

Software Testing Quality Assurance Lab

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MASTER**

**IN
COMPUTER APPLICATION**

Year 2023-2024

By

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Semester- 3 Under the Guidance of

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CERTIFICATE

This to certify that, **Ravishankar Jaiswal** appearing **Master in Computer Application (Semester 3) (129211)**: has satisfactory completed the prescribed practical of **MCAL35 Software Testing & Quality Assurance Lab** as laid down by the University of Mumbai for the academic year 2023-24

Teacher in charge

Examiners

Coordinator
IDOL, MCA
University of Mumbai

Date: -

Place: -

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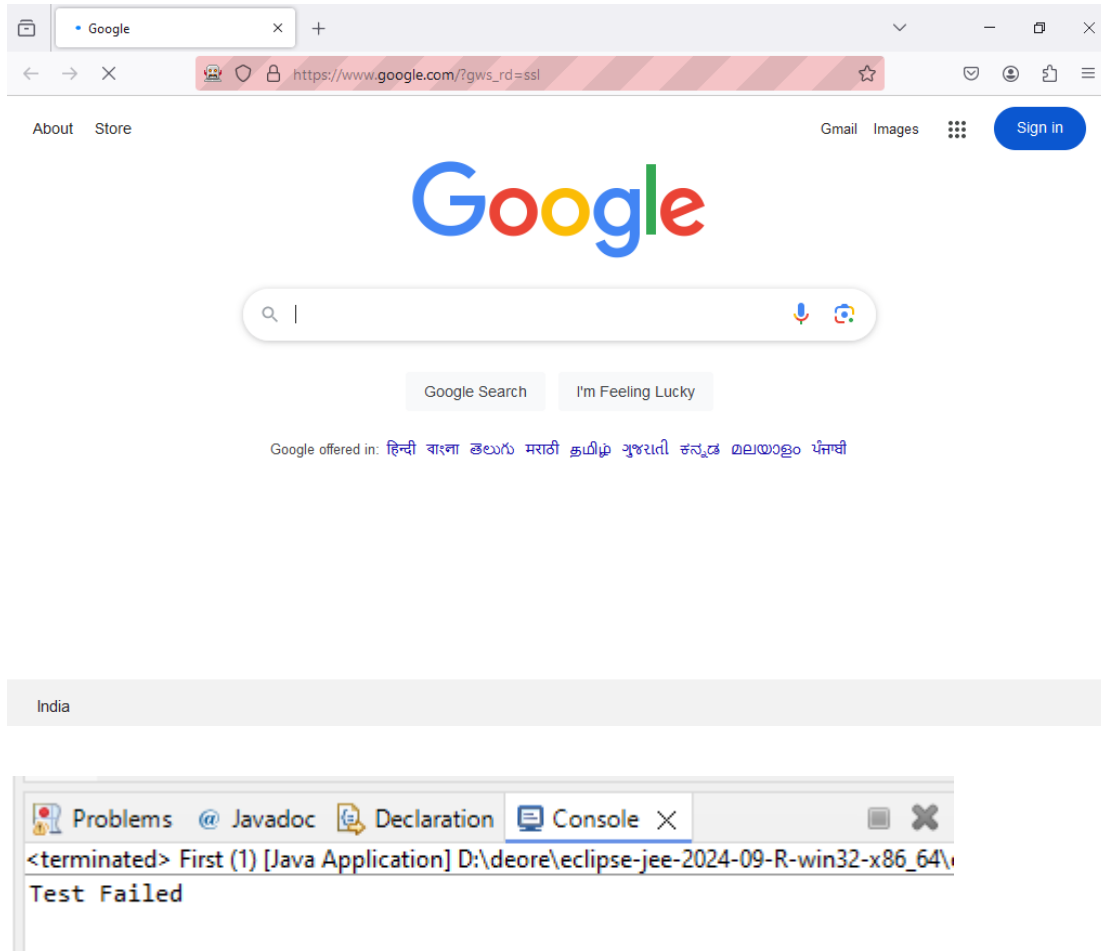
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Practical No: 01

Aim: To create your First Selenium Automation Test Script.

```
package seleniumproject;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class First
{
    public static void main(String[] args) {
        // declaration and instantiation of objects/variables
        System.setProperty("webdriver.gecko.driver", "D:\\CromeDriver\\geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        //Launch website Introduction to Selenium
        String baseUrl = "http://www.google.com/";
        String expectedTitle = "Welcome: Mercury Tours";
        String actualTitle = "";
        driver.get(baseUrl);
        actualTitle = driver.getTitle();
        if (actualTitle.contentEquals(expectedTitle)){
            System.out.println("Test Passed!");
        } else {
            System.out.println("Test Failed");
        }
        //close Fire fox
        driver.close();
    }
}
```

Output:

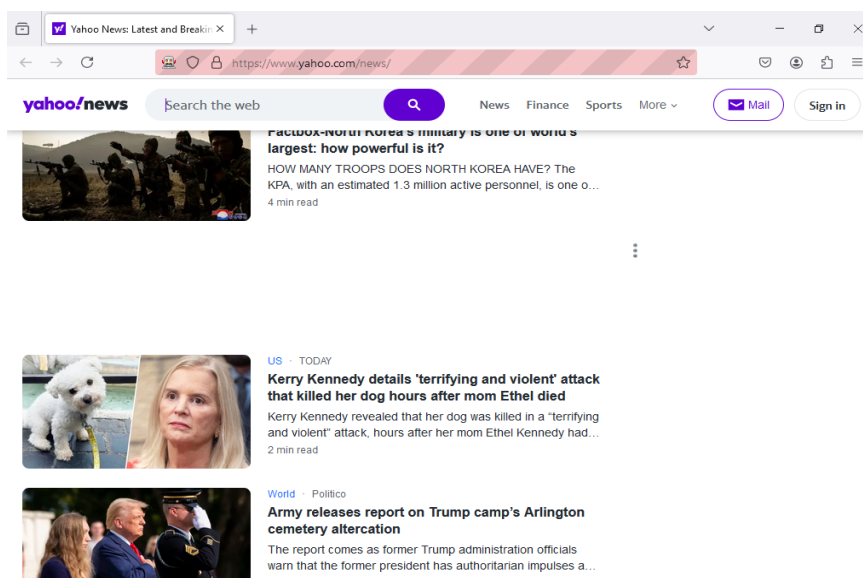


Practical No: 02

Aim: Implementing Web Drivers on Multiple Browser i.e chrome

```
import org.openqa.selenium.By;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class Third {
    public static void main(String[] args) {
        // System Property for Chrome Driver
        System.setProperty("webdriver.gecko.driver", "D:\\CromeDriver\\geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        // Launch Website
        driver.navigate().to("http://www.news.yahoo.com/");
        //Maximize the browser
        driver.manage().window().maximize();
        //Scroll down the webpage by 5000 pixels
        JavascriptExecutor js = (JavascriptExecutor) driver;
        js.executeScript("scrollBy(0, 5000)");
        // Click on the Search button
        driver.findElement(By.linkText("Core Java")).click();
    }
}
```

Output:

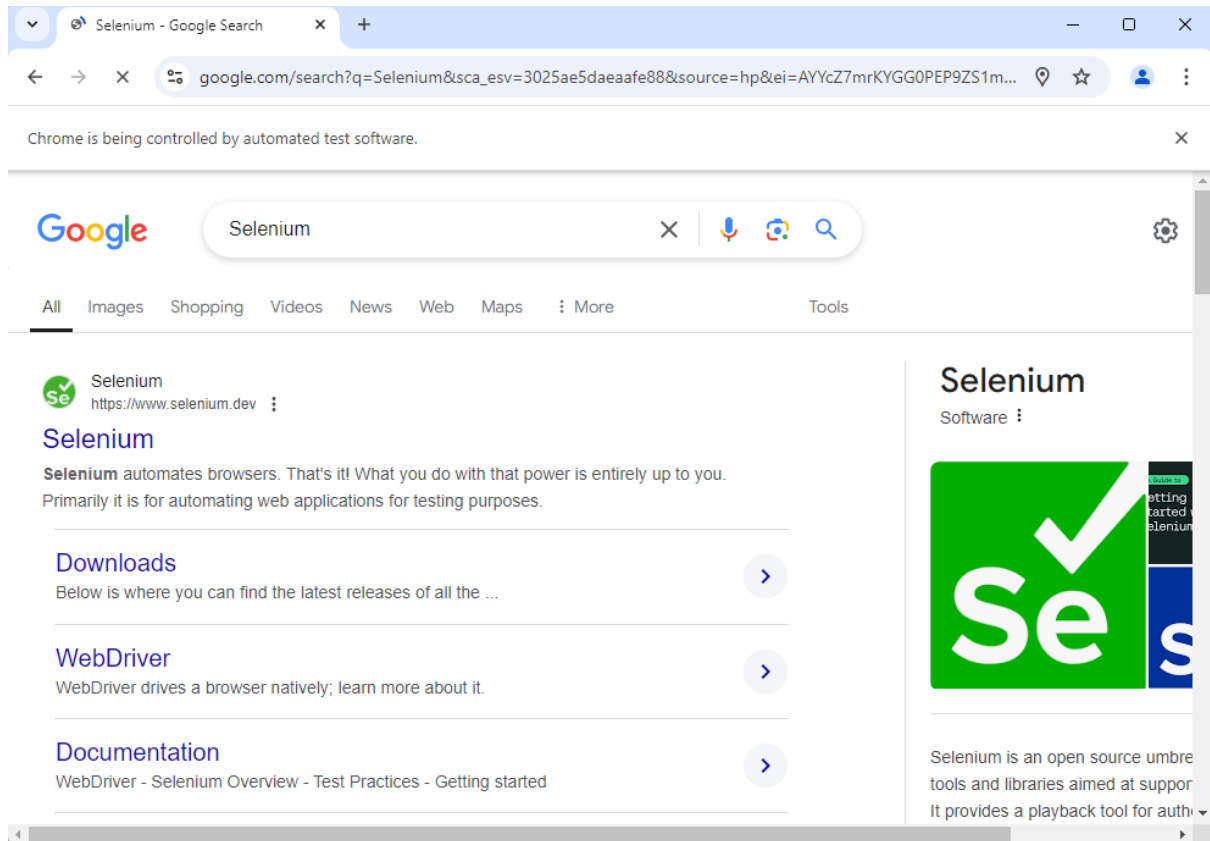


Practical No: 03

Aim: Selenium Web Driver First Script

```
package seleniumproject;
import java.time.Duration;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
public class HelloSelenium
{
    public static void main(String[] args) {
        ChromeDriver driver = new ChromeDriver();
        driver.get("https://google.com");
        driver.getTitle(); // => "Google"
        driver.manage().timeouts().implicitlyWait(Duration.ofMillis(500));
        WebElement searchBox = driver.findElement(By.name("q"));
        WebElement searchButton = driver.findElement(By.name("btnK"));
        searchBox.sendKeys("Selenium");
        searchButton.click();
        searchBox = driver.findElement(By.name("q"));
        searchBox.getAttribute("value"); // => "Selenium"
        driver.quit();
    }
}
```

Output



Practical No: 04

Aim: To create a WebDriver script that would fetch Mercury Tours' homepage, verify its title & print out the result of the comparison.

```
package seleniumproject;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class Sample {
public static void main(String[] args) {
System.setProperty("webdriver.gecko.driver","D:\\CromeDriver\\geckodriver.exe")
;
WebDriver driver = new FirefoxDriver();
String baseUrl = "http://demo.guru99.com/test/newtours/";
String expectedTitle = "Welcome: Mercury Tours";
String actualTitle = "";
driver.get(baseUrl);
if (actualTitle.contentEquals(expectedTitle)){
System.out.println("Test Passed!");
} else {
System.out.println("Test Failed");
}
//close Fire fox
driver.close();
}
}
```

Output

← → ↻ demo.guru99.com/test/newtours/ ☆ ⬇ 👤

GURU99
Demo Site

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Jul 6, 2017

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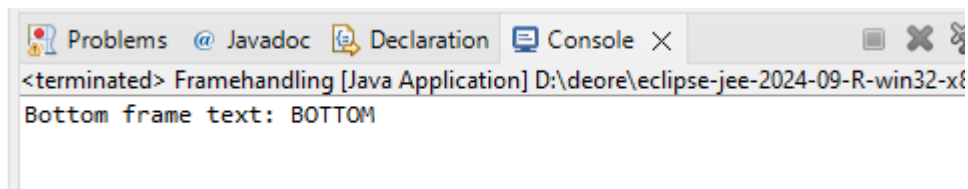
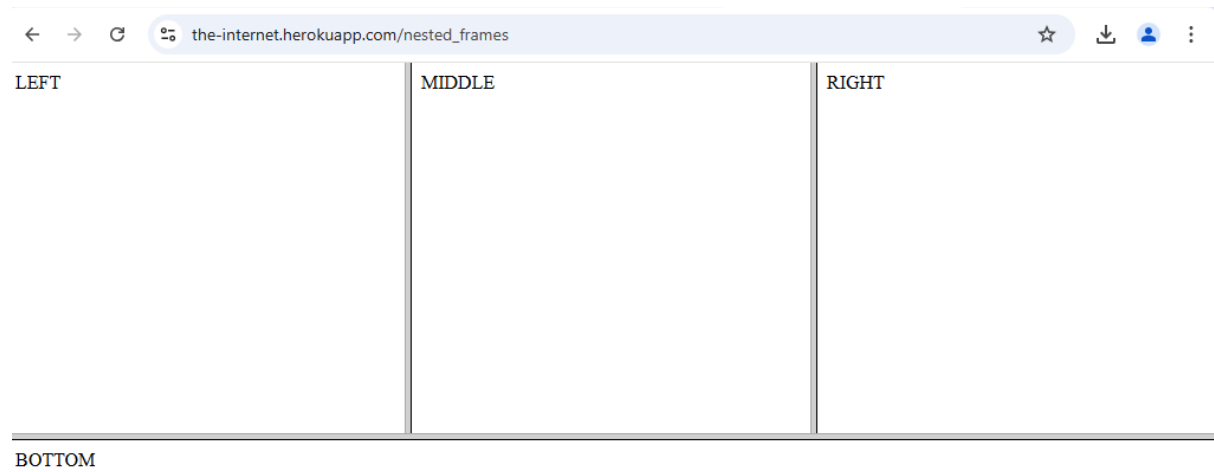
 Read about our

Practical No: 05

Aim: Implementing handling multiple frames

```
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
import java.util.concurrent.TimeUnit;
public class Framehandling{
public static void main(String[] args) {
    System.setProperty("webdriver.gecko.driver","D:\\CromeDriver\\geckodriver.exe");
    WebDriver driver = new FirefoxDriver();
    String url = "https://the-internet.herokuapp.com/frames";
    driver.get(url);
    driver.manage().timeouts().implicitlyWaitimplicitlyWait(5, TimeUnit.SECONDS);
    // identify element
    driver.findElement(By.linkText("Nested Frames")).click();
    // switch to frame with frame name and identify inside element
    driver.switchTo().frame("frame-bottom");
    WebElement l = driver.findElement(By.cssSelector("body"));
    System.out.println("Bottom frame text: " +l.getText());
    // switch to main page
    driver.switchTo().defaultContent();
    driver.quit();
}
}
```

Output



Practical No: 06

Aim: Implementing Selenium WebDriver – Browser Commands

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
public class Web_command {
    public static void main(String[] args) {

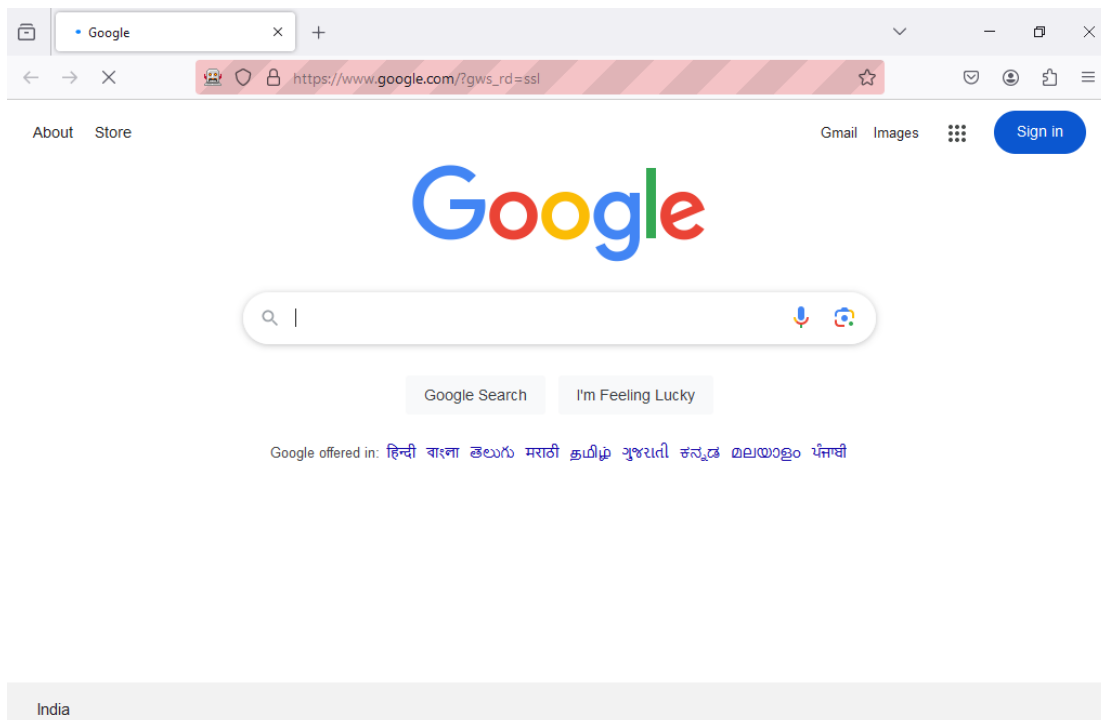
System.setProperty("webdriver.gecko.driver","D:\\CromeDriver\\geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        String url = ("https://www.google.co.in/");
        //Launch the ToolsQA WebSite
        driver.get(url);
        // Storing Title name in the String variable
        String title = driver.getTitle();
        // Storing Title length in the Int variable
        int titleLength = driver.getTitle().length();
        // Printing Title & Title length in the Console window
        System.out.println("Title of the page is : " + title);
        System.out.println("Length of the title is : "+ titleLength);
        // Storing URL in String variable
        String actualUrl = driver.getCurrentUrl();
        if (actualUrl.equals("https://www.google.co.in/")){
            System.out.println("Verification Successful – The correct Url is opened.");

        }
        else{
            System.out.println("Verification Failed – An incorrect Url is opened.");
        }
        // Storing Page Source in String variable
        String pageSource = driver.getPageSource();
        // Storing Page Source length in Int variable
        int pageSourceLength = pageSource.length();
        // Printing length of the Page Source on console
        System.out.println("Total length of the Pgae Source is : " +
            pageSourceLength);
        //Closing browser
        driver.close();
    }
}
```

```
}
```

Output

```
Problems Javadoc Declaration Console X
<terminated> Web_command (1) [Java Application] D:\deore\eclipse-j
Title of the page is : Google
Length of the title is : 6
Verification Successful - The correct Url is opened.
Total length of the Pgae Source is : 236435
```



Practical No: 07

Aim: Implementing Selenium WebDriver - find element command, Locator (id, css selector, Xpath), Input Box, Buttons, Submit Buttons.

```
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.*;
public class Form {
    public static void main(String[] args) {
        // declaration and instantiation of objects/variables
        System.setProperty("webdriver.gecko.driver", "D:\\CromeDriver\\geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        driver.get("http://demo.guru99.com/test/radio.html");
        WebElement radio1 = driver.findElement(By.id("vfb-7-1"));
        WebElement radio2 = driver.findElement(By.id("vfb-7-2"));
        //Radio Button1 is selected
        radio1.click();
        System.out.println("Radio Button Option 1 Selected");
        //Radio Button1 is de-selected and Radio Button2 is selected
        radio2.click();
        System.out.println("Radio Button Option 2 Selected");
        // Selecting CheckBox
        WebElement option1 = driver.findElement(By.id("vfb-6-0"));
        // This will Toggle the Check box
        option1.click();
        // Check whether the Check box is toggled on
        if (option1.isSelected()) {
            System.out.println("Checkbox is Toggled On");
        } else {
            System.out.println("Checkbox is Toggled Off");
        }
        //Selecting Checkbox and using isSelected Method
        driver.get("http://demo.guru99.com/test/facebook.html");
        WebElement chkFBPersist =
        driver.findElement(By.id("persist_box"));
        for (int i=0; i<2; i++) {
            chkFBPersist.click ();
            System.out.println("Facebook Persists Checkbox Status is -"+chkFBPersist.isSelected());
        }
    }
}
```

```
}  
//driver.close();  
}  
}
```

Output

The screenshot shows a web browser at the URL <https://demo.guru99.com/test/facebook.html>. The page features the GURU99 Demo Site logo and a navigation bar with links to various projects: Selenium, Insurance Project, Agile Project, Bank Project, Security Project, Telecom Project, Payment Gateway Project, New Tours, and SEO. Below the navigation bar, there is a form with the following elements:

- Radio**
 - ☐ Option1
 - ☒ Option2
 - ☐ Option3
- Checkbox**
 - ☒ Checkbox1
 - ☐ Checkbox2
 - ☐ Checkbox3

The second screenshot shows the same page with a login form at the bottom. The login form includes fields for "Email or Phone" and "Password", a "Log In" button, and a "Keep me logged in" checkbox. A link for "Forgot your password?" is also present.

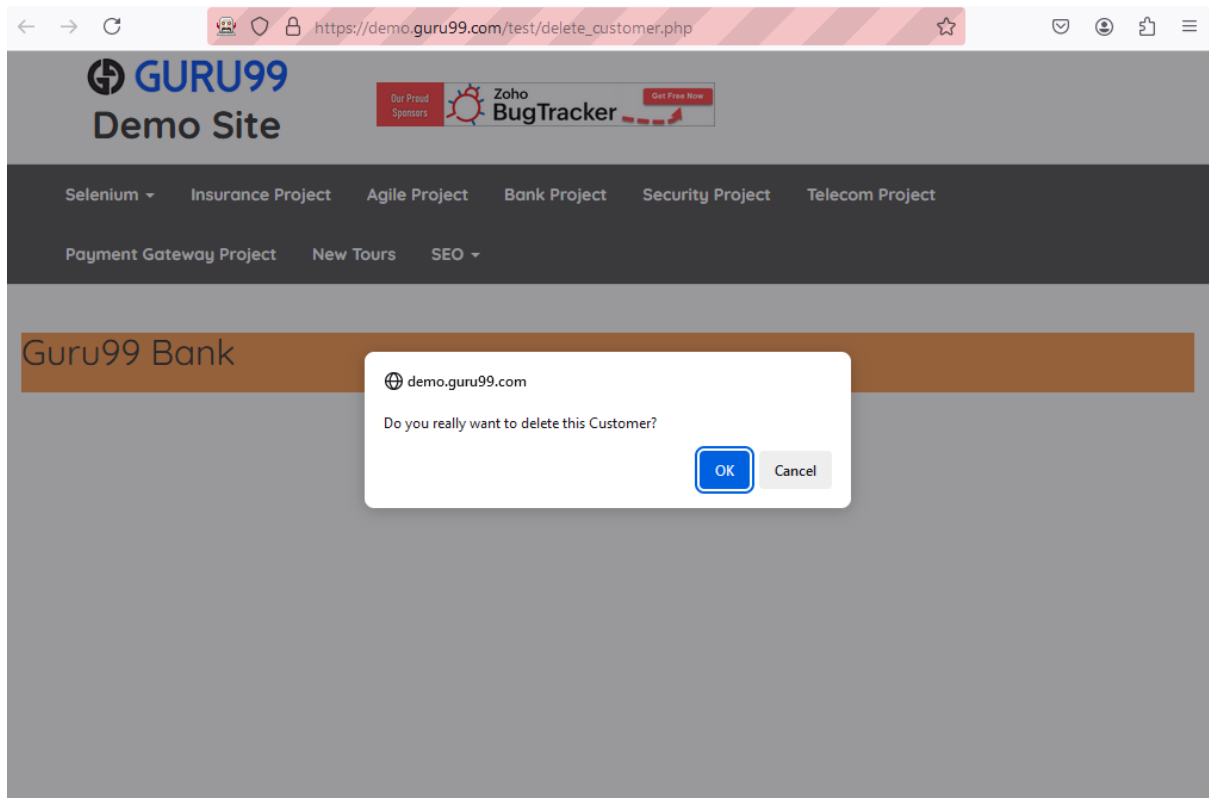
This is DEMO site for TESTING purpose

Practical No:08

Aim: Demonstrate different types of alerts

```
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.NoAlertPresentException;
import org.openqa.selenium.Alert;
public class AlertDemo {
public static void main(String[] args) throws
NoAlertPresentException,InterruptedException {
    System.setProperty("webdriver.gecko.driver","D:\\CromeDriver\\geckodriver.exe");
    WebDriver driver = new FirefoxDriver();
// Alert Message handling
driver.get("http://demo.guru99.com/test/delete_customer.php");
driver.findElement(By.name("cusid")).sendKeys("53920");
driver.findElement(By.name("submit")).submit();
// Switching to Alert
Alert alert = driver.switchTo().alert();
// Capturing alert message.
String alertMessage= driver.switchTo().alert().getText();
// Displaying alert message
System.out.println(alertMessage);
Thread.sleep(5000);
// Accepting alert
alert.accept();
}
}
```

Output



Practical No: 09

Aim: Demonstrate synchronization in selenium (Implicit wait)

```
package seleniumproject;
import java.util.concurrent.TimeUnit;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
public class ImplicitWait{
public static void main(String[] args) throws InterruptedException
{
    System.setProperty("webdriver.gecko.driver","D:\\CromeDriver\\geckodriver.exe");
    WebDriver driver = new FirefoxDriver();
    driver.manage().window().maximize();
    driver.manage().deleteAllCookies();
    driver.manage().timeouts().pageLoadTimeout(40,
    TimeUnit.SECONDS); // pageload timeout
    driver.manage().timeouts().implicitlyWait(20, TimeUnit.SECONDS);
    // Implicit Wait for 20 seconds
    driver.get("https://login.google.com/");
    driver.findElement(By.xpath("//input[@id='loginusername']")).sendKeys("JavaTpoint.com");
    //Finding element and
    Thread.sleep(1000);
    driver.findElement(By.xpath("//input[@id='login-signin']")).click();
    //Clicking on the next button if element is located
}
}
```

Output

In the code snippet given above, the Implicit Wait is defined for only 20 seconds, implying that the output will load or arrive within the maximum waiting time of 20 seconds for the particular element.

Practical No: 10

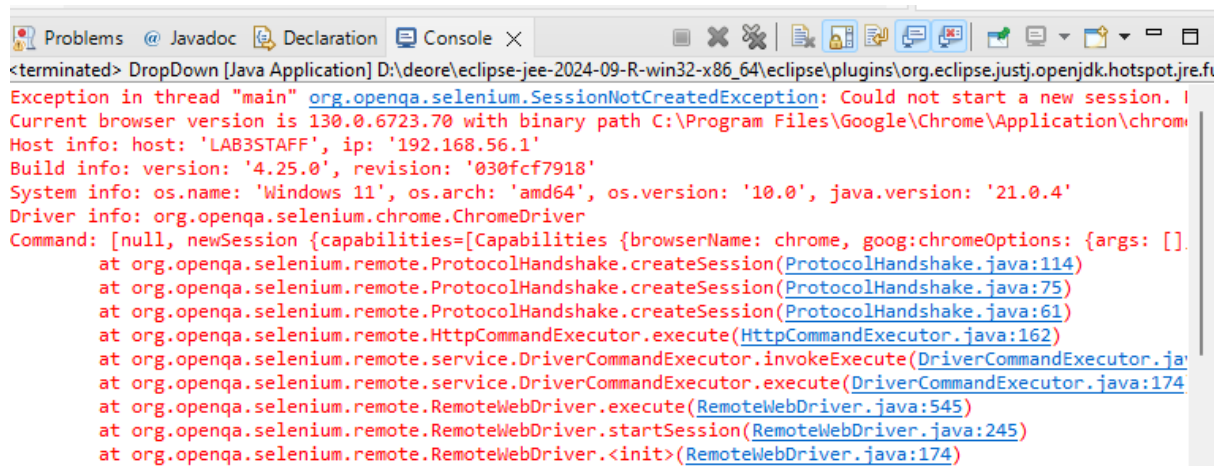
Aim: Demonstrate: Select Value from DropDown using Selenium Webdriver

```
import java.util.List;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.support.ui.Select;
public class DropDown {
public static void main(String[] args) throws InterruptedException {
//Creating instance of Chrome driver

System.setProperty("webdriver.chrome.driver","D:\\CromeDriver\\chromedriver.exe");
    WebDriver driver=new ChromeDriver();
//Step#2- Launching URL
    driver.get("https://demoqa.com/select-menu");
//Maximizing window
driver.manage().window().maximize();
//Step#3- Selecting the dropdown element by locating its id
Select select = new
Select(driver.findElement(By.id("oldSelectMenu")));
//Step#4- Printing the options of the dropdown
//Get list of web elements
List<WebElement> lst = select.getOptions();
//Looping through the options and printing dropdown options
System.out.println("The dropdown options are:");
for(WebElement options: lst)
System.out.println(options.getText());
//Step#5- Selecting the option as 'Purple'-- selectByIndex
System.out.println("Select the Option by Index 4");
select.selectByIndex(4);
System.out.println("Select value is: " +
select.getFirstSelectedOption().getText());
//Step#6- Selecting the option as 'Magenta'-- selectByVisibleText
System.out.println("Select the Option by Text Magenta");
select.selectByVisibleText("Magenta");
System.out.println("Select value is: " +
select.getFirstSelectedOption().getText());
```

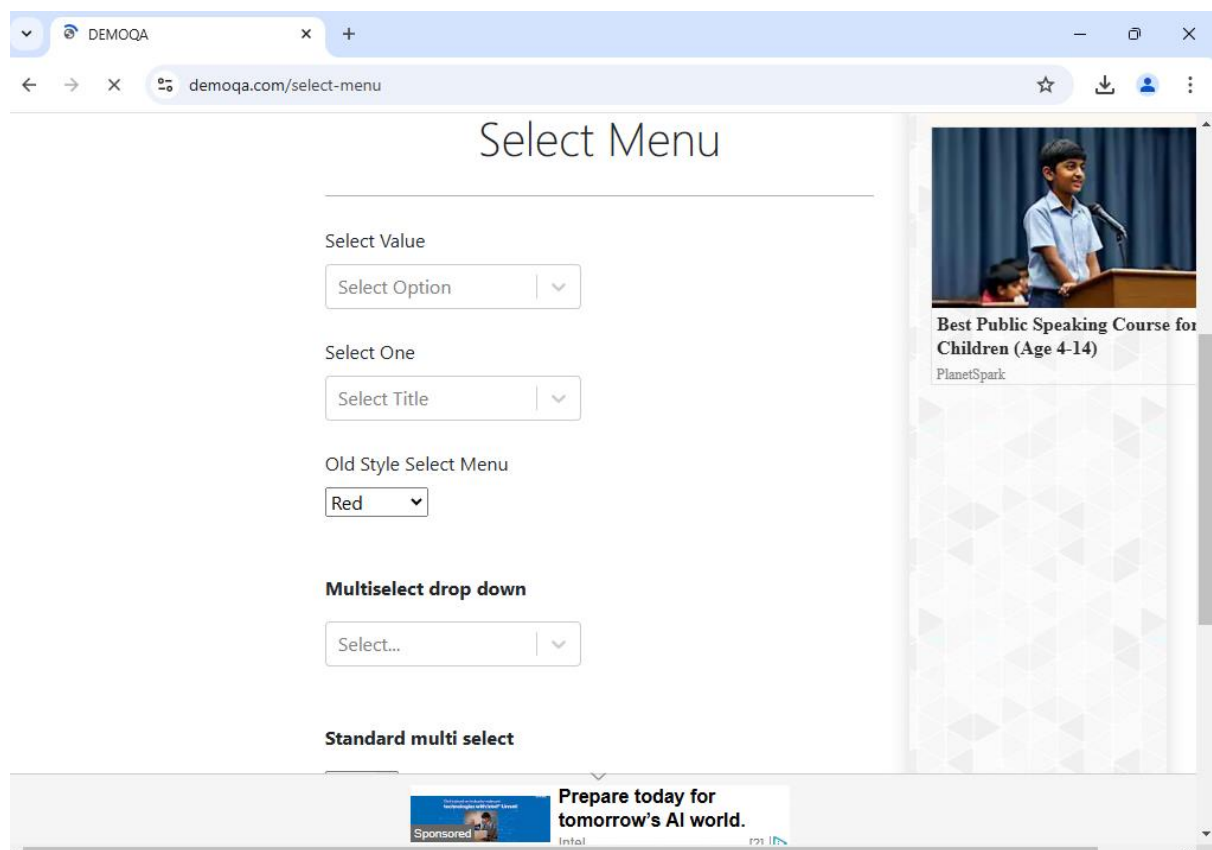
```
//Step#7- Selecting an option by its value
System.out.println("Select the Option by value 6");
select.selectByValue("6");
System.out.println("Select value is: " +
select.getFirstSelectedOption().getText());
driver.quit();
}
}
```

Output




The screenshot shows the Eclipse IDE's console window. At the top, there's a tab for 'Console'. The output shows a red error message: 'Exception in thread "main" org.openqa.selenium.SessionNotCreatedException: Could not start a new session. I Current browser version is 130.0.6723.70 with binary path C:\Program Files\Google\Chrome\Application\chrom...'. Below this, it lists system and driver information: 'Host info: host: 'LAB3STAFF', ip: '192.168.56.1'', 'Build info: version: '4.25.0', revision: '030fcf7918'', 'System info: os.name: 'Windows 11', os.arch: 'amd64', os.version: '10.0', java.version: '21.0.4'', 'Driver info: org.openqa.selenium.chrome.ChromeDriver', and 'Command: [null, newSession {capabilities=[Capabilities {browserName: chrome, goog:chromeOptions: {args: []}...'. The stack trace follows, listing various Selenium classes and their methods.

```
<terminated> DropDown [Java Application] D:\deore\eclipse-jee-2024-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.f
Exception in thread "main" org.openqa.selenium.SessionNotCreatedException: Could not start a new session. I
Current browser version is 130.0.6723.70 with binary path C:\Program Files\Google\Chrome\Application\chrom
Host info: host: 'LAB3STAFF', ip: '192.168.56.1'
Build info: version: '4.25.0', revision: '030fcf7918'
System info: os.name: 'Windows 11', os.arch: 'amd64', os.version: '10.0', java.version: '21.0.4'
Driver info: org.openqa.selenium.chrome.ChromeDriver
Command: [null, newSession {capabilities=[Capabilities {browserName: chrome, goog:chromeOptions: {args: []}
    at org.openqa.selenium.remote.ProtocolHandshake.createSession(ProtocolHandshake.java:114)
    at org.openqa.selenium.remote.ProtocolHandshake.createSession(ProtocolHandshake.java:75)
    at org.openqa.selenium.remote.ProtocolHandshake.createSession(ProtocolHandshake.java:61)
    at org.openqa.selenium.remote.HttpCommandExecutor.execute(HttpCommandExecutor.java:162)
    at org.openqa.selenium.remote.service.DriverCommandExecutor.invokeExecute(DriverCommandExecutor.java:
    at org.openqa.selenium.remote.service.DriverCommandExecutor.execute(DriverCommandExecutor.java:174)
    at org.openqa.selenium.remote.RemoteWebDriver.execute(RemoteWebDriver.java:545)
    at org.openqa.selenium.remote.RemoteWebDriver.startSession(RemoteWebDriver.java:245)
    at org.openqa.selenium.remote.RemoteWebDriver.<init>(RemoteWebDriver.java:174)
```



← → ↻ demoqa.com/select-menu



भारतीय जनता पार्टी, महाराष्ट्र

Select Menu

Select Value

Group 1, option 1 | ▾

Select One

Ms. | ▾

Old Style Select Menu

Red ▾

Multiselect drop down

Green x | x ▾

Standard multi select

Volvo ▲

Saab

Opel

Audi ▼

The dropdown options are:

Red
Blue
Green
Yellow
Purple
Black
White
Voilet
Indigo
Magenta
Aqua

Select the Option by Index 4

Select value is: Purple

Select the Option by Text Magenta

Select value is: Magenta

Select the Option by value 6

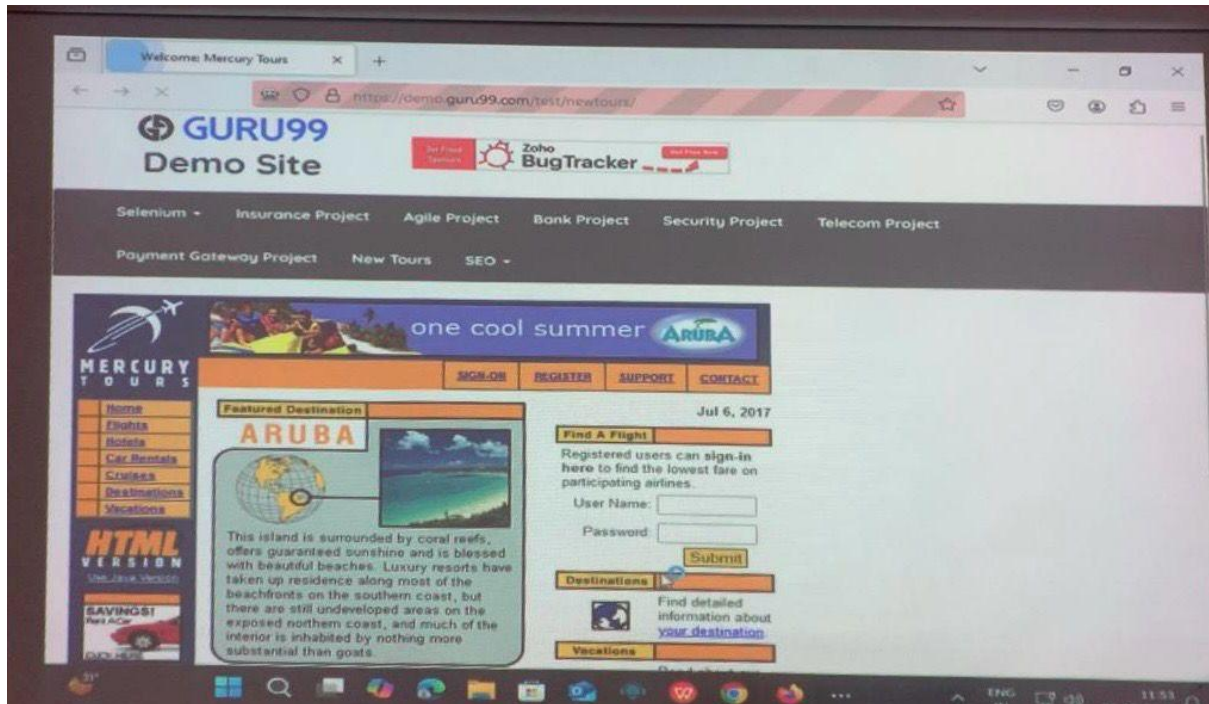
Select value is: White

Practical No: 11

Aim: Demonstrate action classes using Selenium Web driver (Mouse Events)

```
import org.openqa.selenium.*;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.interactions.Action;
import org.openqa.selenium.interactions.Actions;
public class PG7 {
    public static void main(String[] args) {
        String baseUrl = "http://demo.guru99.com/test/newtours/";
        System.setProperty("webdriver.gecko.driver", "D:\\CromeDriver\\geckodriver.exe");
        WebDriver driver = new FirefoxDriver();
        driver.get(baseUrl);
        WebElement link_Home =
            driver.findElement(By.linkText("Home"));
        WebElement td_Home = driver
            .findElement(By
                .xpath("//html/body/div"
                    + "/table/tbody/tr/td"
                    + "/table/tbody/tr/td"
                    + "/table/tbody/tr/td"
                    + "/table/tbody/tr"));
        Actions builder = new Actions(driver);
        Action mouseOverHome = builder
            .moveToElement(link_Home)
            .build();
        String bgColor = td_Home.getCssValue("background-color");
        System.out.println("Before hover: " + bgColor);
        mouseOverHome.perform();
        bgColor = td_Home.getCssValue("background-color");
        System.out.println("After hover: " + bgColor);
        driver.close();
    }
}
```

Output



Problems @ Javadoc Declaration Console X

<terminated> PG7 [Java Application] D:\deore\eclipse-jee-2024-09-R-wi

Before hover: rgb(255, 165, 0)

After hover: rgba(0, 0, 0, 0)

|