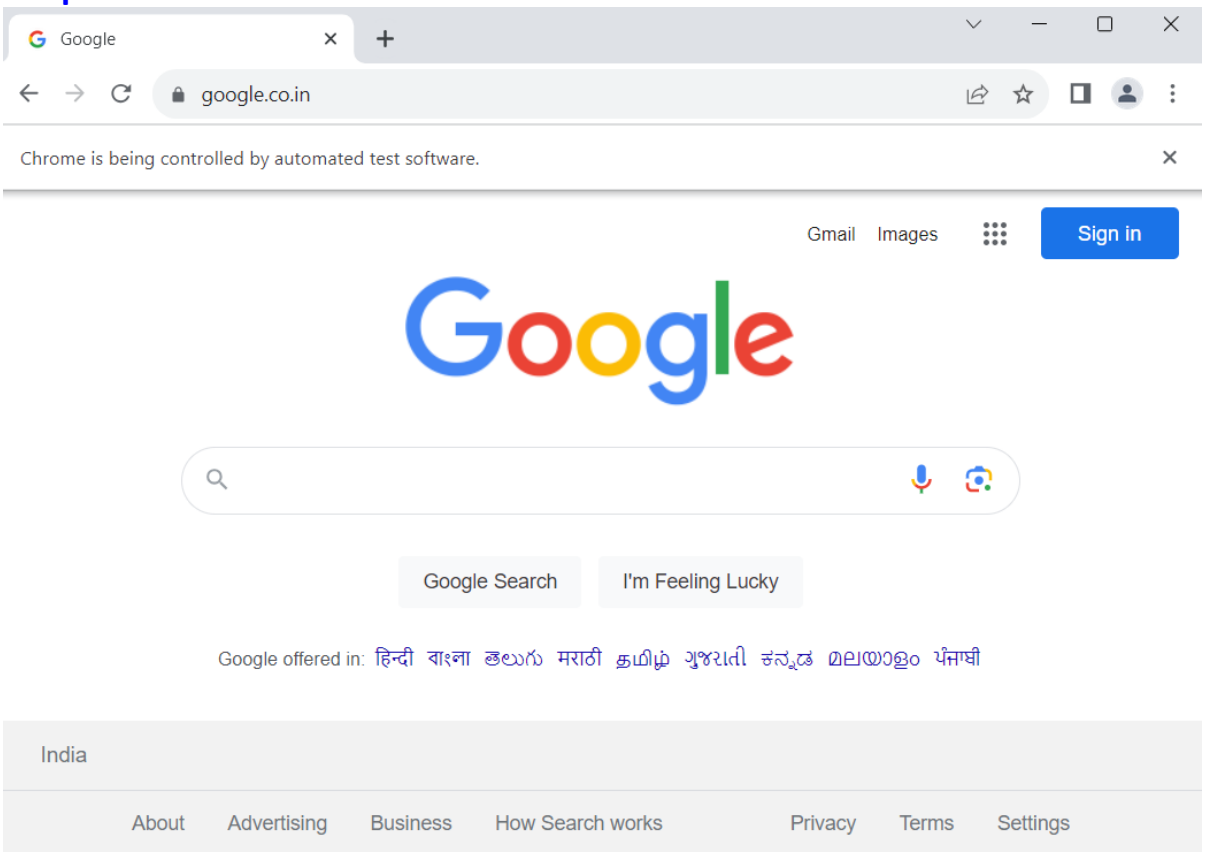
- right-click on Project Name > Build Path > Configure Build Path…
- now go under: Java Build Path > Libraries >click Add External JARs…
- Browse and add JAR files > click Apply and Close :




```
package pract7;


import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
import java.util.List;



public class nlinks {

    public static void main(String[] args) {
        try {
            WebDriver driver = new ChromeDriver();
            driver.get("https://www.google.com/");
            List<WebElement> links = driver.findElements(By.tagName("a"));
            System.out.println("Total links are: " + links.size());

            for (int i = 0; i < links.size(); i++) {
```

```
                System.out.println("Link " + (i + 1) + " Link name: " +
links.get(i).getText());
            }

            driver.quit();
        } catch (Exception e) {
            System.err.println("Exception: " + e.getMessage());
        }
    }
}
```

Output:




```
Total links are: 25
Link 1 Link name: Gmail
Link 2 Link name: Images
Link 3 Link name:
Link 4 Link name: Sign in
Link 5 Link name:
Link 6 Link name: हिन्दी
Link 7 Link name: বাংলা
Link 8 Link name: తెలుగు
Link 9 Link name: मराठी
Link 10 Link name: தமிழ்
Link 11 Link name: ગુજરાતી
Link 12 Link name: ಕನ್ನಡ
Link 13 Link name: മലയാളം
Link 14 Link name: ਪੰਜਾਬੀ
Link 15 Link name: About
Link 16 Link name: Advertising
Link 17 Link name: Business
Link 18 Link name: How Search works
Link 19 Link name: Privacy
Link 20 Link name: Terms
Link 21 Link name:
```

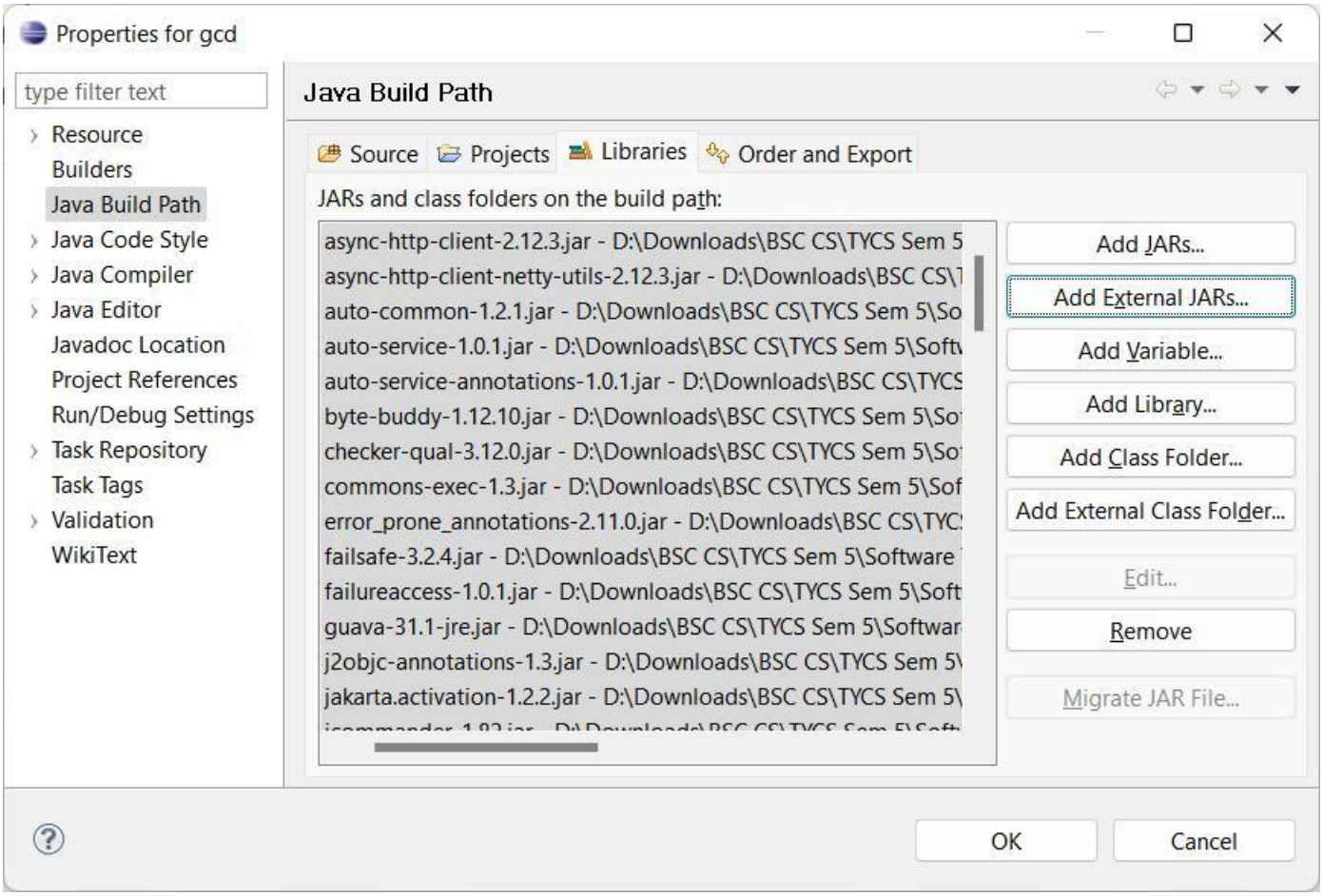
Link 22 Link name:
Link 23 Link name:
Link 24 Link name:
Link 25 Link name:

Practical 8

Aim : Write a Program using Selenium Web driver to get the number of items in a list combo box on a web page . Perform element identification and counting .

1)Adding “Selenium Server Driver and Client Driver(JAR files)” in Eclipse IDE:

- right-click on Project Name > Build Path > Configure Build Path…
- now go under: Java Build Path > Libraries >click Add External JARs…
- Browse and add JAR files > click Apply and Close :



---(pract8.java)---

```
package pract8;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;

public class  pract8 {
    public static void main(String[] args) {

        WebDriver driver = new ChromeDriver();

        driver.get("https://www.google.com/");


        int linkCount = driver.findElements(By.tagName("a")).size();
        int buttonCount = driver.findElements(By.tagName("button")).size();
        int inputFieldCount = driver.findElements(By.tagName("input")).size();
```

```
        System.out.println("Number of links: " + linkCount);
        System.out.println("Number of buttons: " + buttonCount);
        System.out.println("Number of input fields: " + inputFieldCount);


        driver.quit();
    }
}
```

Output:

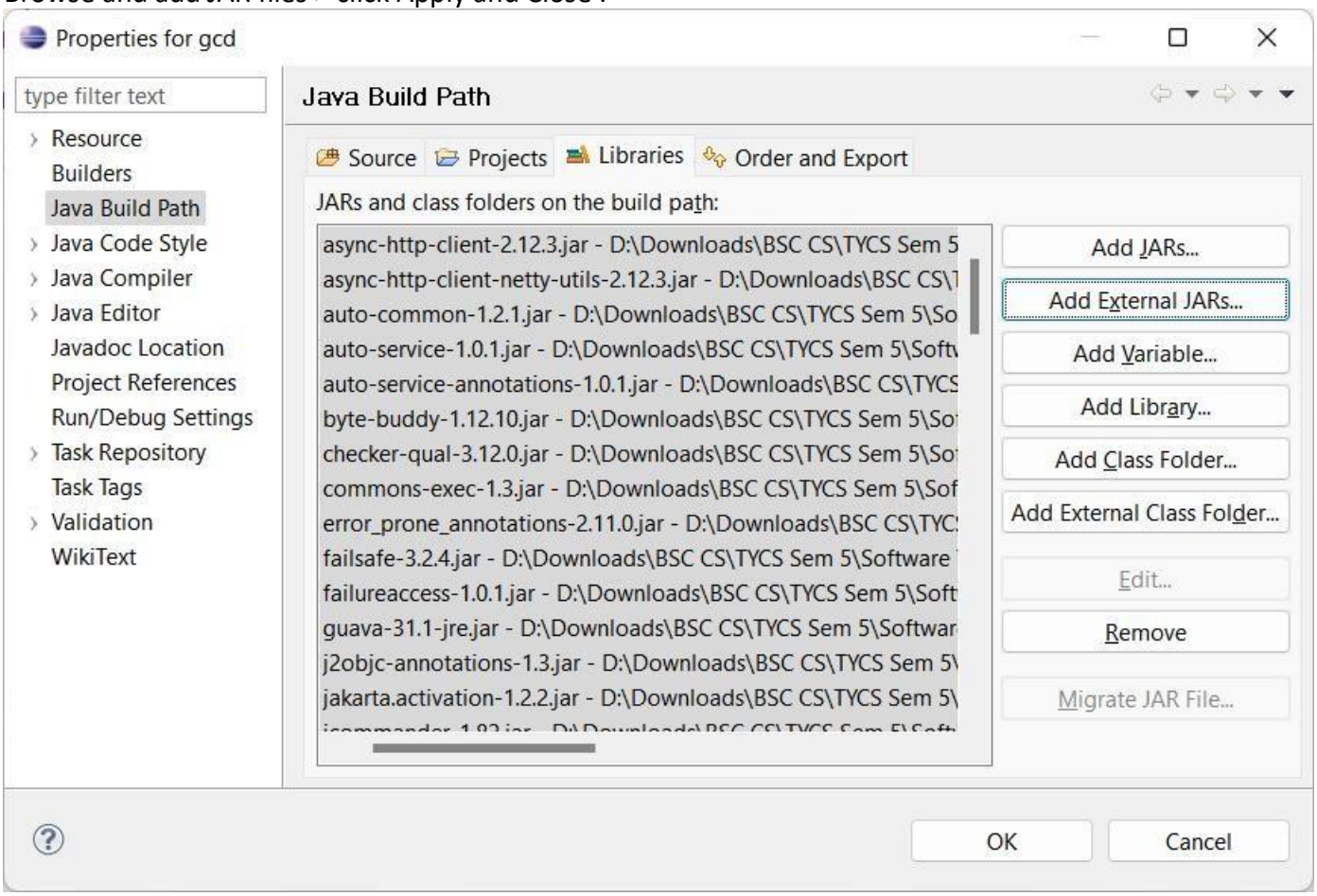
```
Number of links: 25
Number of buttons: 1
Number of input fields: 8
```

Practical 9

Aim : Write a Program using Selenium Web driver to count the number of checkboxes on a web page , including checked and unchecked counts .Perform check box identification and counting .

1)Adding “Selenium Server Driver and Client Driver(JAR files)” in Eclipse IDE:

- right-click on Project Name > Build Path > Configure Build Path…
- now go under: Java Build Path > Libraries >click Add External JARs…
- Browse and add JAR files > click Apply and Close :



---(pract9.java)---

```
package pract9;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
import java.util.List;

public class pract9 {
    public static void main(String[] args) {

        WebDriver driver = new ChromeDriver();
        driver.get("https://browsershots.org/");

        List<WebElement> checkboxes =
driver.findElements(By.xpath("//input[@type='checkbox']"));
        int totalCheckboxes = checkboxes.size();
        int checkedCheckboxes = 0;
```

```
        int uncheckedCheckboxes = 0;


        for (WebElement checkbox : checkboxes) {
            if (checkbox.isSelected()) {
                checkedCheckboxes++;
            } else {
                uncheckedCheckboxes++;
            }
        }


        System.out.println("Total Checkboxes: " + totalCheckboxes);
        System.out.println("Checked Checkboxes: " + checkedCheckboxes);
        System.out.println("Unchecked Checkboxes: " + uncheckedCheckboxes);


        driver.quit();
    }
}
```

Output:

```
Total Checkboxes: 2
Checked Checkboxes: 2
Unchecked Checkboxes: 0
```