NIRMALA MEMORIAL FOUNDATION COLLEGE OFSCIENCE AND COMMERCE
KANDIVALI (E)

PRACTICALJOURNAL

OF

USCSP5032

Software Testing & Quality Assurance Practical

INDEX

Practical 1

AIM : Install Selenium IDE and create a test suite containing a minimum of 4 test cases for different web page formats (e.g., HTML, XML, JSON, etc.).

Solution:

INTRODUCTION TO SELENIUM

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
- It is a Web testing tool that supports testing Web 2.0 applications
- It also supports for Cross-Browser Testing (ON Multiple Browsers) and multiple Operating Systems
- It supports Cross browser – IE 6/7, Firefox .8+, Opera, and Safari 2.0+

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

Selenium Components

1. Selenium IDE - Created by Shinya Kasatani of Japan
2. Selenium RC - Created by Paul Hammant
3. Selenium Grid - Developed by Patrick Lightbody

Selenium IDE

- The Selenium-IDE (Integrated Development Environment) is the tool you use to develop your Selenium test cases.
- It is Chrome plug-in
- Chrome extension which allows record/play testing paradigm

- Automates commands, but asserts must be entered by hand
- Creates the simplest possible Locator

Selenium IDE installation:

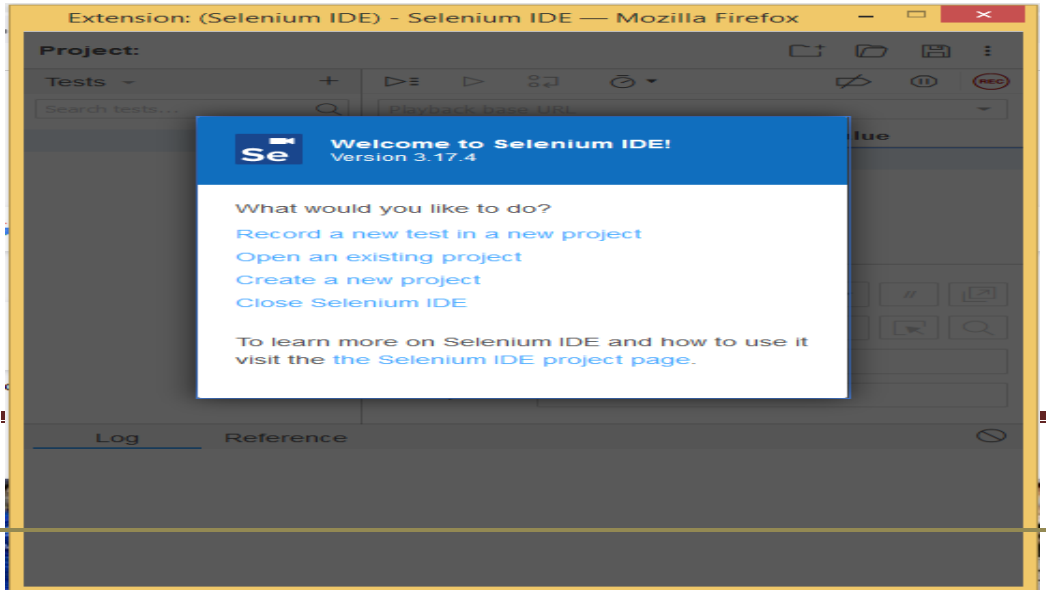
Steps:

1. Launch Google Chrome Browser.
2. Type URL https://www.seleniumhq.org/download/ OR **https://chrome.google.com/webstore/detail/selenium-ide/mooikfkahbdckldjjndioackbalphokd?hl=en/**
3. Selenium IDE Add-ons page will get open then Click on Add to Chrome button
4. Chrome will show one popup saying do you want to allow Google. Chrome to install Selenium IDE Add-ons or not. Click on Install button.
5. Chrome will automatically install Selenium IDE software. After the installation is completed, a pop up window appears asking to re-start the Chrome. 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, Chrome will restart automatically. In case you missed the pop-up, simply close the Chrome and launch again.
7. Once the Chrome is booted and started again, we can see selenium IDE under thetools menu list. Selenium IDE icon will be displayed in the Chrome toolbar.
8. Click on Selenium IDE icon to open Selenium IDE.

4 test cases for 4 websites:

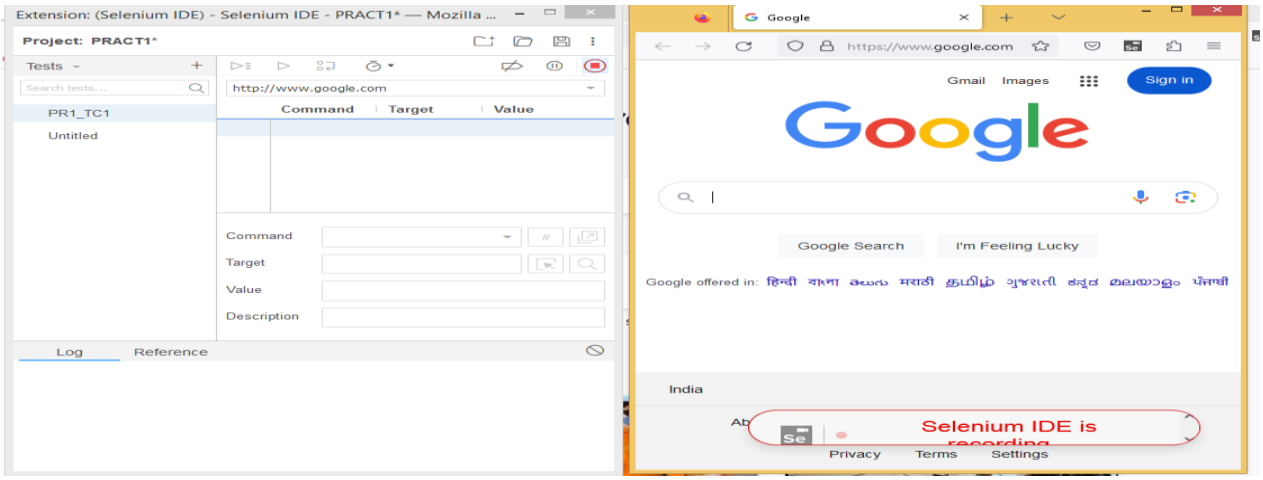
Step 1

- ❖ Launch Chrome and Selenium IDE.
- ❖ Type the value for our Base URL:
  - http://www.google.com/
- ❖ Toggle the Record button on (if it is not yet toggled on by default).



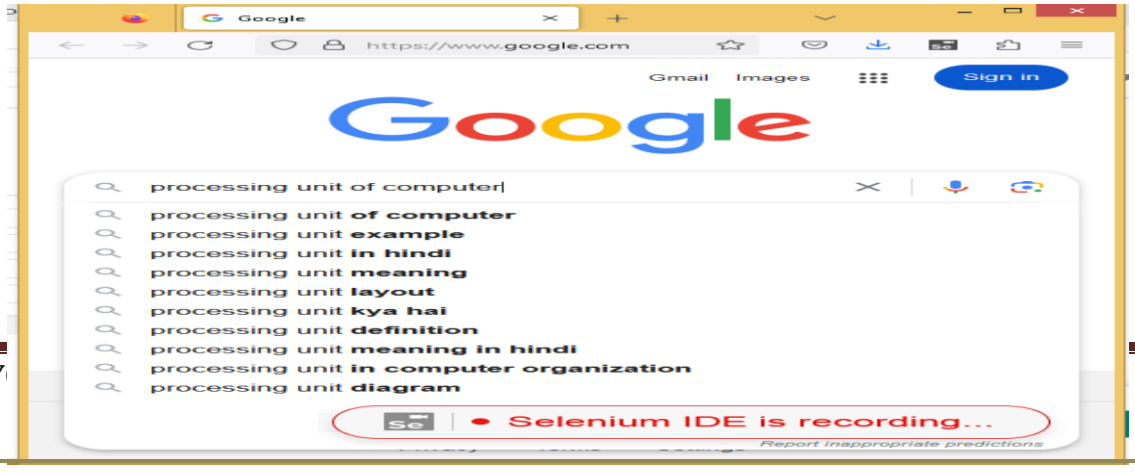
Step 2

In Chrome, navigate to http://www.google.com/
Chrome should take you to that page.



Step 3

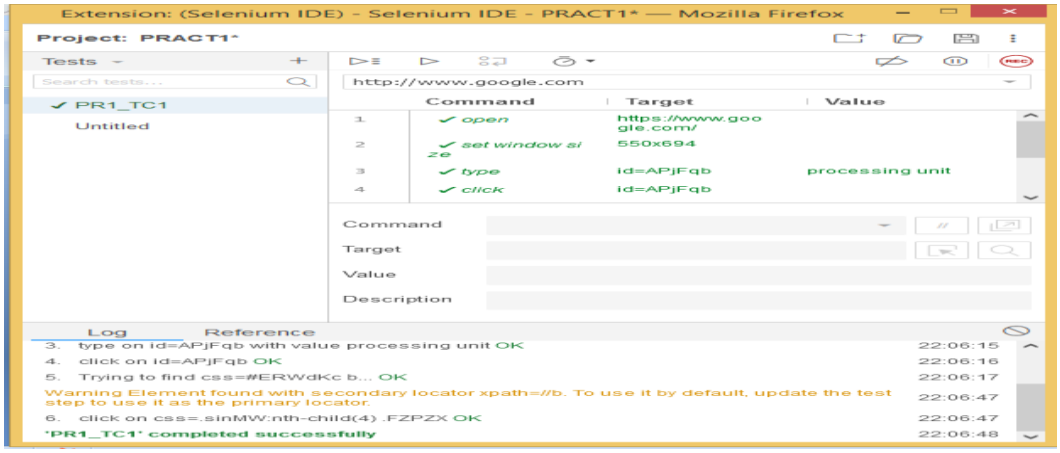
In the Search textbox type "Programming".



Step 4

Click on the

"Search" button. Chrome should take you to another page.



Step 5

Toggle the record button off to stop recording.

Step 6

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

Step 7

Choose your desired location, and then name the Test Case as "TestCase1".
Click the "Save" button.

Step 8

Notice that the file was saved as side extension.

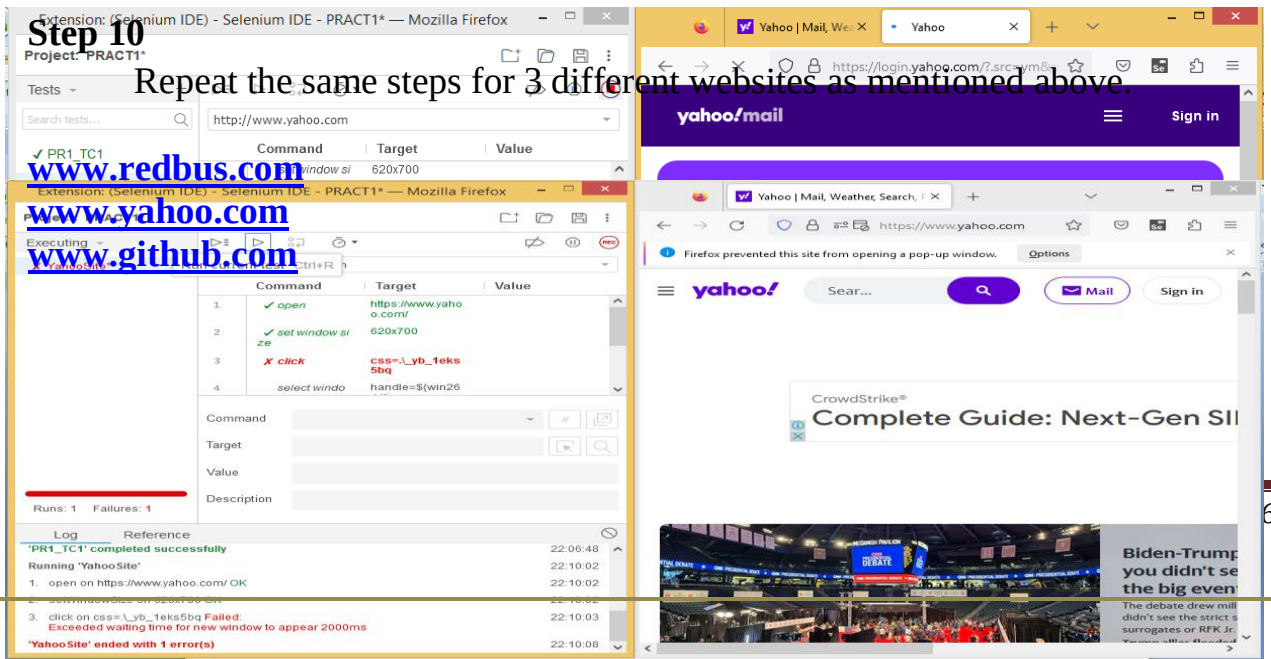
Step 9

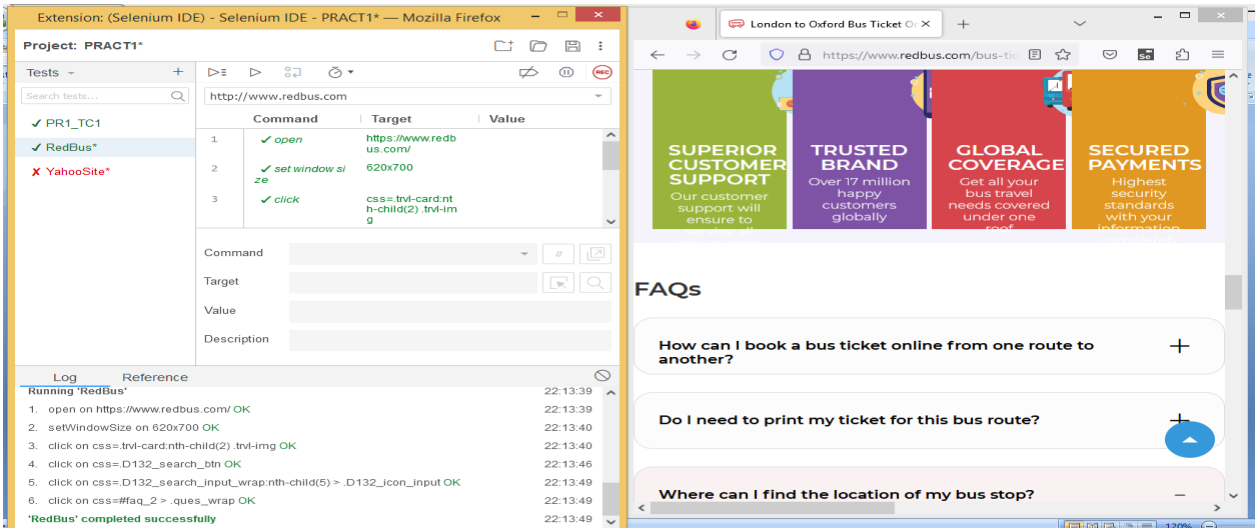
Go back to Selenium IDE and click the Playback button to execute the whole script. Selenium IDE should be able to replicate everything properly.

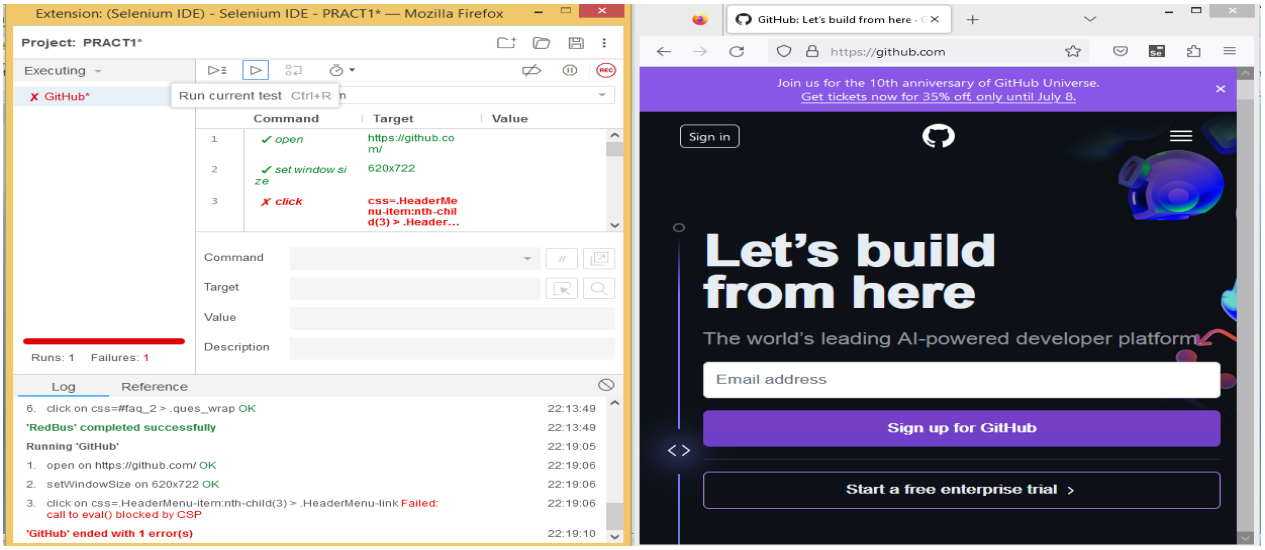
Step 10

Repeat the same steps for 3 different websites as mentioned above.

www.redbus.com
www.yahoo.com
www.github.com







CODE :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 "name": "PRACT1",
 "url": "http://www.github.com",
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  "id": "6f37700b-9bb7-42a4-b224-3f6bcd25f4f4",
  "name": "YahooSite",
  "commands": [{
   "id": "618e0e97-7918-46a3-809f-ac0a0eb1ea75",
   "comment": "",
   "command": "open",
   "target": "https://www.yahoo.com/",
   "targets": [],
   "value": ""
  }, {
   "id": "b26ef69a-b782-4740-92a0-85dfe77ffbfd",
```

```
    "comment": "",
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    "target": "620x700",
    "targets": [],
    "value": ""
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    "comment": "",
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     ["xpath=//span[contains(.,'Mail')]", "xpath:innerText"]
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    "value": "",
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    "id": "39ce207c-9aec-4836-8512-cfcaeb9c9300",
    "comment": "",
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    "target": "handle=${win2641}",
    "targets": [],
    "value": ""
   }, {
    "id": "526cf8a6-1fe1-4405-9c2a-8f35655930da",
    "comment": "",
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    "targets": [
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     ["css=.fuji-button-link", "css:finder"],
     ["xpath=//a[contains(text(),'Sign in')]", "xpath:link"],
     ["xpath=//body[@id='signin-main']/div/a", "xpath:idRelative"],
     ["xpath=//a[contains(@href,
'https://login.yahoo.com?.src=ym&pspid=1197806870&activity=header-signin&.lang=en-
US&.intl=us&.done=https%3A%2F%2Fmail.yahoo.com%2Fd')]", "xpath:href"],
     ["xpath=//a", "xpath:position"],
     ["xpath=//a[contains(.,'Sign in')]", "xpath:innerText"]
    ],
    "value": ""
   }, {
    "id": "efa7f79b-37c7-4068-878d-c23f70d7110c",
    "comment": "",
    "command": "click",
    "target": "id=createacc",
    "targets": [
```

```
      ["id=createacc", "id"],
      ["linkText=Create an account", "linkText"],
      ["css=#createacc", "css:finder"],
      ["xpath=//a[contains(text(),'Create an account')]", "xpath:link"],
      ["xpath=//a[@id='createacc']", "xpath:attributes"],
      ["xpath=//form[@id='login-username-form']/div[4]/p/a", "xpath:idRelative"],
      ["xpath=//a[contains(@href, '/account/create?.intl=us&.lang=en-
US&src=ym&activity=header-
signin&pspid=1197806870&.done=https%3A%2F%2Fmail.yahoo.com%2Fd&specId=yidregsimp
lified&done=https%3A%2F%2Fmail.yahoo.com%2Fd')]", "xpath:href"],
      ["xpath=//p/a", "xpath:position"],
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     ],
     "value": ""
   }]
  }, {
   "id": "0c634dee-2595-47f1-a219-9a418fcbd893",
   "name": "PR1_TC1",
   "commands": [{
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    "target": "https://www.google.com/",
    "targets": [],
    "value": ""
   }, {
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    "comment": "",
    "command": "setWindowSize",
    "target": "550x694",
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    "comment": "",
    "command": "type",
    "target": "id=APjFqb",
    "targets": [
     ["id=APjFqb", "id"],
     ["name=q", "name"],
     ["css=#APjFqb", "css:finder"],
     ["xpath=//textarea[@id='APjFqb']", "xpath:attributes"],
     ["xpath=//textarea", "xpath:position"]
    ],
    "value": "processing unit"
   }, {
    "id": "8aa2c7f7-3e53-4204-a58f-c072fe3a5118",
    "comment": "",
    "command": "click",
    "target": "id=APjFqb",
```

```
    "targets": [
     ["id=APjFqb", "id"],
     ["name=q", "name"],
     ["css=#APjFqb", "css:finder"],
     ["xpath=//textarea[@id='APjFqb']", "xpath:attributes"],
     ["xpath=//textarea", "xpath:position"]
    ],
    "value": ""
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    "id": "344d9892-1cb5-4c08-bbdf-7ba48884f077",
    "comment": "",
    "command": "click",
    "target": "css=#ERWdKc b",
    "targets": [
     ["css=#ERWdKc b", "css:finder"],
     ["xpath=//div[@id='ERWdKc']/div/span/b", "xpath:idRelative"],
     ["xpath=//b", "xpath:position"],
     ["xpath=//b[contains(.,' of computer')]", "xpath:innerText"]
    ],
    "value": ""
   }, {
    "id": "73621e4c-de11-4795-82ab-750e7ce71479",
    "comment": "",
    "command": "click",
    "target": "css=.sinMW:nth-child(4) .FZPZX",
    "targets": [
     ["css=.sinMW:nth-child(4) .FZPZX", "css:finder"],
     ["xpath=//div[@id='Odp5De']/div/div/div[3]/div[4]/div/div[2]/div", "xpath:idRelative"],
     ["xpath=//div/div/div/div[3]/div[4]/div/div[2]/div", "xpath:position"]
    ],
    "value": ""
   }]
  }, {
   "id": "d8cd89db-b012-4086-9a86-ed5dd0f91605",
   "name": "RedBus",
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    "comment": "",
    "command": "open",
    "target": "https://www.redbus.com/",
    "targets": [],
    "value": ""
   }, {
    "id": "1c825b38-894c-4cac-8956-222806537a90",
    "comment": "",
    "command": "setWindowSize",
    "target": "620x700",
    "targets": [],
    "value": ""
   }, {
```

```
    "id": "0b417dea-08d9-4ec7-9b92-4a5aebede468",
    "comment": "",
    "command": "click",
    "target": "css=.trvl-card:nth-child(2) .trvl-img",
    "targets": [
     ["css=.trvl-card:nth-child(2) .trvl-img", "css:finder"],
     ["xpath=//img[contains(@src,'https://st.redbus.in/Images/rdc/Oxford-ImResizer.jpeg')]",
"xpath:img"],
     ["xpath=//div[@id='rdc-root']/div/div[5]/div[2]/a[2]/div/img", "xpath:idRelative"],
     ["xpath=//a[2]/div/img", "xpath:position"]
    ],
    "value": ""
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    "id": "7955cd69-6e17-470f-bd8c-da11223fd9bd",
    "comment": "",
    "command": "click",
    "target": "css=.D132_search_btn",
    "targets": [
     ["css=.D132_search_btn", "css:finder"],
     ["xpath=//div[@id='DC132_sw_main']/button", "xpath:idRelative"],
     ["xpath=//button", "xpath:position"],
     ["xpath=//button[contains(.,'Search Buses')]", "xpath:innerText"]
    ],
    "value": ""
   }, {
    "id": "69657933-4dc7-42e4-90f7-5b05e58f0909",
    "comment": "",
    "command": "click",
    "target": "css=.D132_search_input_wrap:nth-child(5) > .D132_icon_input",
    "targets": [
     ["css=.D132_search_input_wrap:nth-child(5) > .D132_icon_input", "css:finder"],
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     ["xpath=//div[4]/span", "xpath:position"]
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    "comment": "",
    "command": "click",
    "target": "css=#faq_2 > .ques_wrap",
    "targets": [
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     ["xpath=//div[@id='faq_2']/div", "xpath:idRelative"],
     ["xpath=//div[5]/div[4]/div/div", "xpath:position"]
    ],
    "value": ""
   }]
  }, {
   "id": "a5cd03fa-376d-4af6-93b0-617a12222ee2",
   "name": "GitHub",
```

```
"commands": [{
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  "comment": "",
  "command": "open",
  "target": "https://github.com/",
  "targets": [],
  "value": ""
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  "comment": "",
  "command": "setWindowSize",
  "target": "620x722",
  "targets": [],
  "value": ""
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  "comment": "",
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  "targets": [
   ["css=.HeaderMenu-item:nth-child(3) > .HeaderMenu-link", "css:finder"],
   ["xpath=(//button[@type='button'])[6]", "xpath:attributes"],
   ["xpath=//li[3]/button", "xpath:position"],
   ["xpath=//button[contains(.,'Resources')]", "xpath:innerText"]
  ],
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  "comment": "",
  "command": "click",
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  "targets": [
   ["css=.header-search-button > .flex-1", "css:finder"],
   ["xpath=//qbsearch-input/div/button/span", "xpath:position"],
   ["xpath=//span[contains(.,'Search or jump to...')]", "xpath:innerText"]
  ],
  "value": ""
}, {
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  "comment": "",
  "command": "click",
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  ],
  "value": ""
}, {
  "id": "09d60757-7b84-4a93-9cd2-858972c0f827",
  "comment": "",
```

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  "command": "click",
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  "targets": [
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   ["xpath=(//button[@type='button'])[7]", "xpath:attributes"],
   ["xpath=//li[4]/button", "xpath:position"],
   ["xpath=//button[contains(.,'Open Source')]", "xpath:innerText"]
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  "value": ""
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  "comment": "",
  "command": "click",
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   ["css=.HeaderMenu-item:nth-child(2) > .HeaderMenu-link", "css:finder"],
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   ["xpath=//li[2]/button", "xpath:position"],
   ["xpath=//button[contains(.,'Solutions')]", "xpath:innerText"]
  ],
  "value": ""
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  "comment": "",
  "command": "click",
  "target": "css=.HeaderMenu-item:nth-child(1) > .HeaderMenu-link",
  "targets": [
   ["css=.HeaderMenu-item:nth-child(1) > .HeaderMenu-link", "css:finder"],
   ["xpath=(//button[@type='button'])[4]", "xpath:attributes"],
   ["xpath=//li/button", "xpath:position"],
   ["xpath=//button[contains(.,'Product')]", "xpath:innerText"]
  ],
  "value": ""
 }, {
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  "comment": "",
  "command": "click",
  "target": "css=li:nth-child(6) > .HeaderMenu-dropdown-link > div",
  "targets": [
   ["css=li:nth-child(6) > .HeaderMenu-dropdown-link > div", "css:finder"],
   ["xpath=//li[6]/a/div", "xpath:position"]
  ],
  "value": ""
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  "id": "9e8df27d-5afe-4afd-8020-38abe99db440",
  "comment": "",
  "command": "click",
  "target": "css=.HeaderMenu-toggle-bar:nth-child(3)",
  "targets": [
   ["css=.HeaderMenu-toggle-bar:nth-child(3)", "css:finder"],
```

```
      ["xpath=//div[3]", "xpath:position"]
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     "value": ""
    }, {
     "id": "5134d774-f3b5-4e2b-896e-c8be3c756432",
     "comment": "",
     "command": "click",
     "target": "css=.HeaderMenu-item:nth-child(5) > .HeaderMenu-link",
     "targets": [
      ["css=.HeaderMenu-item:nth-child(5) > .HeaderMenu-link", "css:finder"],
      ["xpath=(//button[@type='button'])[8]", "xpath:attributes"],
      ["xpath=//li[5]/button", "xpath:position"],
      ["xpath=//button[contains(.,'Enterprise')]", "xpath:innerText"]
     ],
     "value": ""
    }]
   }],
   "suites": [{
    "id": "452899b0-49e9-42ca-b895-518f93203aeb",
    "name": "Default Suite",
    "persistSession": false,
    "parallel": false,
    "timeout": 300,
    "tests": ["6f37700b-9bb7-42a4-b224-3f6bcd25f4f4"]
   }],
   "urls": ["http://www.google.com/", "http://www.yahoo.com/", "http://www.redbus.com/",
"http://www.github.com/"],
   "plugins": []
}
```


Practical 2

AIM : Conduct a test suite for two different websites using Selenium IDE. Perform various actions like clicking links, filling forms, and verifying content.

Create minimum two test cases for below mentioned website in terms of test suite following the steps.

i. https://www.yahoo.com
ii. htttp://www.google.com

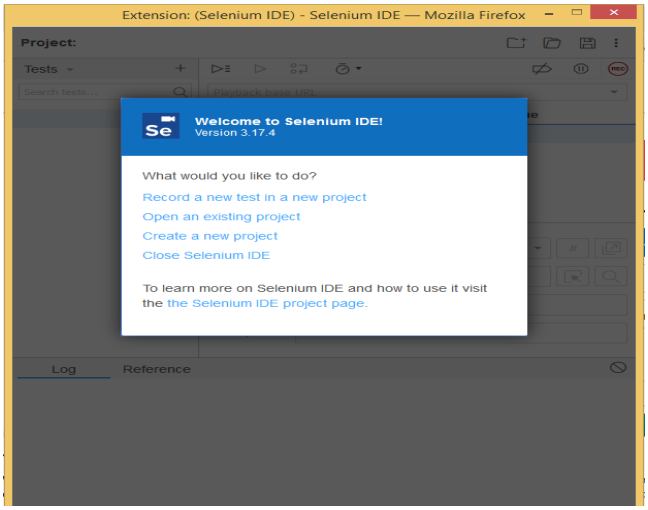
Step 1

- Launch Chrome and Selenium IDE.
- Type the value for our Base

- Toggle the Record button on (if it is not yet toggled on by default).

Step 2

In Chrome, navigate to the same website. Chrome should take you to that page.

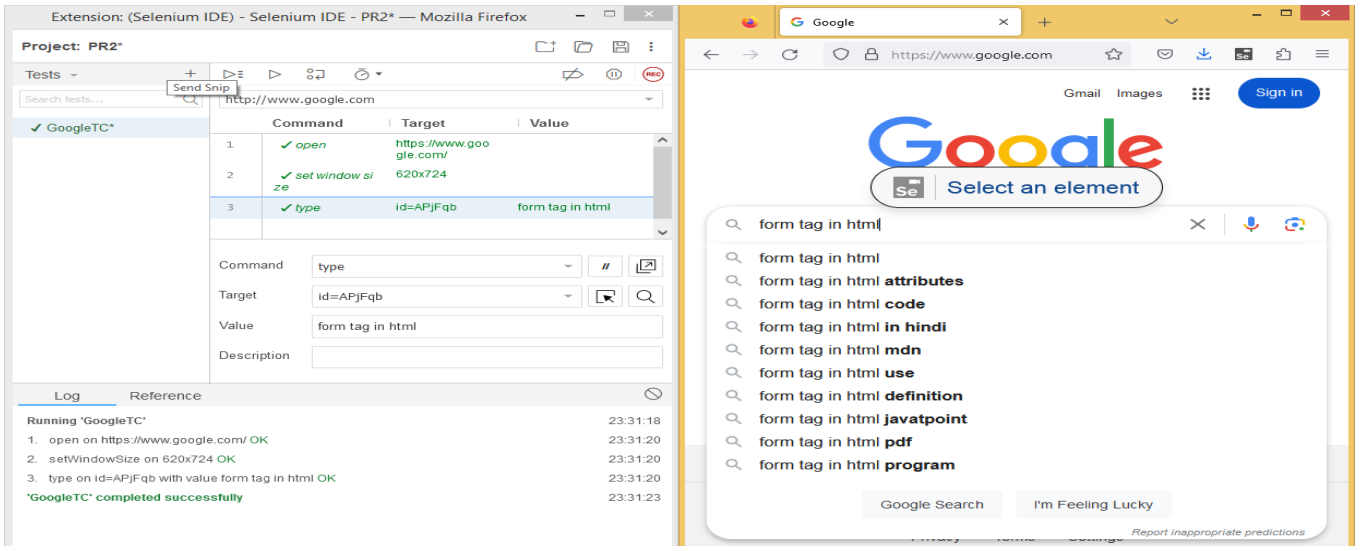


Step 3 Perform some valid action in the page say either login or click a link

Step 4 Click on the "Sign-In" (if login) button. Chrome should take you to another page.

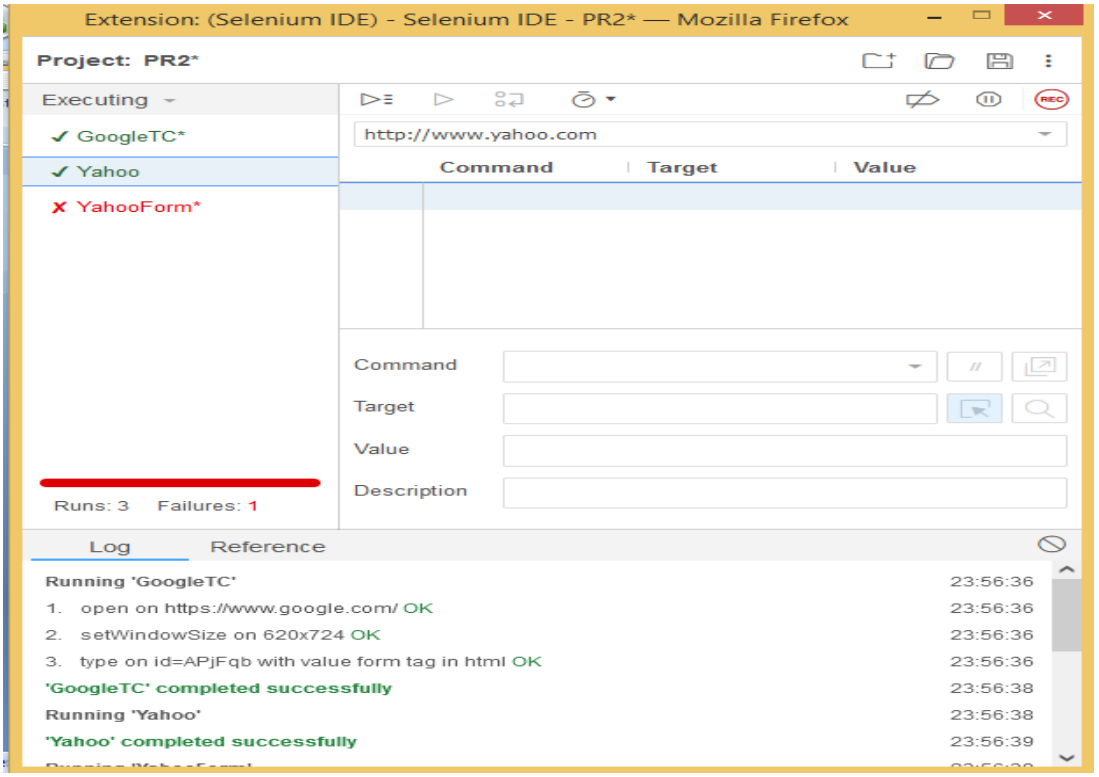
Step 5 Toggle the record button off to stop recording.

Step 6 Now that we are done with our test script, we shall save it in a test case, and start recording another test case under the same test suite for the same website.



Step 7: Go back to Selenium IDE and click the Playback button to execute thewhole script. Selenium IDE should be able to replicate everything properly.

Step 8 : Repeat the same steps for next website as mentioned above.



SCRIPT

{
"id": "a2c9e13c-448b-45ed-a0ad-aef3f245cec6",
"version": "2.0",

```
 "name": "PR2",
 "url": "http://www.yahoo.com",
 "tests": [{
  "id": "2ac219cd-44b9-4790-bf44-15fbf61f0d2d",
  "name": "GoogleTC",
  "commands": [{
   "id": "65646f3b-5f0d-421e-b29b-c1b3519bae08",
   "comment": "",
   "command": "open",
   "target": "https://www.google.com/",
   "targets": [],
   "value": ""
  }, {
   "id": "60f331f3-512c-40d8-91a8-23fc89ded9c3",
   "comment": "",
   "command": "setWindowSize",
   "target": "620x724",
   "targets": [],
   "value": ""
  }, {
   "id": "d7517540-0831-4a60-8a34-cec53919deec",
   "comment": "",
   "command": "type",
   "target": "id=APjFqb",
   "targets": [
    ["id=APjFqb", "id"],
    ["name=q", "name"],
    ["css=#APjFqb", "css:finder"],
    ["xpath=//textarea[@id='APjFqb']", "xpath:attributes"],
    ["xpath=//textarea", "xpath:position"]
   ],
   "value": "form tag in html"
  }]
 }, {
  "id": "4a750f4b-0d5e-4464-83cd-1b3ce5504258",
  "name": "YahooForm",
  "commands": [{
   "id": "3d3fff98-cfec-4916-8907-6cdaa45d5bf8",
   "comment": "",
   "command": "open",
   "target": "https://www.yahoo.com/",
   "targets": [],
   "value": ""
  }, {
   "id": "0004b555-1090-41cd-8ac0-ebe6c5c3b605",
   "comment": "",
   "command": "setWindowSize",
   "target": "620x724",
   "targets": [],
   "value": ""
  }, {
```

```
    "id": "1e6ff7a2-1df5-439e-8d57-d9aaa1949b5e",
    "comment": "",
    "command": "mouseOver",
    "target": "css=#ybarMailLink > svg",
    "targets": [
     ["css=#ybarMailLink > svg", "css:finder"]
    ],
    "value": ""
   }, {
    "id": "acf23bb5-9148-4374-a71a-2038792e9503",
    "comment": "",
    "command": "mouseOver",
    "target": "css=.\\_yb_17jk31",
    "targets": [
     ["css=.\\_yb_17jk31", "css:finder"],
     ["xpath=//div[@id='ybar-inner-wrap']/div[2]/div/div[3]/div/div/button", "xpath:idRelative"],
     ["xpath=//div[3]/div/div/button", "xpath:position"],
     ["xpath=//button[contains(.,'Mail')]", "xpath:innerText"]
    ],
    "value": ""
   }, {
    "id": "0604ccd3-0bd3-4b65-9d9b-a70b44b422fb",
    "comment": "",
    "command": "mouseOut",
    "target": "css=.\\_yb_17jk31",
    "targets": [
     ["css=.\\_yb_17jk31", "css:finder"],
     ["xpath=//div[@id='ybar-inner-wrap']/div[2]/div/div[3]/div/div/button", "xpath:idRelative"],
     ["xpath=//div[3]/div/div/button", "xpath:position"],
     ["xpath=//button[contains(.,'Mail')]", "xpath:innerText"]
    ],
    "value": ""
   }, {
    "id": "ea5caec8-9c9b-49d1-89f2-6e1fc449e3b1",
    "comment": "",
    "command": "click",
    "target": "id=ybarMailLink",
    "targets": [
     ["id=ybarMailLink", "id"],
     ["linkText=Mail", "linkText"],
     ["css=#ybarMailLink", "css:finder"],
     ["xpath=//a[@id='ybarMailLink']", "xpath:attributes"],
     ["xpath=//div[@id='ybar-inner-wrap']/div[2]/div/div[3]/div/div/button/a",
"xpath:idRelative"],
     ["xpath=//a[contains(@href, 'https://mail.yahoo.com/')]", "xpath:href"],
     ["xpath=//button/a", "xpath:position"],
     ["xpath=//a[contains(.,'Mail')]", "xpath:innerText"]
    ],
    "value": "",
    "opensWindow": true,
    "windowHandleName": "win3896",
```

```
    "windowTimeout": 2000
   }, {
    "id": "6c7f9124-7b13-4929-881d-d976e515cd39",
    "comment": "",
    "command": "selectWindow",
    "target": "handle=${win3896}",
    "targets": [],
    "value": ""
   }, {
    "id": "d02a7bf6-f956-49f2-9e7a-33b1fc3081ec",
    "comment": "",
    "command": "click",
    "target": "id=createacc",
    "targets": [
     ["id=createacc", "id"],
     ["linkText=Create an account", "linkText"],
     ["css=#createacc", "css:finder"],
     ["xpath=//a[contains(text(),'Create an account')]", "xpath:link"],
     ["xpath=//a[@id='createacc']", "xpath:attributes"],
     ["xpath=//form[@id='login-username-form']/div[4]/p/a", "xpath:idRelative"],
     ["xpath=//a[contains(@href, '/account/create?.intl=us&.lang=en-
US&src=ym&activity=mail-
direct&pspid=159600001&.done=https%3A%2F%2Fmail.yahoo.com%2Fd&specId=yidregsimpl
ified&done=https%3A%2F%2Fmail.yahoo.com%2Fd')]", "xpath:href"],
     ["xpath=//p/a", "xpath:position"],
     ["xpath=//a[contains(.,'Create an account')]", "xpath:innerText"]
    ],
    "value": ""
   }, {
    "id": "7bf18408-8119-4b15-8572-e59a787ea4e8",
    "comment": "",
    "command": "click",
    "target": "id=usernamereg-firstName",
    "targets": [
     ["id=usernamereg-firstName", "id"],
     ["name=firstName", "name"],
     ["css=#usernamereg-firstName", "css:finder"],
     ["xpath=//input[@id='usernamereg-firstName']", "xpath:attributes"],
     ["xpath=//div[@id='usernamereg-fullname']/div/input", "xpath:idRelative"],
     ["xpath=//div/input", "xpath:position"]
    ],
    "value": ""
   }, {
    "id": "62eaffb6-020a-4f23-a9b7-f70c42cfae39",
    "comment": "",
    "command": "type",
    "target": "id=usernamereg-firstName",
    "targets": [
     ["id=usernamereg-firstName", "id"],
     ["name=firstName", "name"],
     ["css=#usernamereg-firstName", "css:finder"],
```

```
      ["xpath=//input[@id='usernamereg-firstName']", "xpath:attributes"],
      ["xpath=//div[@id='usernamereg-fullname']/div/input", "xpath:idRelative"],
      ["xpath=//div/input", "xpath:position"]
    ],
    "value": "Rhucha"
   }, {
    "id": "61aff8c8-c47c-4e61-8cb4-c00491822891",
    "comment": "",
    "command": "click",
    "target": "id=usernamereg-lastName",
    "targets": [
     ["id=usernamereg-lastName", "id"],
     ["name=lastName", "name"],
     ["css=#usernamereg-lastName", "css:finder"],
     ["xpath=//input[@id='usernamereg-lastName']", "xpath:attributes"],
     ["xpath=//div[@id='usernamereg-fullname']/div[2]/input", "xpath:idRelative"],
     ["xpath=//div[2]/input", "xpath:position"]
    ],
    "value": ""
   }, {
    "id": "1d8ab42c-0a62-47cc-bea1-2352f07a6582",
    "comment": "",
    "command": "type",
    "target": "css=.login-bg-outer",
    "targets": [
     ["css=.login-bg-outer", "css:finder"],
     ["xpath=//div[@id='login-body']/div[3]", "xpath:idRelative"],
     ["xpath=//div[3]/div[3]", "xpath:position"]
    ],
    "value": "Kadam"
   }, {
    "id": "5af59f48-8fad-4bb7-b3a3-34b39d592af8",
    "comment": "",
    "command": "click",
    "target": "id=usernamereg-userId",
    "targets": [
     ["id=usernamereg-userId", "id"],
     ["name=userId", "name"],
     ["css=#usernamereg-userId", "css:finder"],
     ["xpath=//input[@id='usernamereg-userId']", "xpath:attributes"],
     ["xpath=//form[@id='regform']/fieldset[2]/input", "xpath:idRelative"],
     ["xpath=//fieldset[2]/input", "xpath:position"]
    ],
    "value": ""
   }]
  }, {
   "id": "fecf6597-edf1-452c-b85a-39e925aa21f5",
   "name": "Yahoo",
   "commands": []
  }],
  "suites": [{
```

```
    "id": "61845407-2490-4866-9244-dd21fd02693d",
    "name": "Default Suite",
    "persistSession": false,
    "parallel": false,
    "timeout": 300,
    "tests": ["2ac219cd-44b9-4790-bf44-15fbf61f0d2d"]
  }],
  "urls": ["http://www.google.com/", "http://www.yahoo.com/"],
  "plugins": []
}
```

Practical 3

AIM : Install Selenium Server (Selenium RC) and demonstrate its usage by executing a script in Java or PHP to automate browser actions.

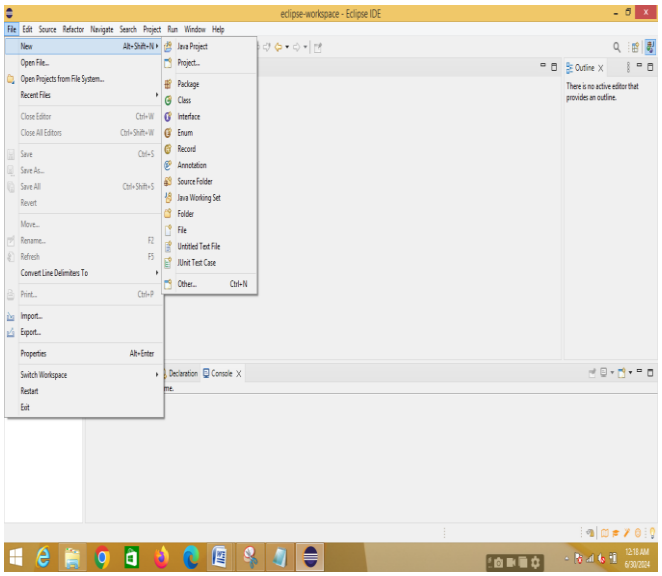
Solution :

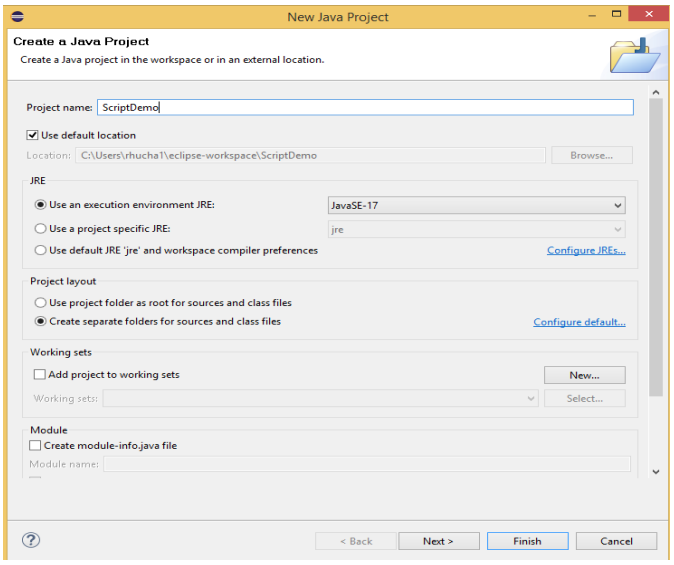
Create a web page : GCD.html

```
<html>

<head>

<script type="text/javascript">
                function gcd() {
                        var x,y;
                        x=parseInt(document.myform.n1.value);
                        y=parseInt(document.myform.n2.value);

                        while(x!=y) {
                                if(x>y)
                                        x=x-y;
                                else
                                        y=y-x;
                        }
                        document.myform.result.value=x;
                }
</script>
</head>
                <body>
                <center>
                <h1> Program to calculate GCD of two numbers </h1>
                <hr color=red>
```

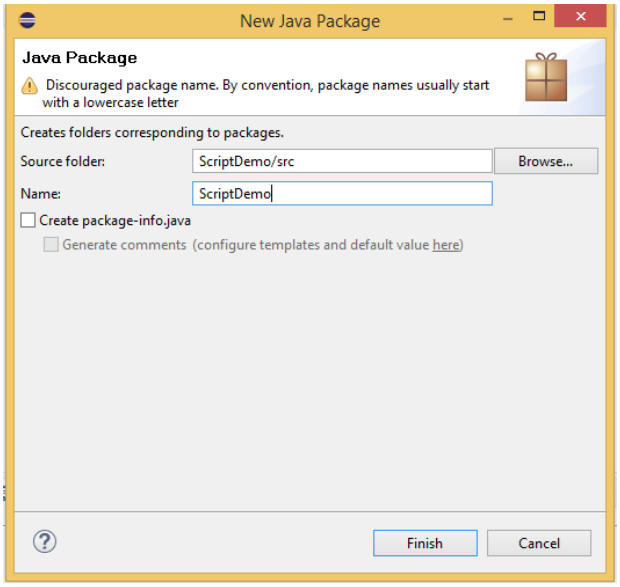
```
            <form name=myform>
            Enter Number 1: <input type="text" name="n1"
            value=""> <br><br> Enter Number 2: <input
            type="text" name="n2" value=""> <br><br>
            <input type="button" name="btn" value="Get
            GCD" onClick="gcd()"><br><br> GCD: <input
            type="text" name="result" value="">
        </form>
        </center>
        </body>
</html>
```

1) Open Eclipse IDE, create a Java Project.

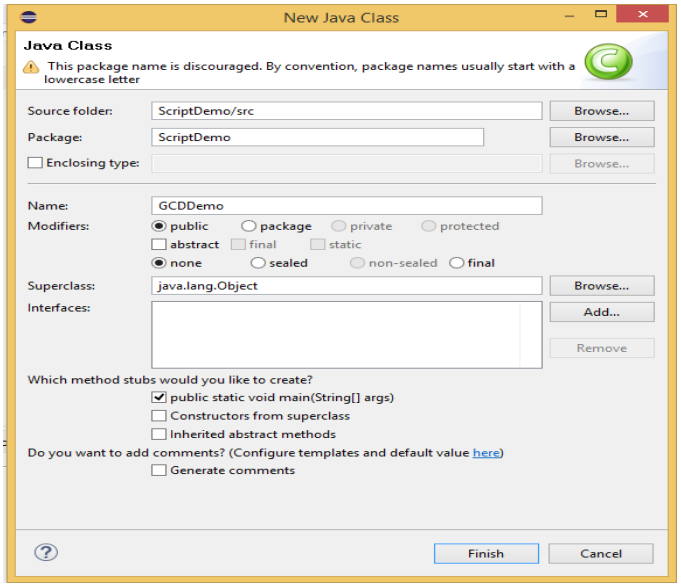




2) Create a package : ScriptDemo



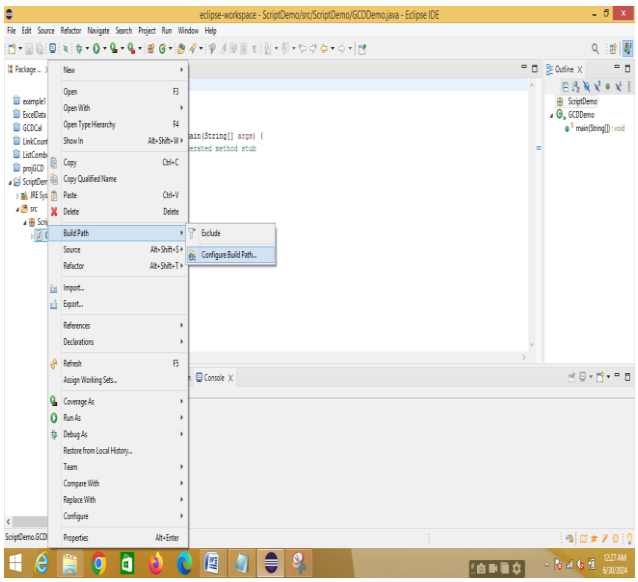
3) Create a class : GCDDemo

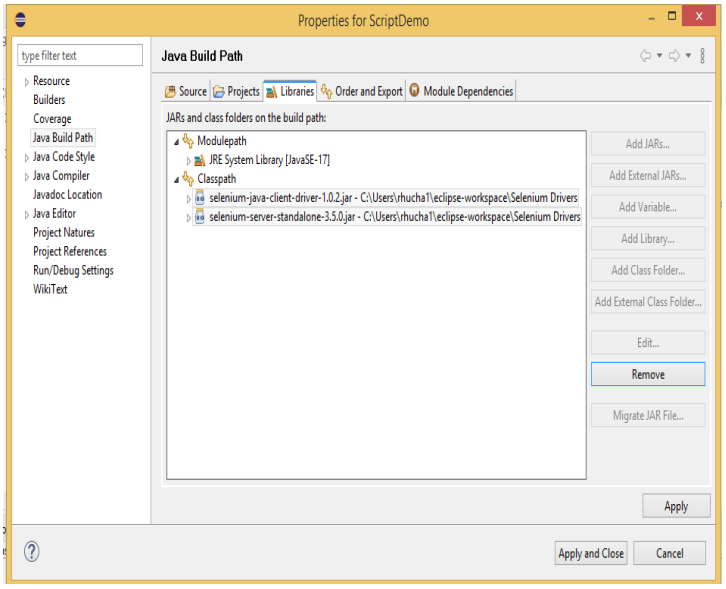


4) Build Path : Configure Build path

a. Add Selenium-java-client-driver-1.0.2.jar

b. Add Selenium-server-standalone-3.5.0.jar



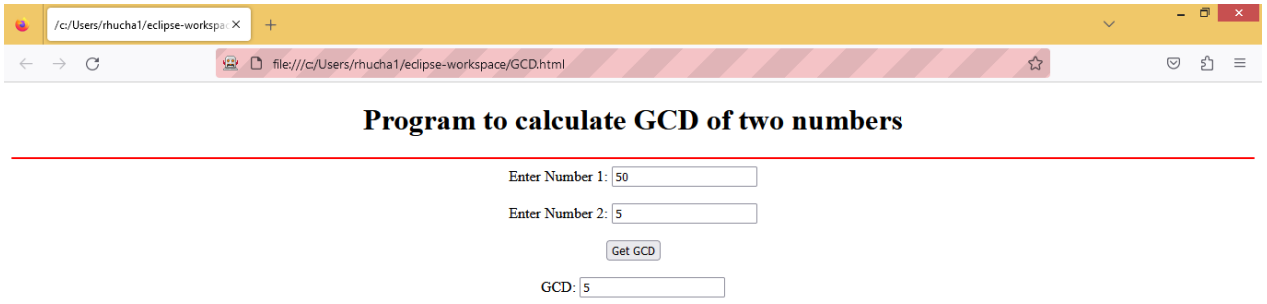


GCD.java

```
package DemoJS;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.firefox.FirefoxOptions;
import org.openqa.selenium.firefox.FirefoxProfile;
public class GCD {
        public static void main(String[] args) {
                System.setProperty("webdriver.gecko.driver",
"C:\\Users\\admin\\eclipse workspace\\geckodriver.exe");
                FirefoxProfile fp = new FirefoxProfile();
            fp.setPreference(FirefoxProfile.PORT_PREFERENCE, "7055");
                FirefoxOptions options = new FirefoxOptions();
                options.setProfile(fp);
                WebDriver driver = new FirefoxDriver(options);
                driver.get("C:\\Users\\admin\\eclipse-
                                workspace\\GCD.html");
                driver.manage().window().maximize();
                driver.findElement(By.name("n1")).sendKeys("50");
                driver.findElement(By.name("n2")).sendKeys("5");
                driver.findElement(By.name("btn")).click();
```

```
                String result =
                driver.findElement(By.name("result")).getAttribute(
                "name=result");
                System.out.println("GCD="+result);
            }
        }
```

Output:

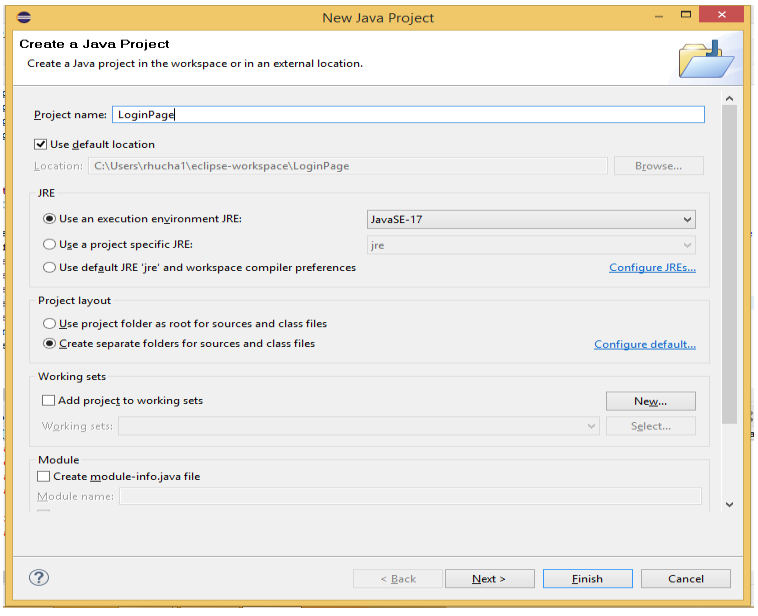


Practical 4

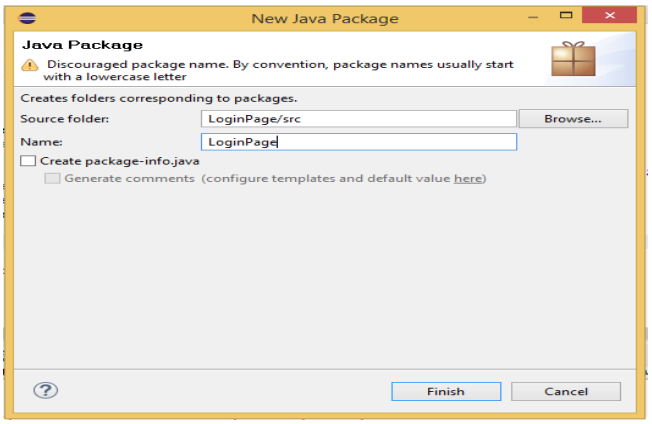
AIM : Write a program using Selenium WebDriver to automate the login process on a specific web page. Verify successful login with appropriate assertions.

Solution

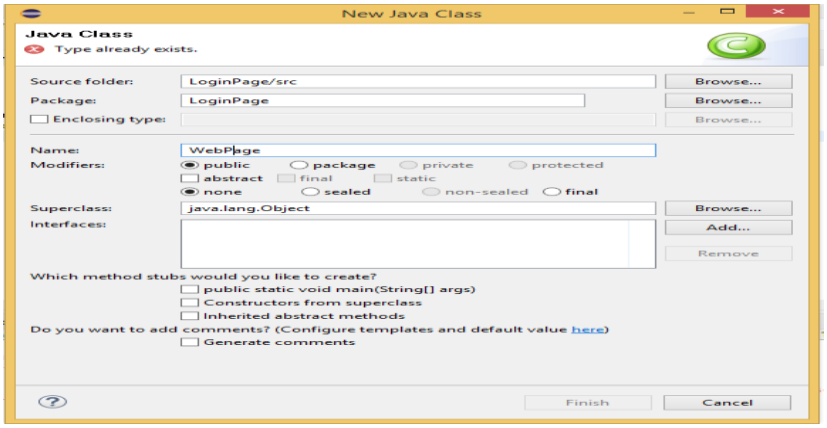
1) Open Eclipse IDE, create a Java Project.



2) Create a package : LoginPage



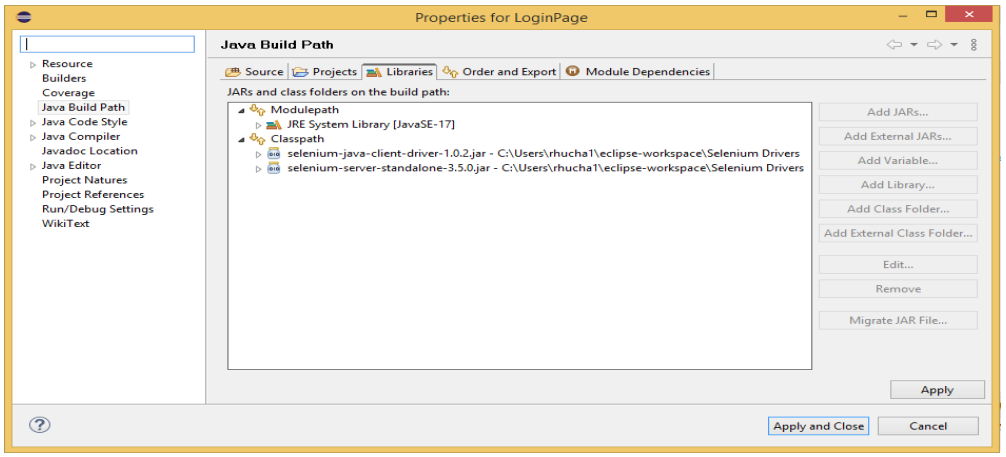
2) Create a class : WebPage



4) Build Path : Configure Build path

a. Add Selenium-java-client-driver-1.0.2.jar

b. Add Selenium-server-standalone-3.5.0.jar



WebPage.java

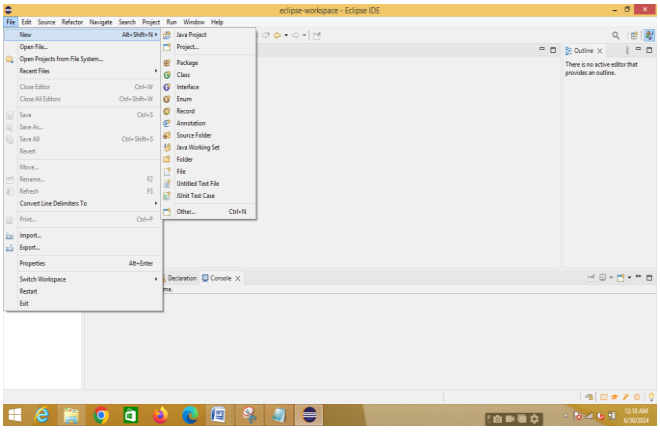
```
package LoginPage;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.firefox.FirefoxDriver;

public class WebPage {

public static void main(String[] args) {

// TODO Auto-generated method stub
```

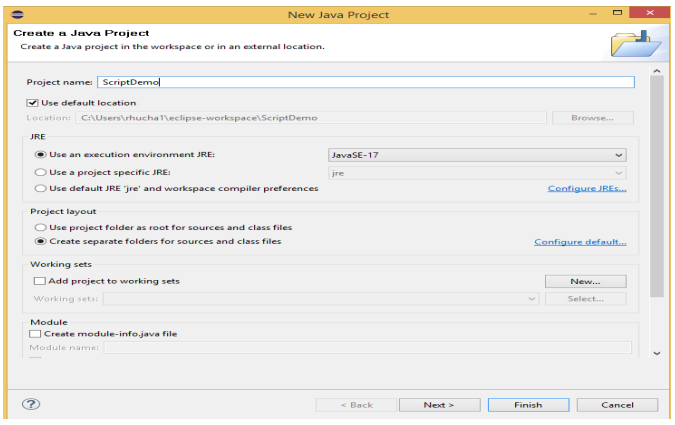
```
System.setProperty("webdriver.gecko.driver", "C:\\Users\\rhucha1\\eclipse-workspace\\Selenium Drivers\\geckodriver.exe");

WebDriver driver=new FirefoxDriver();

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

driver.findElement(By.id("session_key")).sendKeys("rhucha@gmail.com");

driver.findElement(By.id("session_password")).sendKeys("Computer");

//driver.findElement(By.name("login")).click();

driver.findElement(By.xpath("//*[@class=\"sign-in-form_submit-button\"]")).click();

String u=driver.getCurrentUrl();

if(u.equals("https://www.linkedin.com"))

System.out.println("Test Pass");

else

System.out.println("Test Failed");

}

}
```

Practical no 5

Aim: Write a program using Selenium WebDriver to update 10 student records in an Excel file. Perform data manipulation and verification.

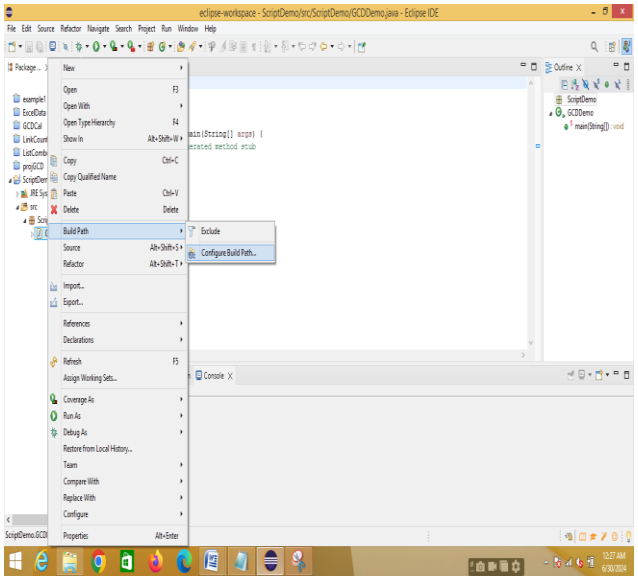
- **Follow the following steps:**
  1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just “project”)
  2. In Select Wizard –> Click Java –> “Java Project”

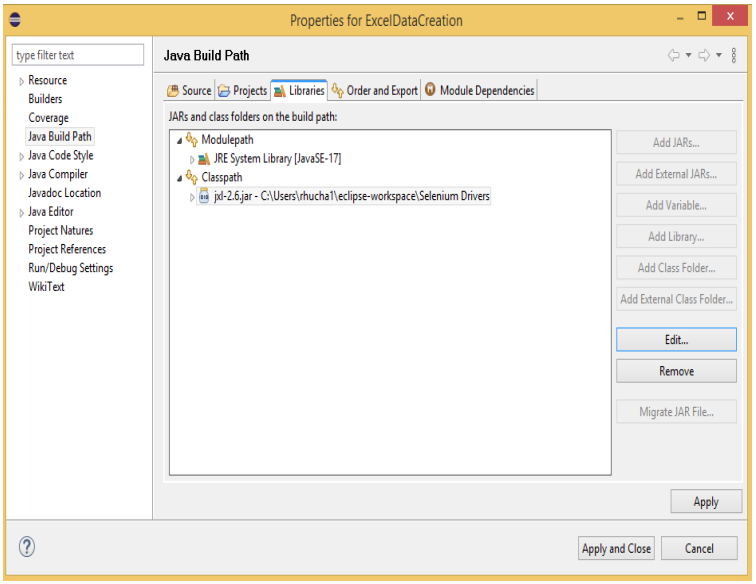




3. Give the project name (e.g. TenRecords)
4. Click Finish – Click Yes

5. Right Click "TenRecords" project
6. Click "Java Build Path"





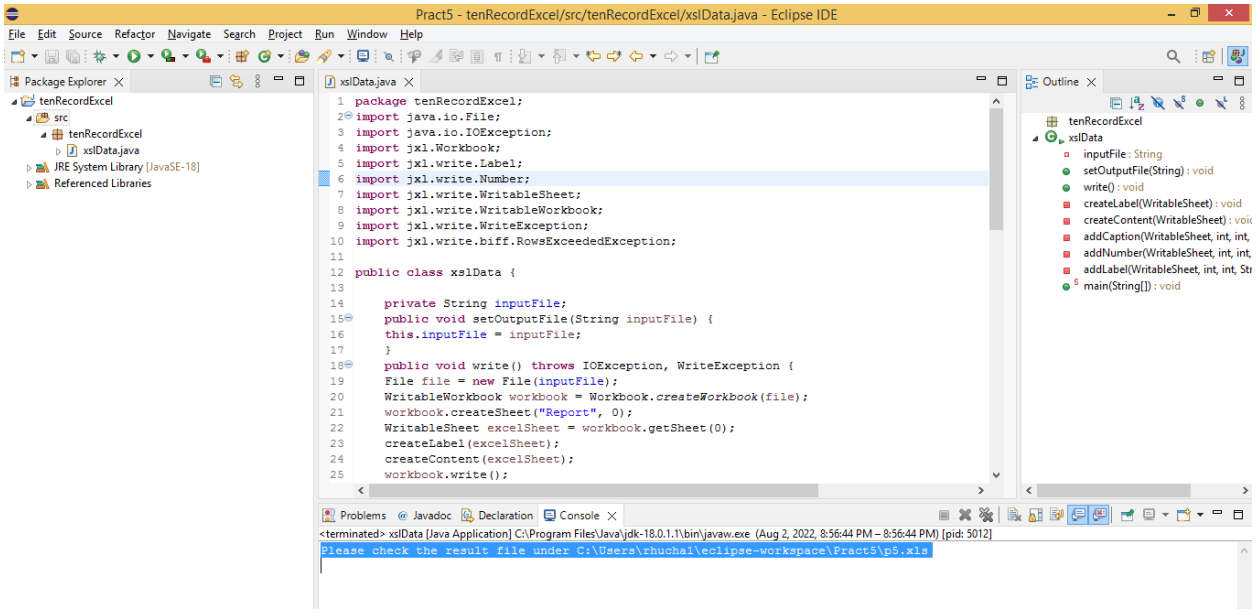
7. Click Libraries tab
8. Click "Add External JARs" button
9. Add external jar files: jxl.2.6.jar file
10. Click OK
11. Create a new class file as "xslData" in the "TenRecords" by right click on src folder.
12. Write the code-

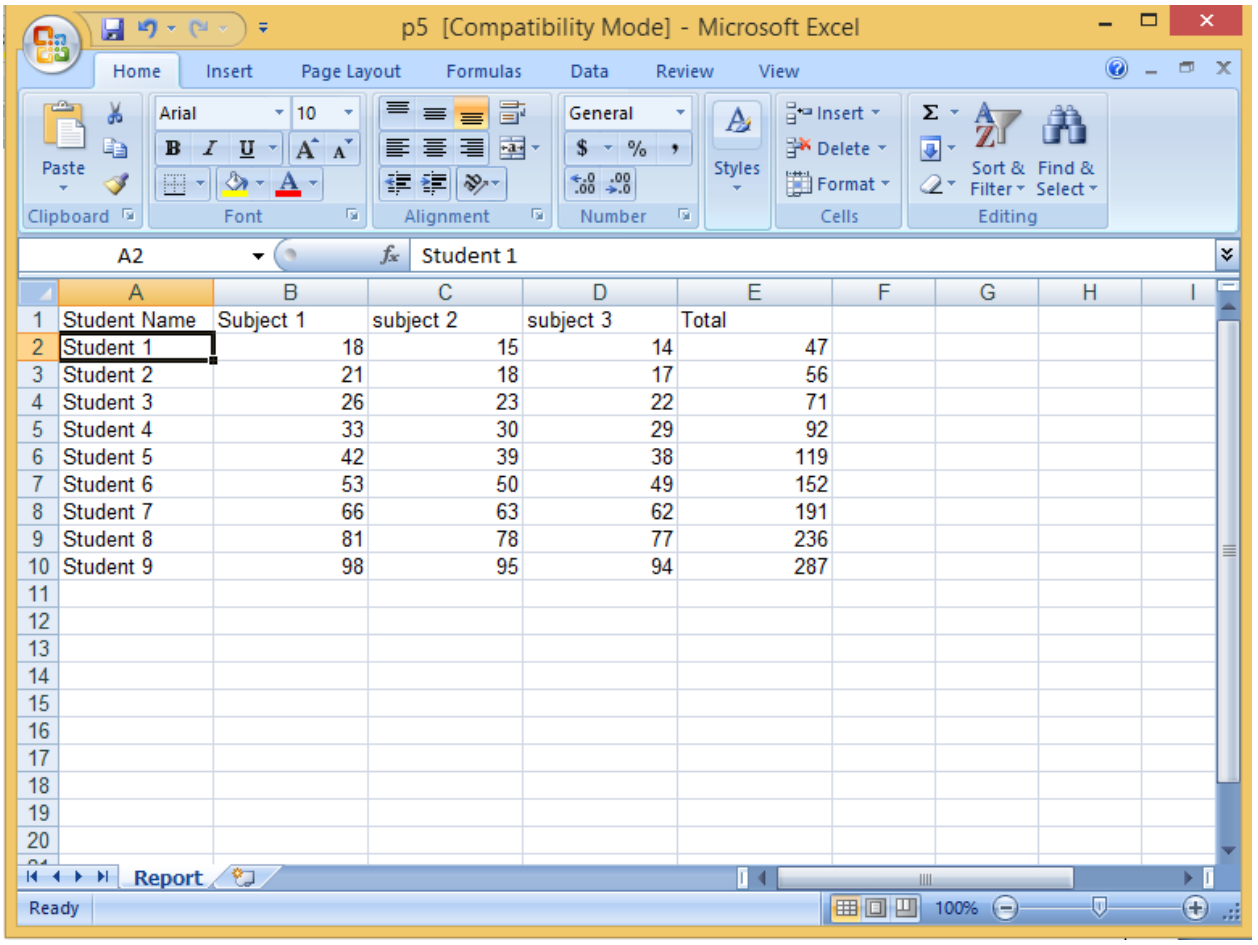
```
package tenRecordExcel;
import java.io.File;
import java.io.IOException;
import jxl.Workbook;
import jxl.write.Label;
import jxl.write.Number;
import jxl.write.WritableSheet;
import jxl.write.WritableWorkbook;
import jxl.write.WriteException;
import jxl.write.biff.RowsExceededException;

public class xslData {

    private String inputFile;
```

```
public void setOutputFile(String inputFile) {
this.inputFile = inputFile;
}
public void write() throws IOException, WriteException {
File file = new File(inputFile);
WritableWorkbook workbook = Workbook.createWorkbook(file);
workbook.createSheet("Report", 0);
WritableSheet excelSheet = workbook.getSheet(0);
createLabel(excelSheet);
createContent(excelSheet);
workbook.write();
workbook.close();
}
private void createLabel(WritableSheet sheet)
throws WriteException {
addCaption(sheet, 0, 0, "Student Name");
addCaption(sheet, 1, 0, "Subject 1");
addCaption(sheet, 2, 0, "subject 2");
addCaption(sheet, 3, 0, "subject 3");
addCaption(sheet, 4, 0, "Total");
}
private void createContent(WritableSheet sheet) throws WriteException,
RowsExceededException {
for (int i = 1; i < 10; i++) {
addLabel(sheet, 0, i, "Student " + i);
addNumber(sheet, 1, i, ((i*i)+17));
addNumber(sheet, 2, i, ((i*i)+14));
addNumber(sheet, 3, i, ((i*i)+13));
int total;
total=3*(i*i)+17+14+13;
addNumber(sheet,4,i,total);
}
}
private void addCaption(WritableSheet sheet, int column, int row, String s)
throws RowsExceededException, WriteException {
Label label;
label = new Label(column, row, s);
sheet.addCell(label);
}
private void addNumber(WritableSheet sheet, int column, int row,
Integer integer) throws WriteException, RowsExceededException {
Number number;
number = new Number(column, row, integer);
```

```
        sheet.addCell(number);
        }
        private void addLabel(WritableSheet sheet, int column, int row, String s)
        throws WriteException, RowsExceededException {
        Label label;
        label = new Label(column, row, s);
        sheet.addCell(label);
        }
        public static void main(String[] args) throws WriteException, IOException
{
        xslData test = new xslData();
        test.setOutputFile("C:\\Users\\rhucha1\\eclipse-workspace\\Pract5\\p5.xls");
        test.write();
        System.out.println("Please check the result file under
C:\\Users\\rhucha1\\eclipse-workspace\\Pract5\\p5.xls");
        }

}
```

13. Create a file in a folder in any drive for showing the excel sheet(output).



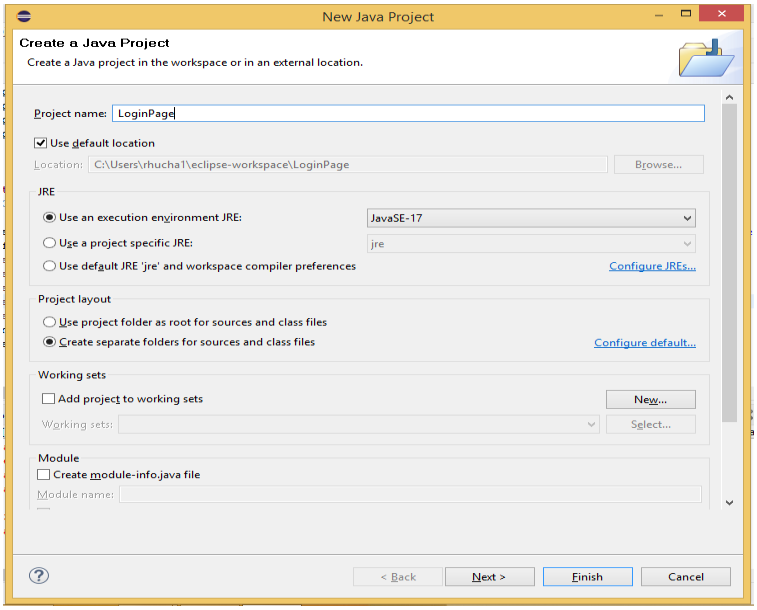


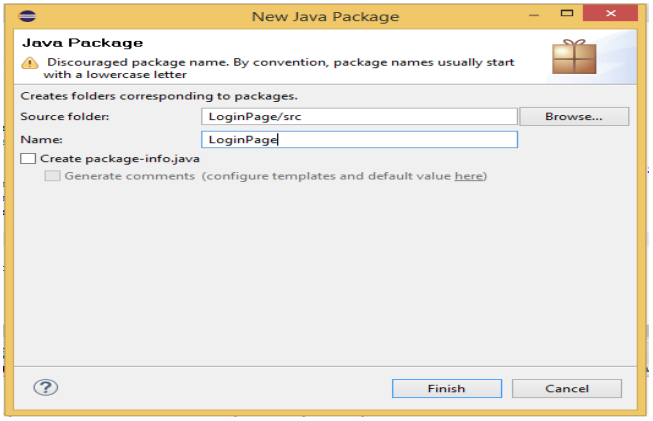
	A	B	C	D	E
1	Student Name	Subject 1	subject 2	subject 3	Total
2	Student 1	18	15	14	47
3	Student 2	21	18	17	56
4	Student 3	26	23	22	71
5	Student 4	33	30	29	92
6	Student 5	42	39	38	119
7	Student 6	53	50	49	152
8	Student 7	66	63	62	191
9	Student 8	81	78	77	236
10	Student 9	98	95	94	287

Practical no 6

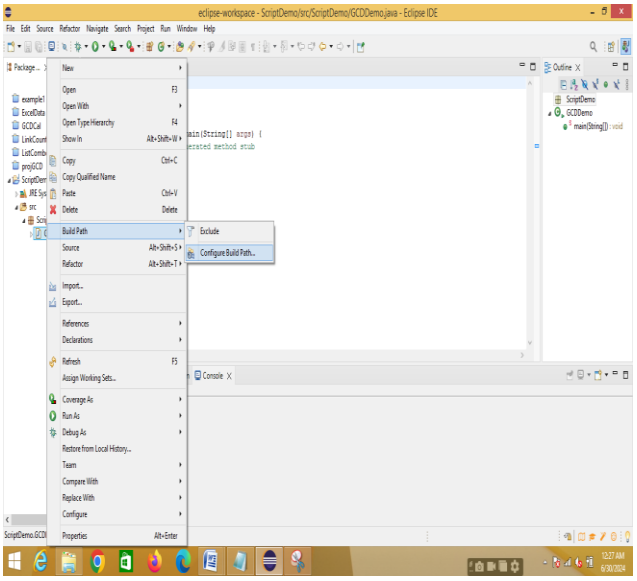
Aim: Write a program using Selenium WebDriver to select the number of students who have scored more than 60 in any one subject (or all subjects). Perform data extraction and analysis.

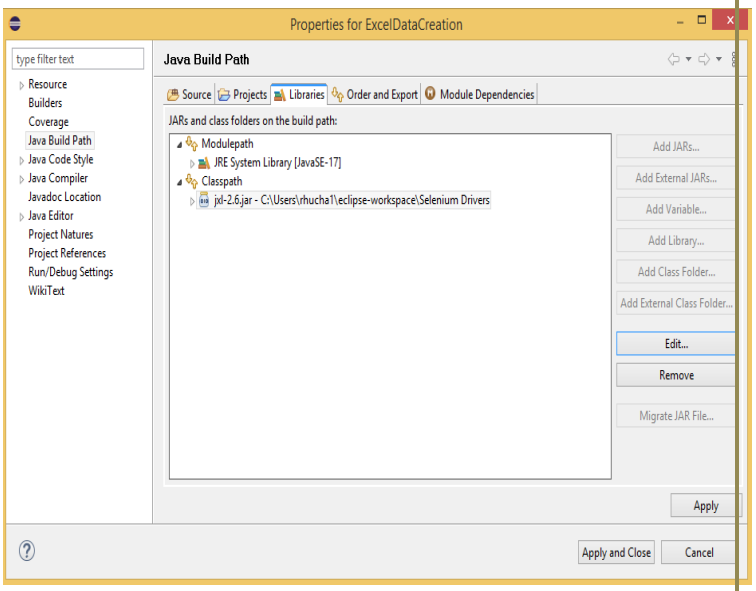
- **Follow the following steps:**
  1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just “project”)
  2. In Select Wizard –> Click Java –> “Java Project”
  3. Give the project name (e.g. score)
  4. Click Finish – Click Yes





5. Right Click “score” project
6. Click “Java Build Path”

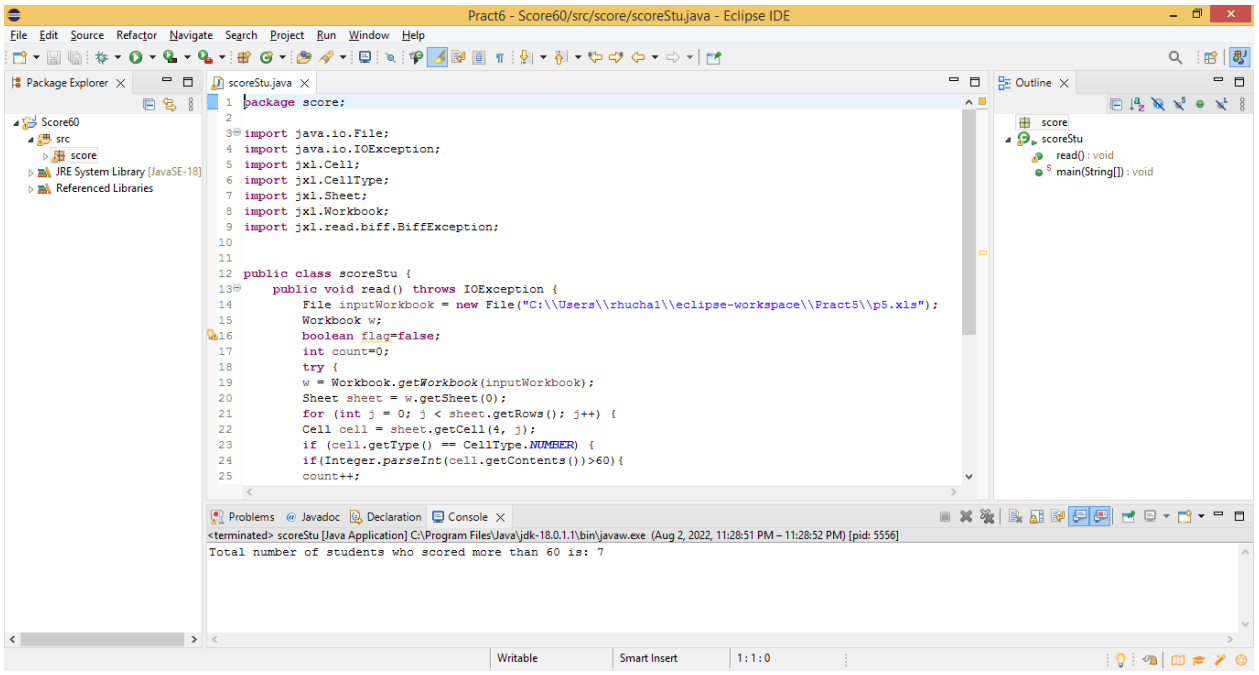


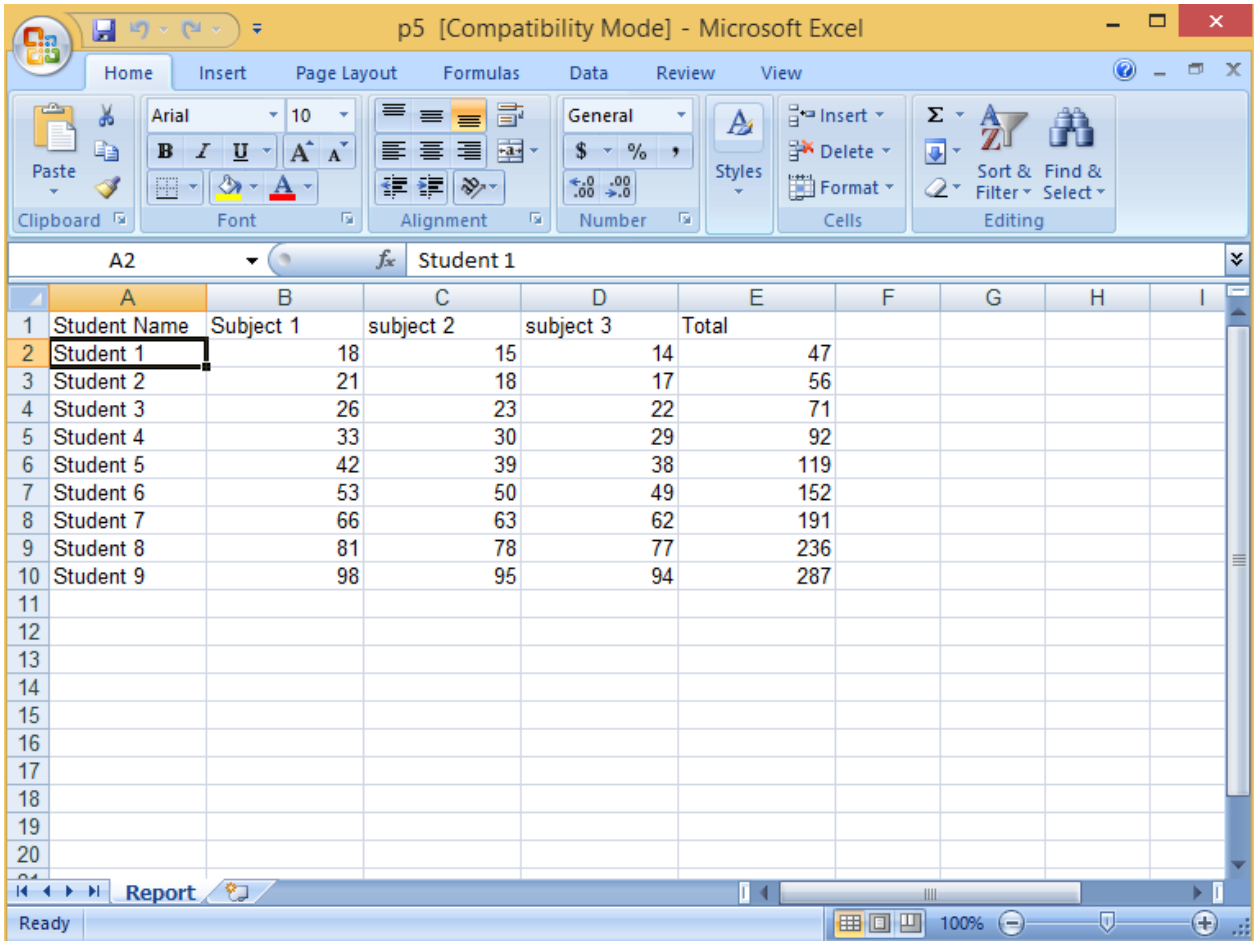


7. Click Libraries tab
8. Click “Add External JARs” button
9. Add two external jar files: jxl.2.6.jar file. Click OK
10. Create a new class file as “scoreStu” in the “score” by right click on src folder.
11. **Write the code-**

```
package score;

import java.io.File;
import java.io.IOException;
import jxl.Cell;
import jxl.CellType;
import jxl.Sheet;
import jxl.Workbook;
import jxl.read.biff.BiffException;


public class scoreStu {
	public void read() throws IOException {
		File inputWorkbook = new File("C:\\Users\\rhucha1\\eclipse-
workspace\\Pract5\\p5.xls");
		Workbook w;
		boolean flag=false;
		int count=0;
		try {
		w = Workbook.getWorkbook(inputWorkbook);
		Sheet sheet = w.getSheet(0);
		for (int j = 0; j < sheet.getRows(); j++) {
		Cell cell = sheet.getCell(4, j);
		if (cell.getType() == CellType.NUMBER) {
		if(Integer.parseInt(cell.getContents())>60){
		count++;
		}
		}
		}
		System.out.println("Total number of students who scored more than 60
is: " +count);
		} catch (BiffException e) {
		e.printStackTrace();
		}
		}
		public static void main(String[] args) throws IOException {
		scoreStu test = new scoreStu();
		test.read();
		}

}
```

OUTPUT :





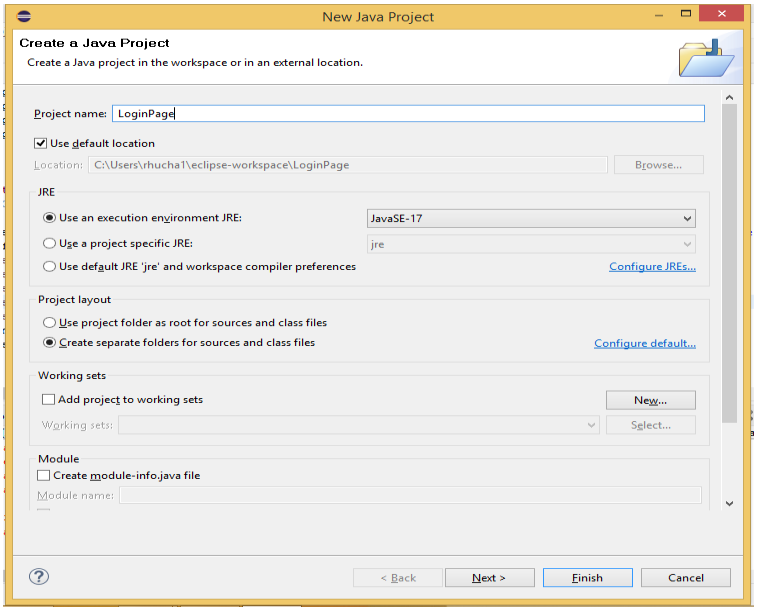
	A	B	C	D	E
1	Student Name	Subject 1	subject 2	subject 3	Total
2	Student 1	18	15	14	47
3	Student 2	21	18	17	56
4	Student 3	26	23	22	71
5	Student 4	33	30	29	92
6	Student 5	42	39	38	119
7	Student 6	53	50	49	152
8	Student 7	66	63	62	191
9	Student 8	81	78	77	236
10	Student 9	98	95	94	287

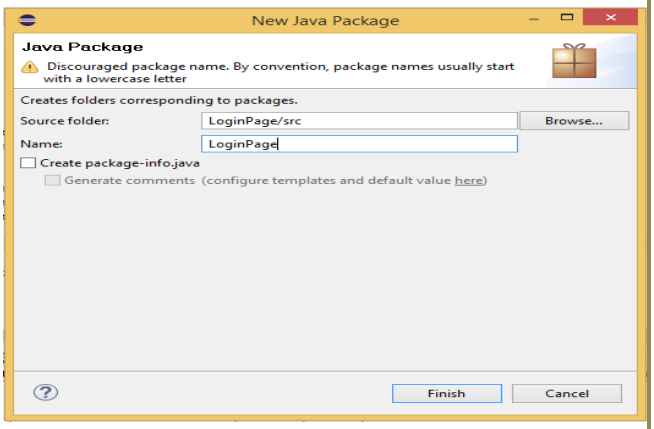
PRACTICAL NO 7

AIM: Write a program using Selenium WebDriver to provide the total number of objects (links) present or available on a web page. Perform object identification and counting.

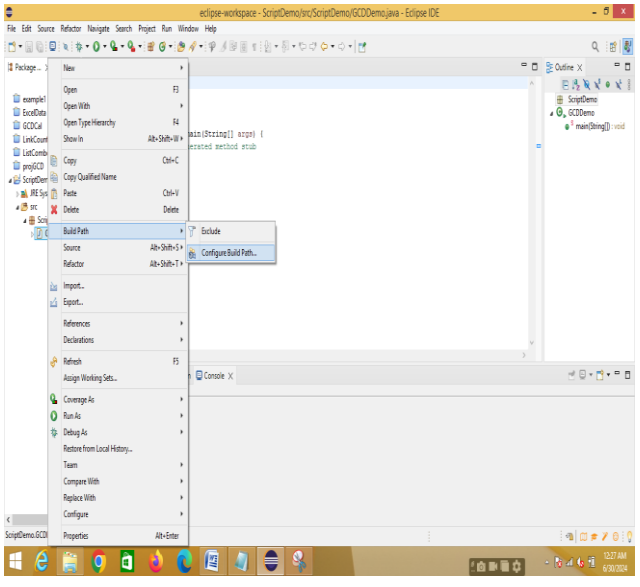
❖ **Follow the following steps:**

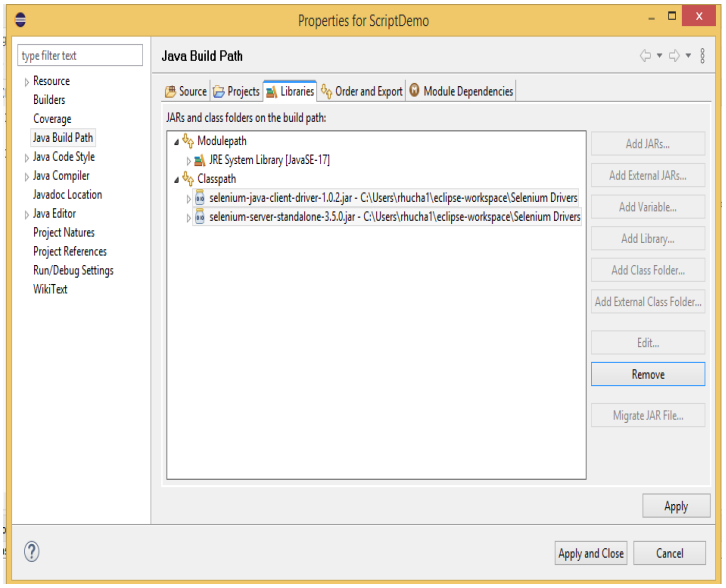
1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just "project")
2. In Select Wizard –> Click Java –> "Java Project"
3. Give the project name (e.g. TestWebPage)





4. Do not create module
5. Click Finish – Click Yes
6. Right Click "TestWebPage" create package
7. Click "Java Build Path"

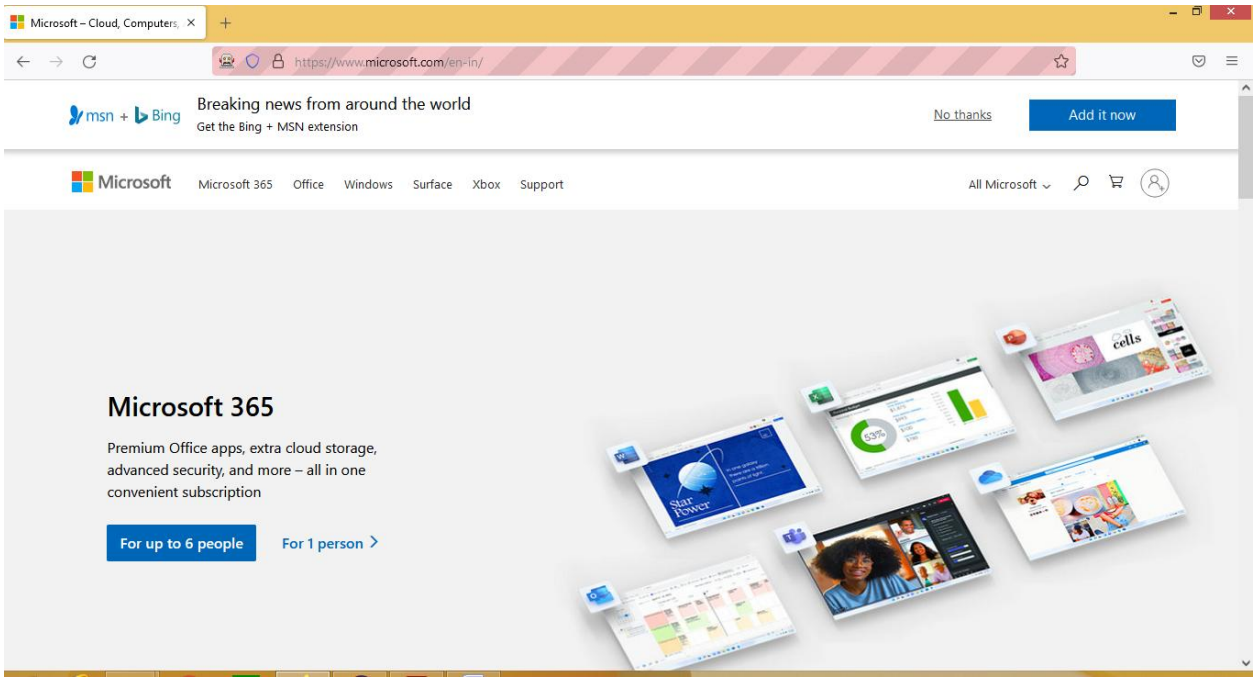




8. Click Libraries tab
9. Click “Add External JARs” button
10. Add two external jar files: selenium-java-client-driver-1.0.2 & selenium-server-standalone-3.5.0
11. Click OK
12. Create a new class file as “CheckLinks” by right click on src folder.
13. **Write the code-**

```
package TestWebPage;

import org.openqa.selenium.By;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;

public class CheckLinks {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		System.setProperty("webdriver.gecko.driver",
"C:\\Users\\rhucha1\\eclipse-workspace\\Selenium Drivers\\geckodriver.exe");
		FirefoxDriver driver = new FirefoxDriver();
		driver.manage().window().maximize();
		driver.get("http://www.microsoft.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++)
		{
		System.out.println("Link" +i+ "Link name " +links.get(i).getText());
		}
	}

}
```

Output:



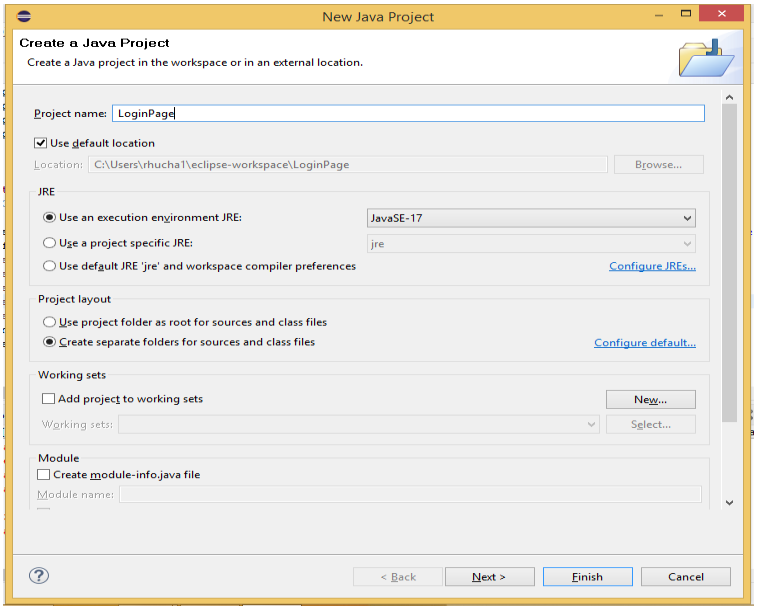

```
1660035683103   mozrunner::runner       INFO    Running command: "C:\\Program Files\\Mozilla Firefox\\firefox.exe" "-marionette" "-foreground" "-no-remote" "-p
1660035683686   Marionette      INFO    Marionette enabled
1660035683695   Marionette      INFO    Listening on port 49259
JavaScript error: resource://gre/modules/XULStore.jsm, line 68: Error: Can't find profile directory.
console.warn: SearchSettings: "get: No settings file exists, new profile?" (new NotFoundError("Could not open the file at C:\\Users\\rhucha1\\AppData\\Local\\T
Aug 09, 2022 2:31:28 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
JavaScript warning: https://fpt.microsoft.com/tags?session_id=2df3f5e1-eea2-475d-8f43-42ed80b21910, line 5: WEBGL_debug_renderer_info is deprecated in Firefox
JavaScript error: https://fpt.microsoft.com/tags?session_id=2df3f5e1-eea2-475d-8f43-42ed80b21910, line 5: NS_ERROR_FAILURE:
Total links are 120
JavaScript warning: https://www.microsoft.com/etc.clientlibs/microsoft/components/structure/page/clientlibs/experimentation.ACSHASH895e2a12062f1ee44d7d72d26690
Link0Link name Add it now
Link1Link name
Link2Link name Microsoft
Link3Link name Microsoft 365
Link4Link name Office
Link5Link name Windows
Link6Link name Surface
Link7Link name Xbox
Link8Link name Support
Link9Link name
Link10Link name
Link11Link name
Link12Link name
Link13Link name
Link14Link name
Link15Link name
Link16Link name
Link17Link name
Link18Link name
Link19Link name
Link20Link name
Link21Link name
```

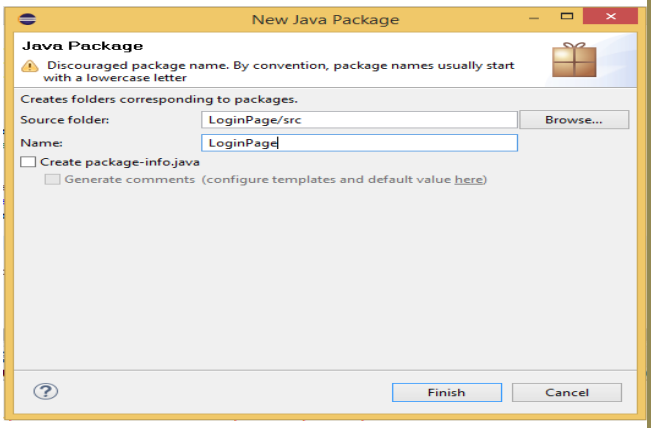
Practical no 8

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

- **Follow the following steps:**
  1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just “project”)
  2. In Select Wizard –> Click Java –> “Java Project”

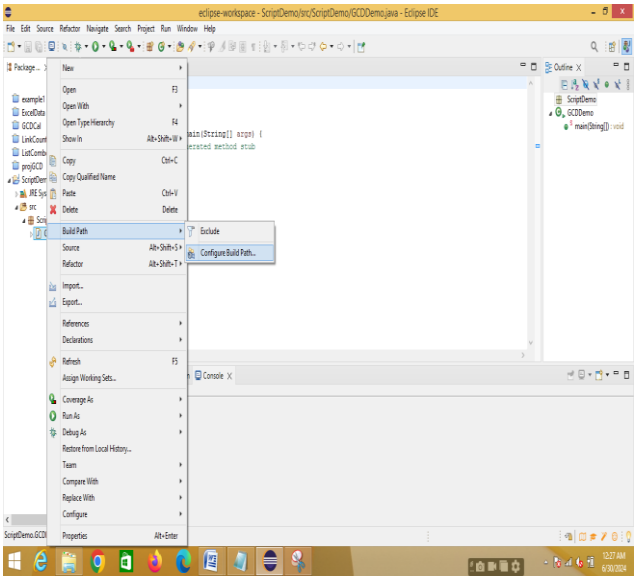
3. Give the project name (e.g. ListCombo)
4. Click Finish – Click Yes

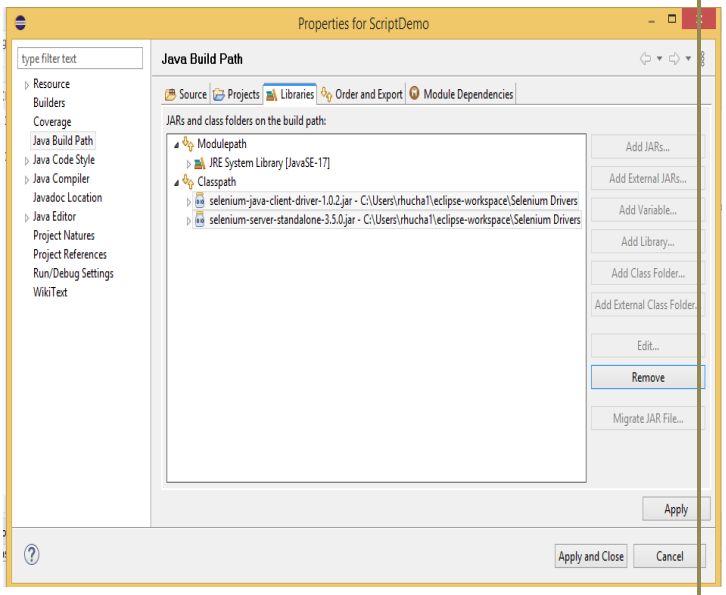




5. Right Click "ListCombo" package
6. Click "Java Build Path"

7. Click Libraries tab

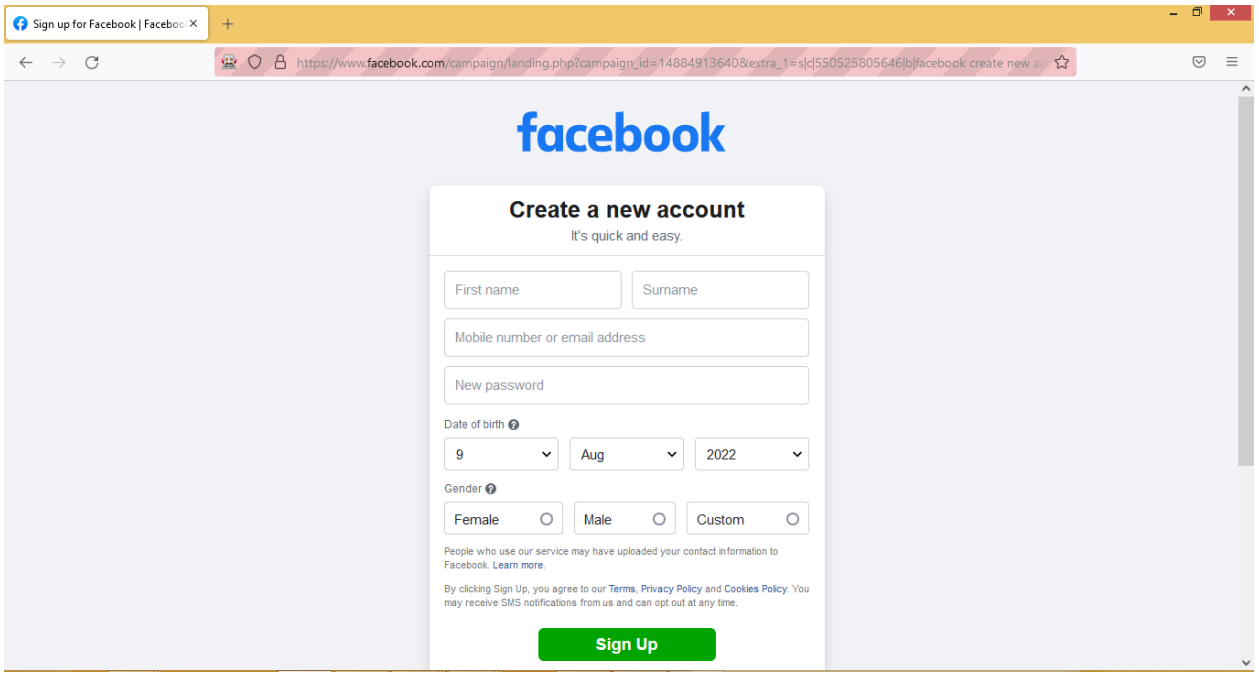


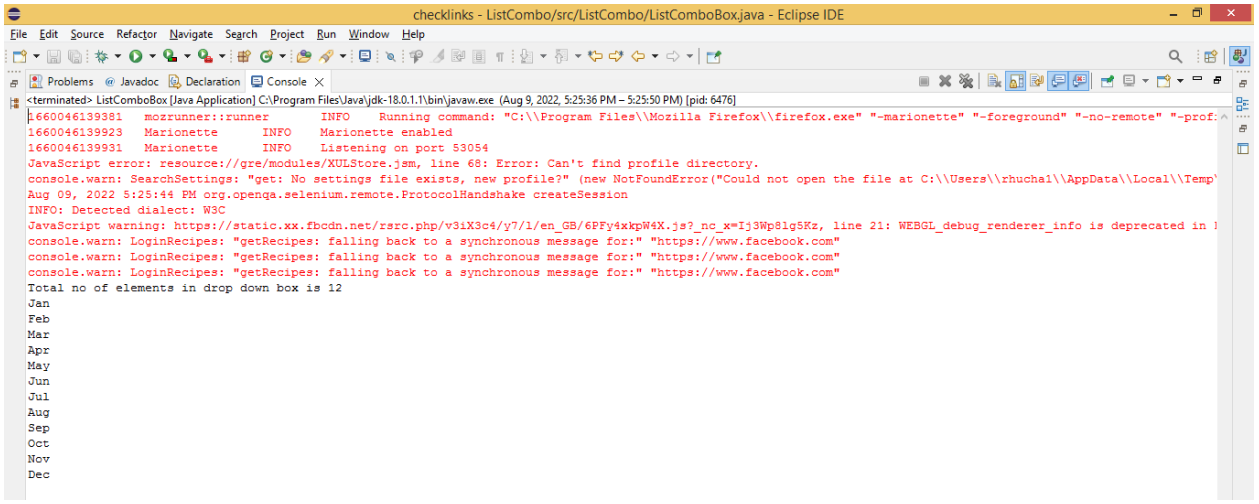


8. Click "Add External JARs" button
9. Add two external jar files: selenium-java-client-driver-1.0.2 & selenium-server-standalone-3.1.0
10. Click OK
11. Create a new class file as "ListComboBox" by right click on src folder.
12. **Write the code-**

```
package ListCombo;

import java.util.List;
import org.openqa.selenium.By;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.support.ui.Select;

public class ListComboBox {

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

		System.setProperty("webdriver.gecko.driver",
"C:\\Users\\rhucha1\\eclipse-workspace\\Selenium Drivers\\geckodriver.exe");
		FirefoxDriver driver = new FirefoxDriver();
		driver.manage().window().maximize();
		driver.get("https://facebook.com");
		Select oSelect = new
Select(driver.findElement(By.xpath("//select[@id='month']")));

		List<WebElement> oSize = oSelect.getOptions();
		int listsize = oSize.size();
		System.out.println("Total no of elements in drop down box is "
+listsize);
		for(int i=0;i<listsize;i++)
		{
		String s = oSelect.getOptions().get(i).getText();
		System.out.println(s);
		}
	}
}
```

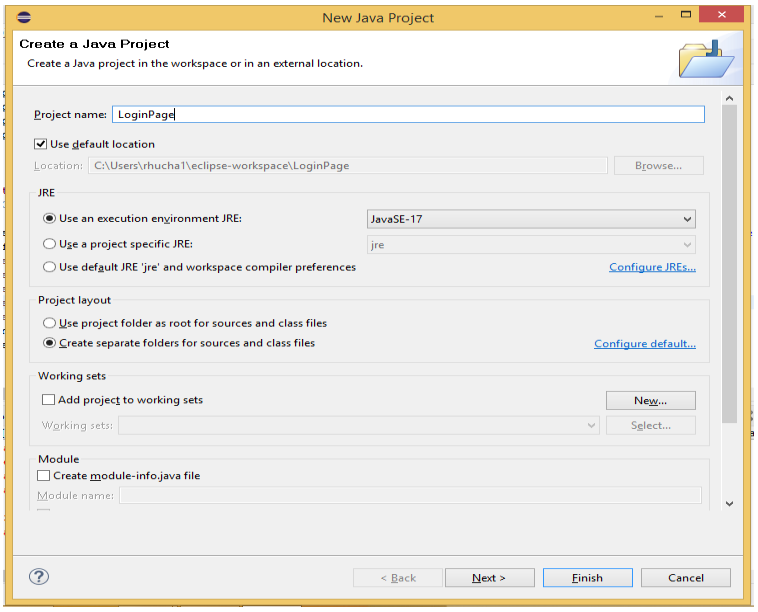
Output :

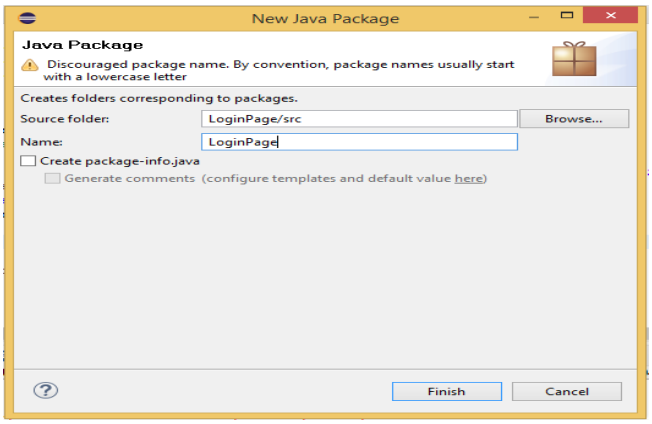




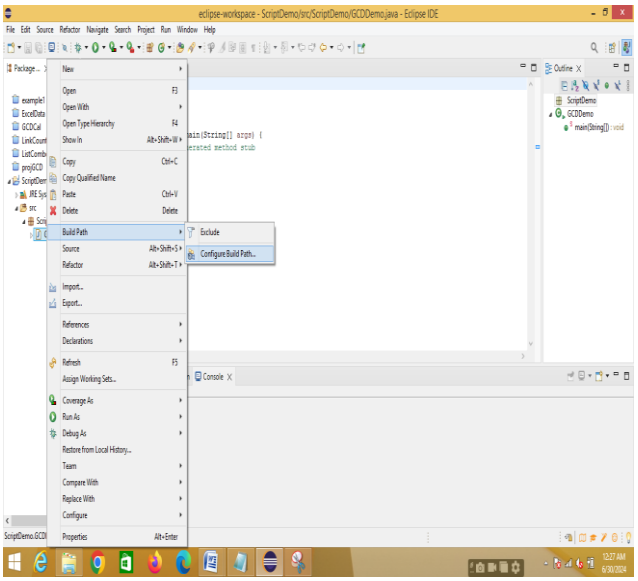
AIM: Write and test a program to provide total number of objects (links) present / available on the page.

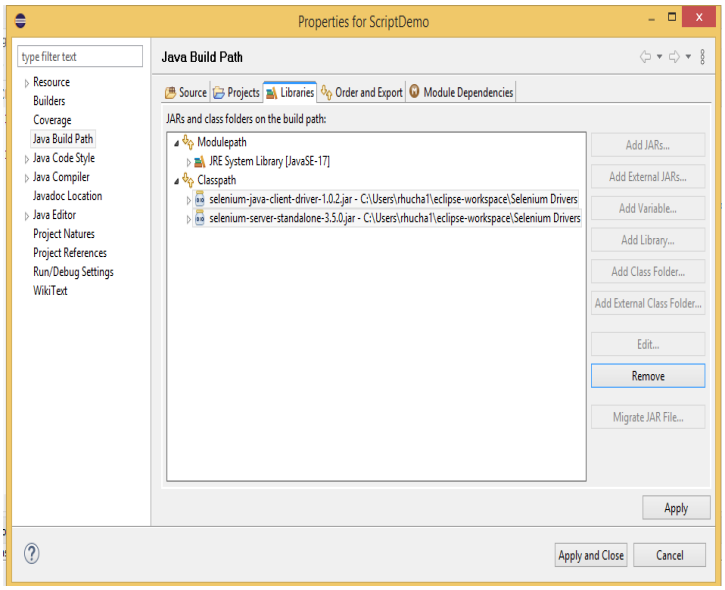
- **Follow the following steps:**
  1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just "project")
  2. In Select Wizard –> Click Java –> "Java Project"
  3. Give the project name (e.g. TestWebPage)
  4. Do not create module
  5. Click Finish – Click Yes





6. Right Click "TestWebPage" create package
7. Click "Java Build Path"
8. Click Libraries tab



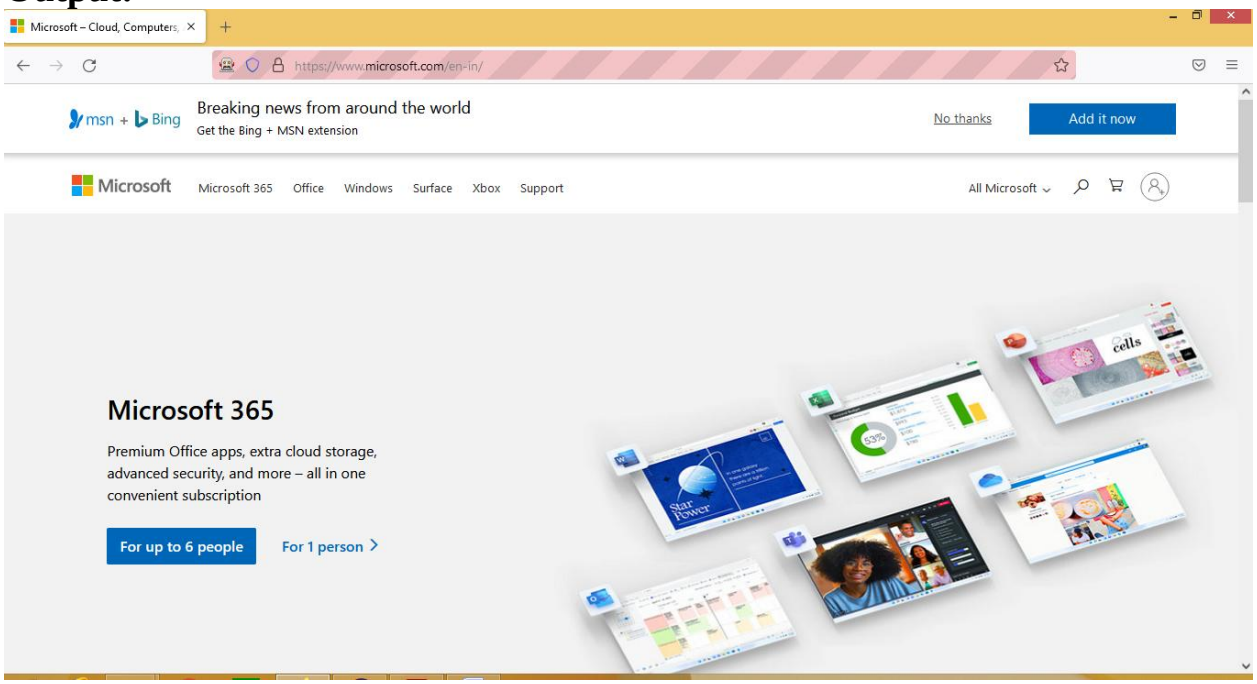


9. Click "Add External JARs" button
10. Add two external jar files: selenium-java-client-driver-1.0.2 & selenium-server-standalone-3.5.0
11. Click OK
12. Create a new class file as "CheckLinks" by right click on src folder.
13. **Write the code-**

```
package TestWebPage;
```

```
import org.openqa.selenium.By;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;

public class CheckLinks {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		System.setProperty("webdriver.gecko.driver",
"C:\\Users\\rhucha1\\eclipse-workspace\\Selenium Drivers\\geckodriver.exe");
		FirefoxDriver driver = new FirefoxDriver();
		driver.manage().window().maximize();
		driver.get("http://www.microsoft.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++)
		{
		System.out.println("Link" +i+ "Link name " +links.get(i).getText());
		}
	}

}
```

Output:



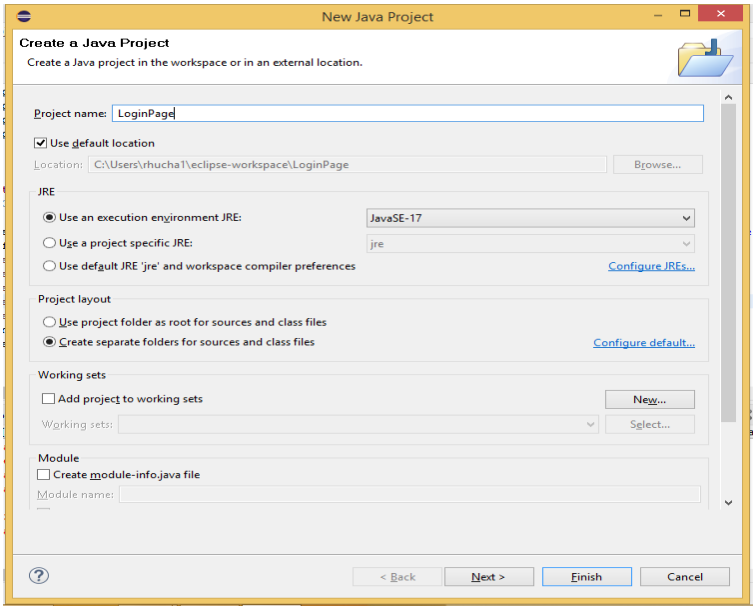
```
1660035683103   mozrunner::runner       INFO    Running command: "C:\\Program Files\\Mozilla Firefox\\firefox.exe" "-marionette" "-foreground" "-no-remote" "-p
1660035683686   Marionette      INFO    Marionette enabled
1660035683695   Marionette      INFO    Listening on port 49259
JavaScript error: resource://gre/modules/XULStore.jsm, line 68: Error: Can't find profile directory.
console.warn: SearchSettings: "get: No settings file exists, new profile?" (new NotFoundError("Could not open the file at C:\\Users\\rhucha1\\AppData\\Local\\T
Aug 09, 2022 2:31:28 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
JavaScript warning: https://fpt.microsoft.com/tags?session_id=2df3f5e1-eea2-475d-8f43-42ed80b21910, line 5: WEBGL_debug_renderer_info is deprecated in Firefox
JavaScript error: https://fpt.microsoft.com/tags?session_id=2df3f5e1-eea2-475d-8f43-42ed80b21910, line 5: NS_ERROR_FAILURE:
Total links are 120
JavaScript warning: https://www.microsoft.com/etc.clientlibs/microsoft/components/structure/page/clientlibs/experimentation.ACSHASH895e2a12062f1ee44d7d72d26690
Link0Link name Add it now
Link1Link name
Link2Link name Microsoft
Link3Link name Microsoft 365
Link4Link name Office
Link5Link name Windows
Link6Link name Surface
Link7Link name Xbox
Link8Link name Support
Link9Link name
Link10Link name
Link11Link name
Link12Link name
Link13Link name
Link14Link name
Link15Link name
Link16Link name
Link17Link name
Link18Link name
Link19Link name
Link20Link name
Link21Link name
```

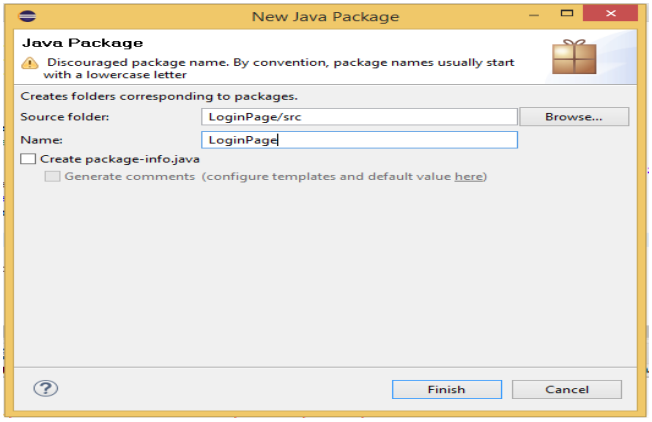
PRACTICAL NO 9

AIM: Write a program using Selenium WebDriver to count the number of checkboxes on a web page, including checked and unchecked counts. Perform checkbox identification and counting.

Follow the following steps:

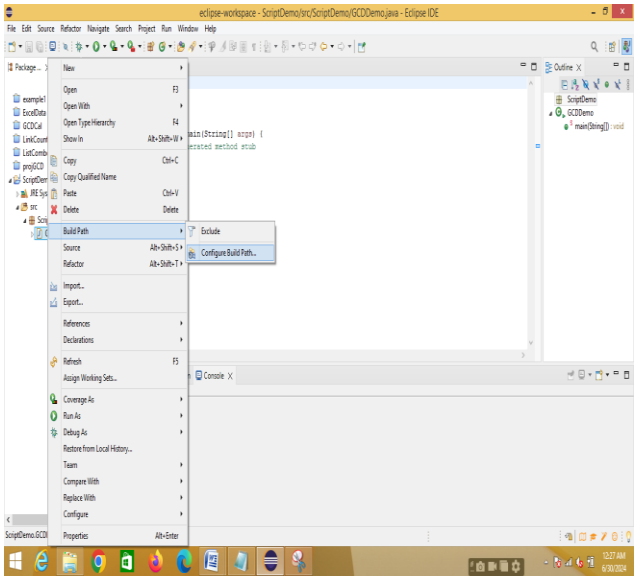
1. Go to Eclipse –> Click File –> New –> Project (from various options need to select just “project”)
2. In Select Wizard –> Click Java –> “Java Project”
3. Give the project name (e.g. checkbox)

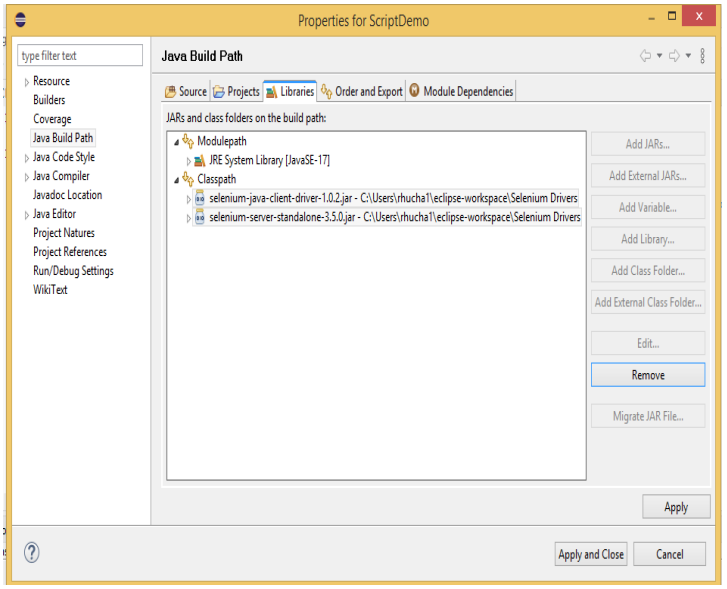




4. Click Finish – Click Yes
5. Right Click “checkbox” package

6. Click “Java Build Path”





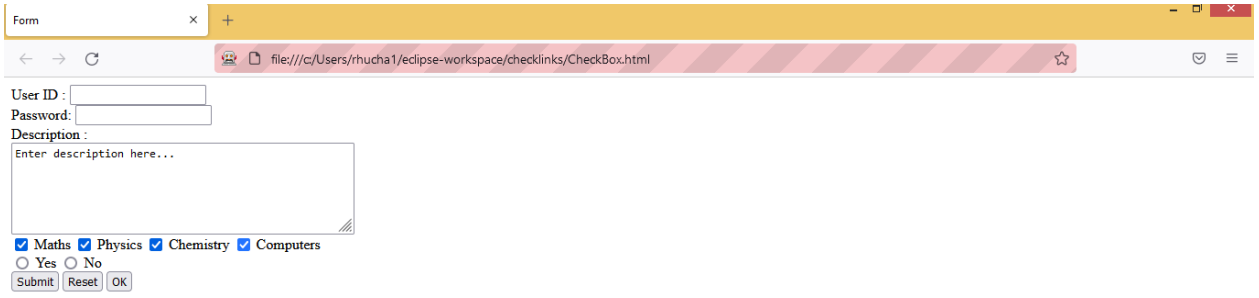
7. Click Libraries tab
8. Click “Add External JARs” button
9. Add two external jar files: selenium-java-client-driver-1.0.2 & selenium-server-standalone-3.5.0
10. Click OK
11. Create a new class file as “CountCheckbox” by right click on src folder.
12. Write the code

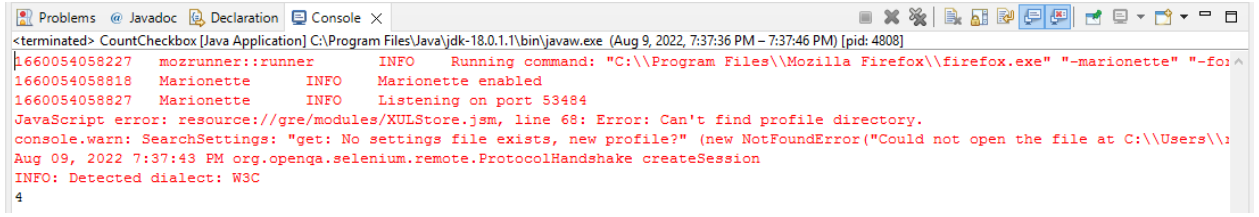
CountCheckbox.java

```
package checkbox;
import java.util.List;
import org.openqa.selenium.By;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
public class CountCheckbox {

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

	System.setProperty("webdriver.gecko.driver","C:\\Users\\rhucha1\\eclipse-workspace\\Selenium Drivers\\geckodriver.exe");
		FirefoxDriver driver=new FirefoxDriver();
		driver.manage().window().maximize();
		driver.get("https://mdbootstrap.com/docs/standrad/forms/checkbox/");
		List<WebElement> elements=driver.findElements(By.xpath("//Input[@type='checkbox']"));
```

```
        int checkedCount=0;
        int uncheckedCount=0;

                for(int i=0;i<webElements.size();i++)
                {
                        if(webElements.get(i).isSelected()==true)
                        checkedCount++;
                        else
                        uncheckedCount++;
                }
                System.out.println("Number of checked checkboxes are
"+checkedCount);
                System.out.println("Number of unchecked checkboxes are
"+uncheckedCount);

        }
}
```

Ouput:





PRACTICAL NO 10

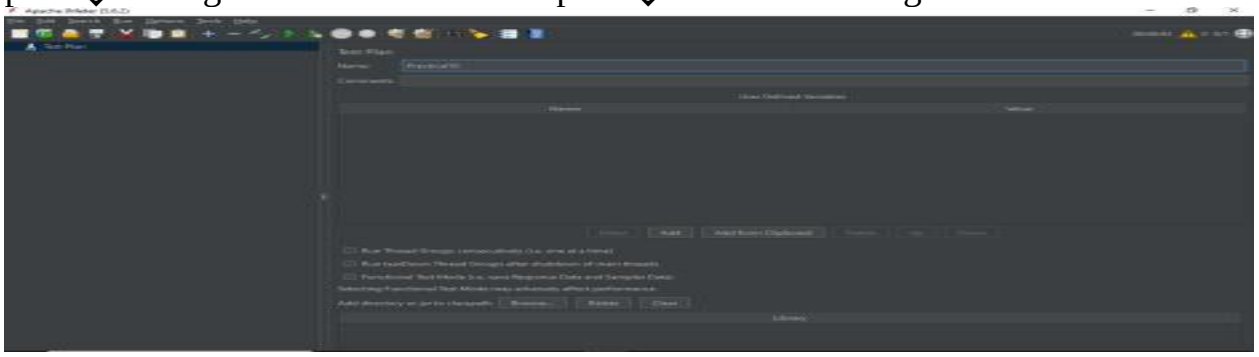
Aim: Perform load testing on a web application using JMeter. Generate and analyze load scenarios. Additionally, explore bug tracking using Bugzilla as a tool for logging and tracking software defects.

PRE-REQUISITES:
1) To Download "JDK":
• Visit
https://www.oracle.com/technetwork/java/javase/downloads/jdk12- downloads-5295953.html
• Download this file "jdk-12.0.2_windows-x64_bin.exe"
and install it. 2) To Download "Apache JMeter":
• Visit https://jmeter.apache.org/download_jmeter.cgi
• Under section "Apache JMeter 5.6.2 (Requires Java 8+)"
• Under sub-section "Binaries", download "apache-jmeter-5.6.2.zip" file. • Installation:
➢ Extract the "apache-jmeter-5.6.2.zip" file.
➢ Navigate to: apache-jmeter-5.6.2 > bin > the "ApacheJMeter.jar" file is your working space.

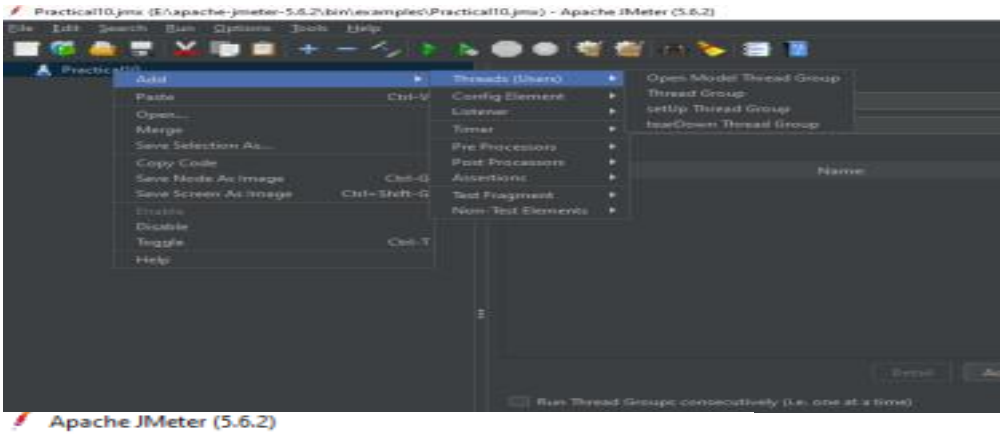
Apache JMeter may be used to test functional and performance both on static and dynamic resources (files, Servlets, Perl scripts, Java Objects, Data Bases and Queries, FTP Servers and more). It can be used to simulate a heavy load on a server, network or object to test its strength or to analyze overall performance under different load types. You can also use it perform a functional test on websites, databases, LDAPs, webservices etc.

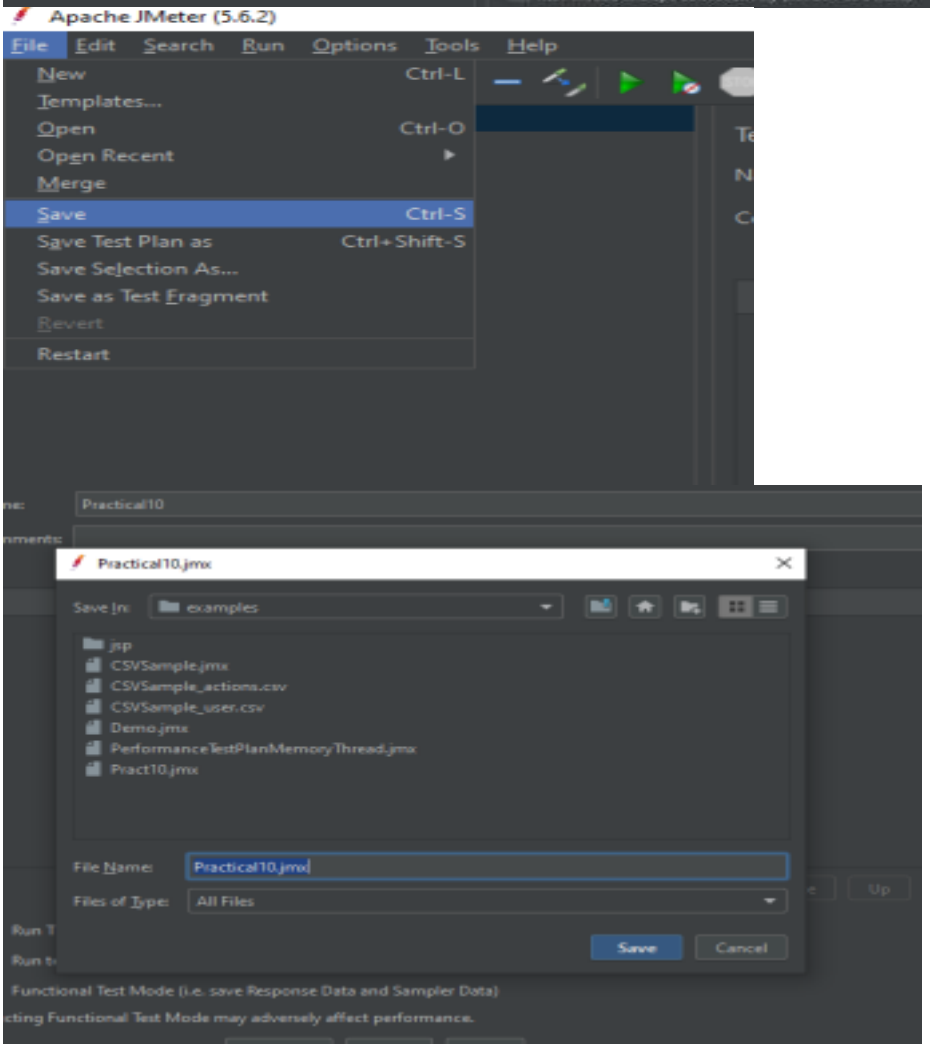
Load Testing /Performance Testing using Apache –jmeter-5.0

Step1: Open Jmeter folder **�** bin **�** Open executable jar file **�** Create test plan **�** Change name of created test plan **�** Name according to the websites



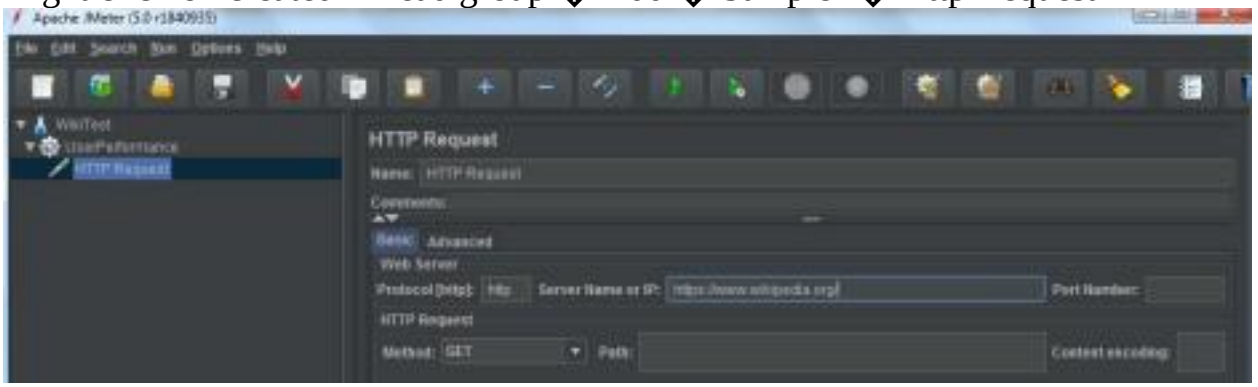
Step2: Create thread group
Right click on project **�** Add **�** Threads **�** Thread Groups Name it according to desire.





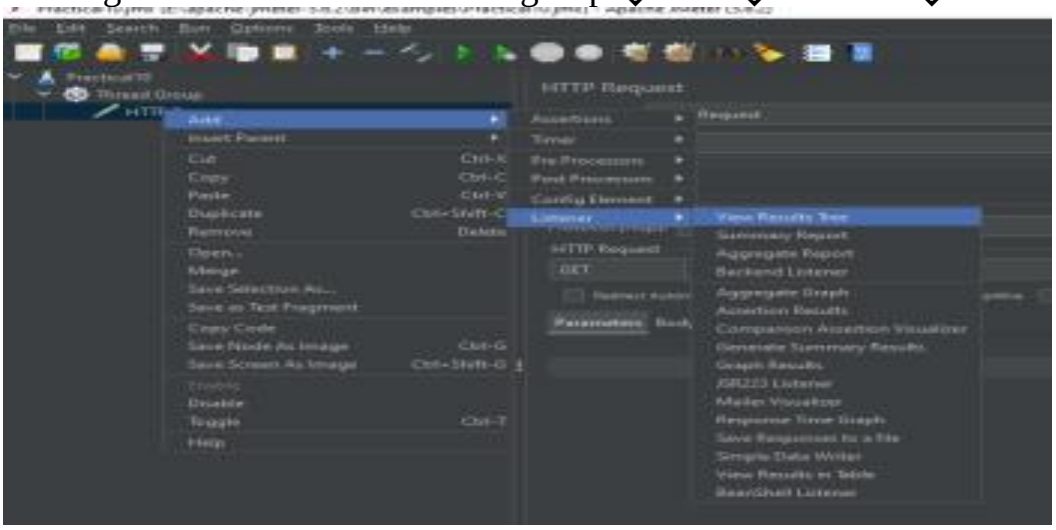
Step3: Add Http Request

Right click on created Thread group ➔ Add ➔ Sampler ➔ Http Request

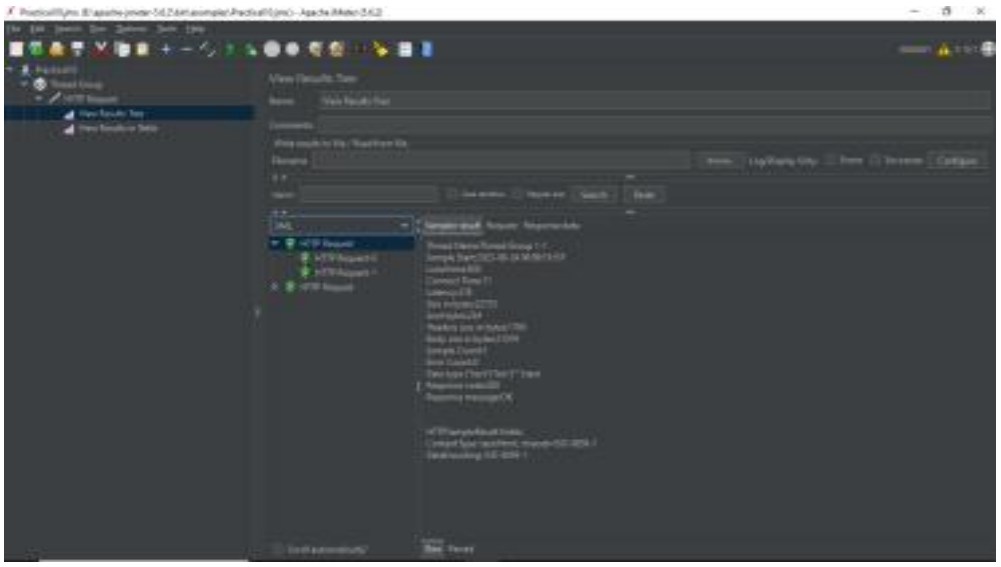


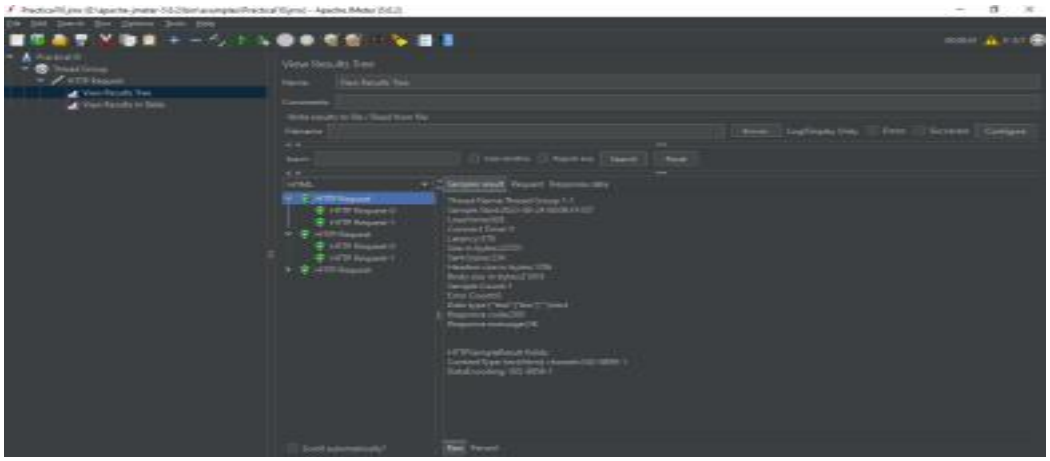
Step4: Add Results for output

Right click on created Thread group ➔ Add ➔ Listener ➔ View Result Tree



Step5: Run





Step 6: Add Results for output

Right click on created Thread group ➔ Add ➔ Listener ➔ View Result Table