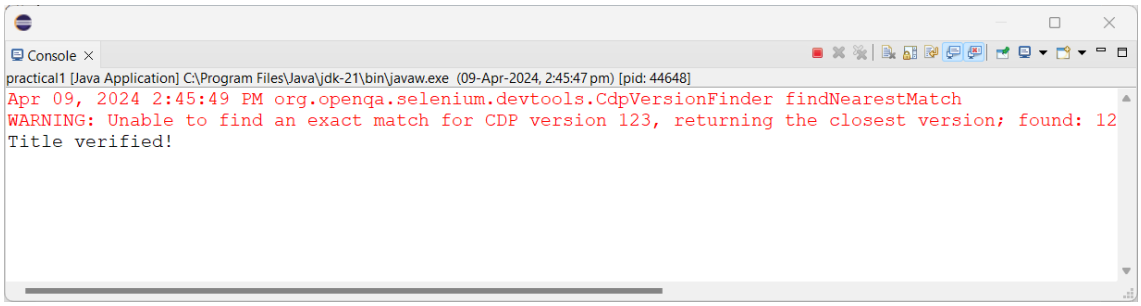
1. **Write a script of Java for Selenium to open**
   - ***Step 1:*** ***URL of Mercury Tours' homepage http://demo.guru99.com/test/newtours/***
   - ***Step 2:*** ***verify its title (Welcome: Mercury Tours)***
   - ***Step 3:*** ***Step 3: print out the result of the comparison***
   - **Step 4:** ***close it before ending the entire program.***

```
package classPracticals;

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

public class practical1 {
	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("http://demo.guru99.com/test/newtours/");
		String actualTitle = "Welcome: Mercury Tours";
		String title = driver.getTitle();
		if (title.equals(actualTitle)) {
			System.out.println("Title verified!");
		}
		else {
			System.err.println("Title verification failed!");
		}
		driver.close();
	}
}
```

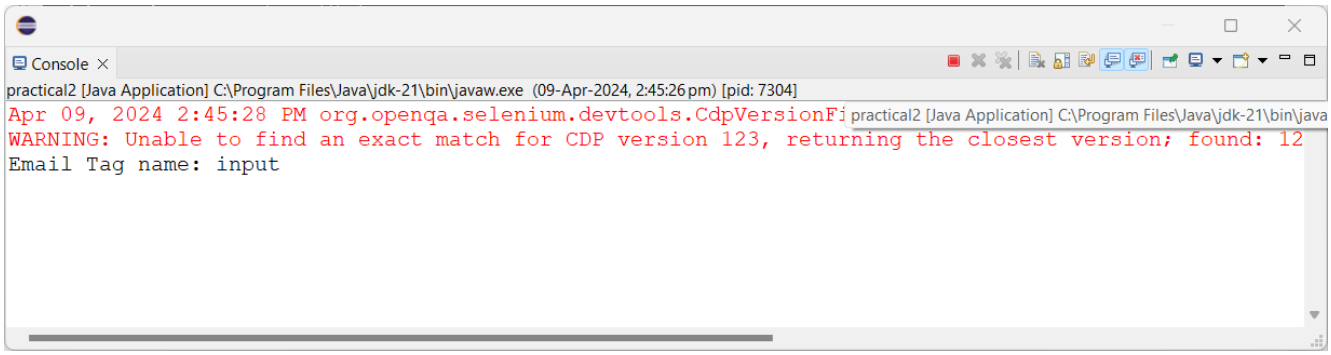
- **Output:**



2. **Write a script of Java for Selenium to locate web elements using:**
   - ***Step 1:*** ***URL http://www.facebook.com***
   - ***Step 2:*** ***Locate using id names as email***
   - ***Step 3:*** ***Print its tagName***
   - ***Step 4:*** ***close it before ending the entire program.***

```
package classPracticals;

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

public class practical2 {
	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("http://www.facebook.com");
		WebElement email = driver.findElement(By.id("email"));
		String emailTag = email.getTagName();
		System.out.println("Email Tag name: "+ emailTag);
		driver.close();
	}
}
```

- **Output:**



3. **Write a script of Java to demonstrate various web element locate methods such as:**
   a. ***By tagname***
   b. ***By classname***
   c. ***By xpath***
   d. ***By name***
   e. ***By linktext***
   f. ***By cssSelector***

```
package classPracticals;

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

public class practical3 {
   public static void main(String[] args) {
         WebDriver driver = new ChromeDriver();
         driver.get("https://erp.ganpatuniversity.ac.in/");
         String img_src =
         driver.findElement(By.tagName("img")).getAttribute("src");
         System.out.println("Image Source: " + img_src);
         String input_tagname =
         driver.findElement(By.className("textbox")).getTagName();
         System.out.println("Input tagname: " + input_tagname);
         String label =
         driver.findElement(By.cssSelector("span#Label3")).getText();
         System.out.println("Label text: " + label);
         String btn_type =
         driver.findElement(By.name("ibtnLogin")).getAttribute("type");
         System.out.println("Button type: " + btn_type);
         String forgot_url = driver.findElement(By.linkText("Forgot
         Password?")).getAttribute("href");
         System.out.println("Forgot Url: " + forgot_url);
         Dimension logo_size =
         driver.findElement(By.xpath("//*[@id=\"Logintable\"]/div[2]/img"
         )).getSize();
         System.out.println("Height: "+logo_size.height+ " Width: "+
         logo_size.width);
         driver.close();
   }
}
```

- **Output:**

Console
practical3 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (09-Apr-2024, 2:47:40 pm) [pid: 19580]
Apr 09, 2024 2:47:42 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 123, returning the closest version; found: 12
Image Source: https://erp.ganpatuniversity.ac.in/Images/login_banners/04.jpg
Input tagname: input
Label text: Password
Button type: submit
Forgot Url: javascript:__doPostBack('lnkForgotPassword','')
Height: 123 Width: 379

4. Write a script of Java to demonstrate various get commands

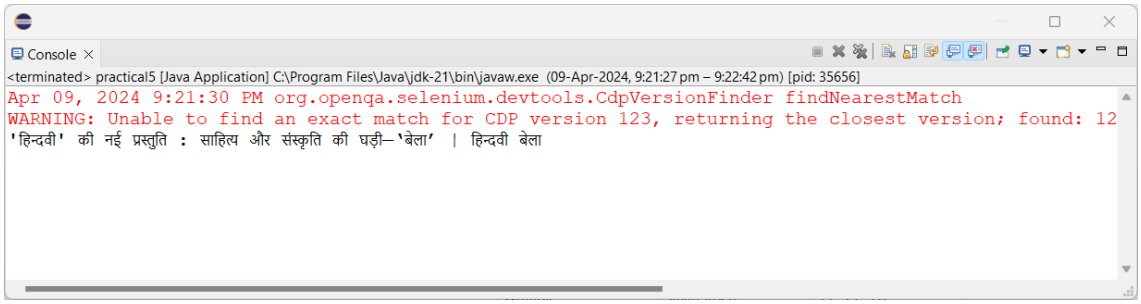
```
package classPracticals;

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

public class practical4 {

	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("https://www.amazon.in/ ");

		String page_title = driver.getTitle();
		String page_source = driver.getPageSource();
		String current_url = driver.getCurrentUrl();
		String parent_window = driver.getWindowHandle();

		System.out.println("Page title: " + page_title);
		System.out.println("Current URL: " + current_url);
		System.out.println("Parent Window Handle: " + parent_window);
		System.out.println("Page Source: " + page_source);
		driver.close();
	}

}
```

- **Output:**

5. Write a script of Java to exhibit clicking on a web element

```
package classPracticals;

import java.time.Duration;

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

public class practical5 {

	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("https://www.hindwi.org/");
		driver.manage().timeouts().implicitlyWait(Duration.
		ofSeconds(10));
		driver.findElement(By.className("blgImg")).click();
		System.out.println(driver.getTitle());
		driver.close();

	}
}
```

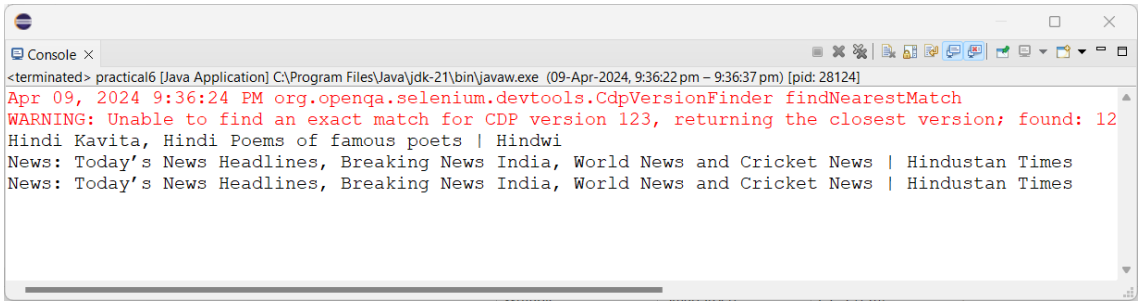
- **Output:**



6. Write a script of Java to demonstrate various navigate commands

```
package classPracticals;

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

public class practical6 {
	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("https://www.hindwi.org/");
		driver.findElement(By.className("blgImg")).click();
		driver.navigate().back();
		System.out.println(driver.getTitle());
		driver.navigate().forward();
		driver.navigate().to("https://www.hindustantimes.com/");
		System.out.println(driver.getTitle());
		driver.navigate().back();
		driver.get("https://www.hindustantimes.com/");
		System.out.println(driver.getTitle());
		driver.quit();
	}
}
```

- **Output:**

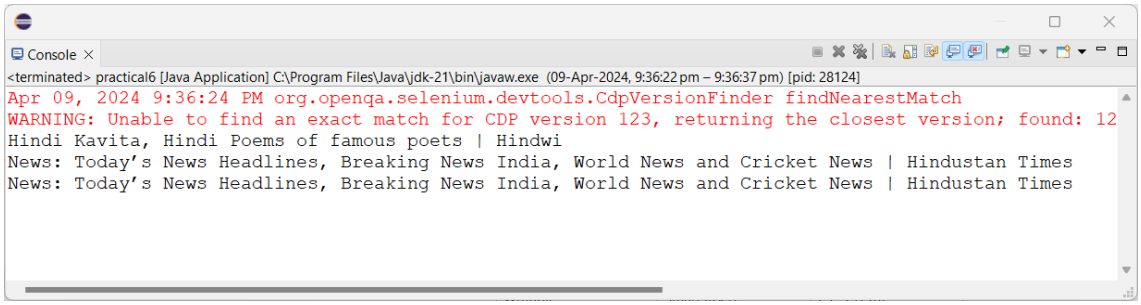


7. Write a script of Java to show the switching between Frames.

```
package classPracticals;

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.interactions.Actions;

public class practical7 {

	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("http://demo.guru99.com/selenium/deprecated.html");
		System.out.println(driver.getTitle());

		driver.switchTo().frame("packageFrame");
		driver.findElement(By.linkText("Alert")).click();

		driver.navigate().to("https://www.tutorialspoint.com/
		selenium/practice/buttons.php");
		System.out.println(driver.getTitle());

		Actions action = new Actions(driver);

		WebElement clickMe = driver.findElement
		(By.xpath("/html/body/main/div/div/div[2]/button[1]"));

		WebElement rightClick = driver.findElement
		(By.xpath("/html/body/main/div/div/div[2]/button[2]"));

		WebElement dblClick = driver.findElement
		(By.xpath("/html/body/main/div/div/div[2]/button[3]"));

		action.click(clickMe);
		action.doubleClick(dblClick);
		action.contextClick(rightClick);
		action.perform();

		driver.navigate().to("https://www.tutorialspoint.com
		/selenium/practice/alerts.php");
```

```
            System.out.println(driver.getTitle());

            driver.findElement(By.xpath
            ("/html/body/main/div/div/div[2]/div[1]/button")).click();

            System.out.println(driver.switchTo().alert().getText());
            driver.switchTo().alert().accept();

            driver.findElement(By.xpath
            ("/html/body/main/div/div/div[2]/div[3]/button")).click();

            System.out.println(driver.switchTo().alert().getText());

            driver.switchTo().alert().dismiss();
            driver.quit();
        }
}
```

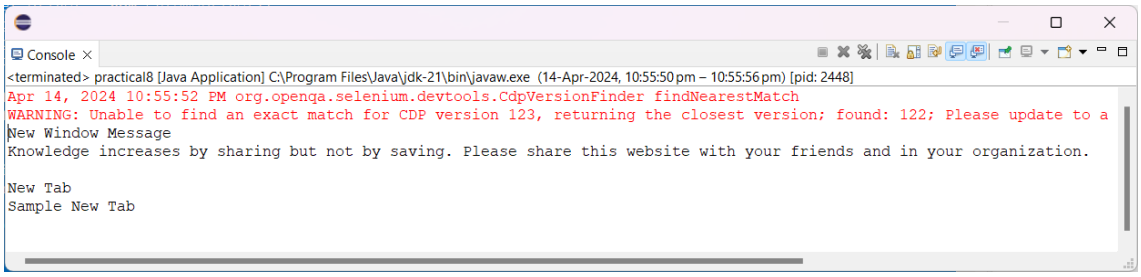
- **Output:**



8. Write a script of Java to show switching between pop-up windows.

```
package classPracticals;

import java.util.Set;

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

public class practical8 {
	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("https://www.tutorialspoint.com/selenium/practice
		/browser-windows.php");

		String parentWindow = driver.getWindowHandle();

		driver.findElement(By.xpath("/html/body/main/div/div/div[2]
		/button[1]")).click();
		driver.findElement(By.xpath("/html/body/main/div/div/div[2]
		/button[3]")).click();

		Set<String> windows = driver.getWindowHandles();

		for (String window : windows) {
			if (!window.equalsIgnoreCase(parentWindow)) {
				driver.switchTo().window(window);
				try {
					String text = driver.findElement(By.xpath
					("/html/body/main/div/div")).getText();
					System.out.println(text+"\n");
				}
				catch(Exception e) {
					System.out.println("Error Occurred!");
				}
			}
		}
		driver.quit();
	}
}
```

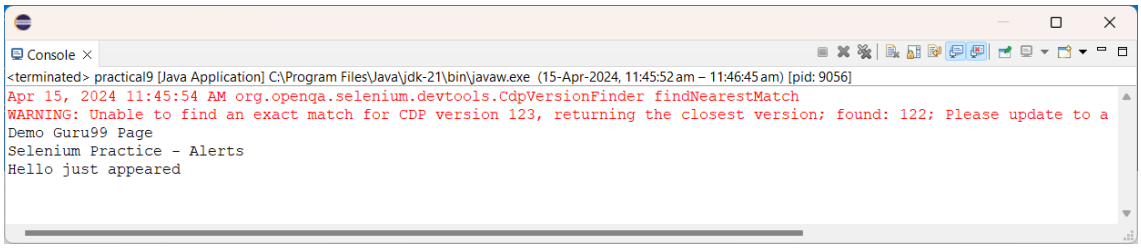
- **Output:**


Console
<terminated> practical8 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (14-Apr-2024, 10:55:50 pm – 10:55:56 pm) [pid: 2448]
Apr 14, 2024 10:55:52 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 123, returning the closest version; found: 122; Please update to a
New Window Message
Knowledge increases by sharing but not by saving. Please share this website with your friends and in your organization.
New Tab
Sample New Tab

9. Write a script of Java to demonstrate implicit and explicit wait.

```
package classPracticals;

import java.time.Duration;

import org.openqa.selenium.Alert;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;

public class practical9 {
	public static void main(String[] args) {

		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.manage().timeouts().implicitlyWait
		(Duration.ofSeconds(10));



		driver.get("https://demo.guru99.com/test/guru99home/");
		System.out.println(driver.getTitle());

		driver.navigate().to("https://www.tutorialspoint.com
		/selenium/practice/alerts.php");
		System.out.println(driver.getTitle());

		driver.findElement(By.xpath
		("/html/body/main/div/div/div[2]/div[2]/button")).click();

		WebDriverWait wait = new WebDriverWait
		(driver, Duration.ofSeconds(6));
		wait.until(ExpectedConditions.alertIsPresent());
		Alert alert = driver.switchTo().alert();

		System.out.println(alert.getText());
		alert.dismiss();
		driver.quit();
	}
}
```

- **Output:**

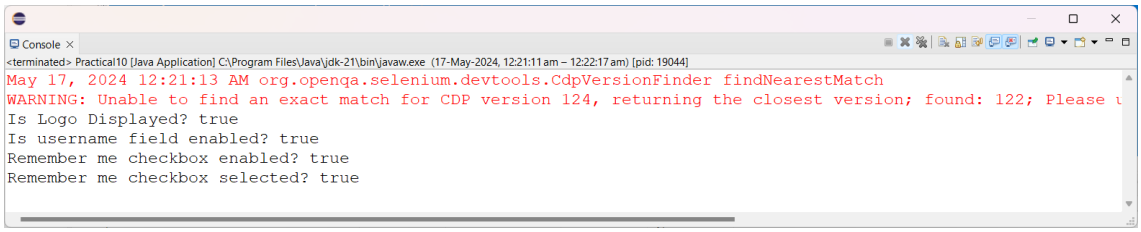

Console
<terminated> practical9 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (15-Apr-2024, 11:45:52 am – 11:46:45 am) [pid: 9056]
Apr 15, 2024 11:45:54 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 123, returning the closest version; found: 122; Please update to a
Demo Guru99 Page
Selenium Practice - Alerts
Hello just appeared

10. Write a script of Java to exhibit various conditions such as:

- ***a. isEnabled()***
- ***b. isDisplayed()***
- ***c. isSelected()***

```
package classPracticals;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
public class Practical10 {

	public static void main(String[] args) {

			WebDriver driver = new ChromeDriver();


			driver.get("https://auth.geeksforgeeks.org/");

			WebElement img = driver.findElement(By.xpath

			("/html/body/div[2]/div/div[1]/a/img"));

			WebElement username = driver.findElement(By.id("luser"));

			WebElement  rememberCheck = driver.findElement(By.xpath

			("//input[@name=\"rem\"][2]"));

			System.out.println("Is Logo Displayed? " +

			img.isDisplayed());

			System.out.println("Is username field enabled? "+

			username.isEnabled());

			System.out.println("Remember me checkbox selected? "+

			rememberCheck.isSelected());


			driver.close();

	}

}
```

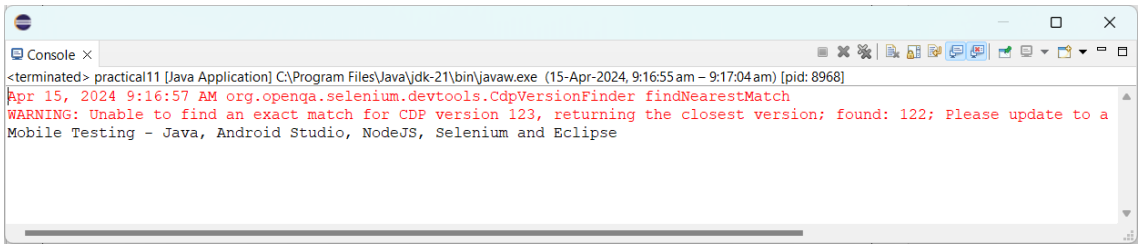
- **Output:**


Console
<terminated> Practical10 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (17-May-2024, 12:21:11 am – 12:22:17 am) [pid: 19044]
May 17, 2024 12:21:13 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 124, returning the closest version; found: 122; Please
Is Logo Displayed? true
Is username field enabled? true
Remember me checkbox enabled? true
Remember me checkbox selected? true

11. Write a script of Java to exhibit Exception Handling.

```
package classPracticals;

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

public class practical11 {
	public static void main(String[] args) {
		WebDriver driver = new ChromeDriver();
		driver.get("https://profcdpatel.blogspot.com/");
		try {
			WebElement element = driver.findElement(By.partialLinkText
			("Testing - Java, Android Studio"));
			System.out.println(element.getText());
		}
		catch (NoSuchElementException e) {
			System.out.println("No element found! - "
			+ e.getMessage());
		}
		catch(Exception e) {
			e.printStackTrace();
		}
		finally {
			driver.quit();
		}
	}
}
```

- **Output:**

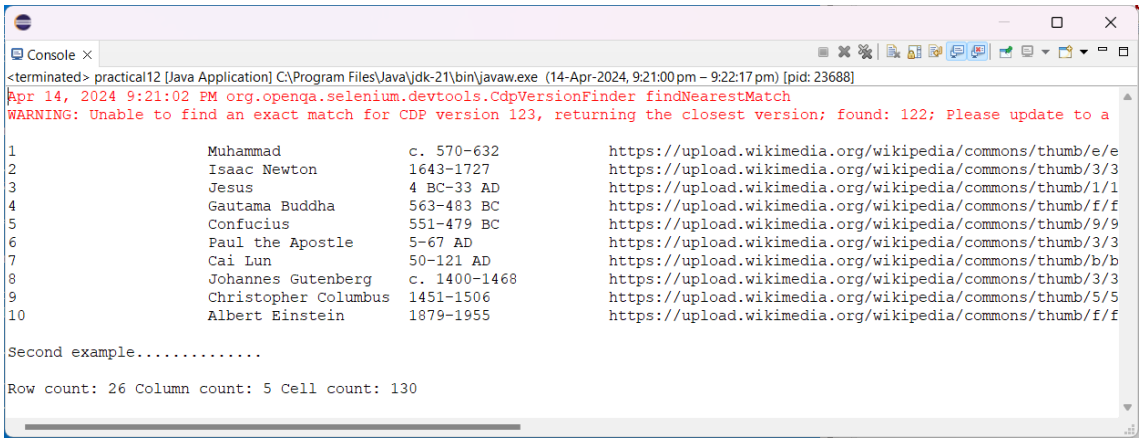


12. Write a script to show the dynamic web table handling.

```
package classPracticals;

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;

public class practical12 {

	public static void main(String[] args) {

		WebDriver driver = new ChromeDriver();
		driver.get("https://en.wikipedia.org/wiki/
		The_100:_A_Ranking_of_the_Most_Influential_Persons_in_History");

		WebElement table = driver.findElement(By.xpath
		("//table[@class=\"wikitable\"]"));

		List<WebElement> rows = table.findElements(By.tagName("tr"));

		for (WebElement row : rows)
		{
			List<WebElement> cols = row.findElements
			(By.tagName("td"));

			for (WebElement col : cols) {
				try {
					System.out.printf("%-22s", col.findElement
					(By.tagName("img")).getAttribute("src"));
				}
				catch(Exception e) {
					System.out.printf("%-22s",
					col.getText(),"\t");
				}
			}
			System.out.println();
			}
```

```
            System.out.println("\nSecond example.............\n");

            driver.get("https://demo.guru99.com/
                        test/web-table-element.php");

            List<WebElement> rows2 = driver.findElements(By.xpath
            ("//table[@class=\"dataTable\"]//tbody//tr"));

            List<WebElement> cols2 = driver.findElements(By.xpath
            ("//table[@class=\"dataTable\"]//tbody//tr[1]//td"));

            List<WebElement> cells = driver.findElements(By.xpath
            ("//table[@class=\"dataTable\"]//tbody//tr//td"));

            int rows_count = rows2.size();
            int cols_count = cols2.size();
            int cells_count = cells.size();

            System.out.println("Row count: " + rows_count +
            " Column count: " + cols_count + " Cell count: " + cells_count);
            driver.close();
        }

    }
```

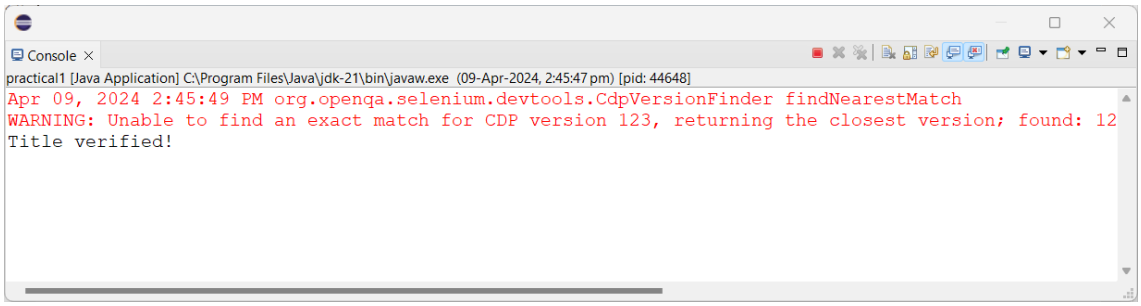
- **Output:**



13. Write a script to demonstrate Exception Handling.

```
package classPracticals;

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

public class practical1 {
	public static void main(String[] args) {
	WebDriver driver = new ChromeDriver();

	try {
		driver.get("http://demo.guru99.com/test/newtours/");
		String actualTitle = "Welcome: Mercury Tours";
		String title = driver.getTitle();
		if (title.equals(actualTitle)) {
			System.out.println("Title verified!");
		}
		else {
			System.err.println("Title verification failed!");
		}
	}
	catch(Exception e) {
		e.printStackTrace();
	}
	finally {
		driver.close();
	}

}
```

- **Output:**

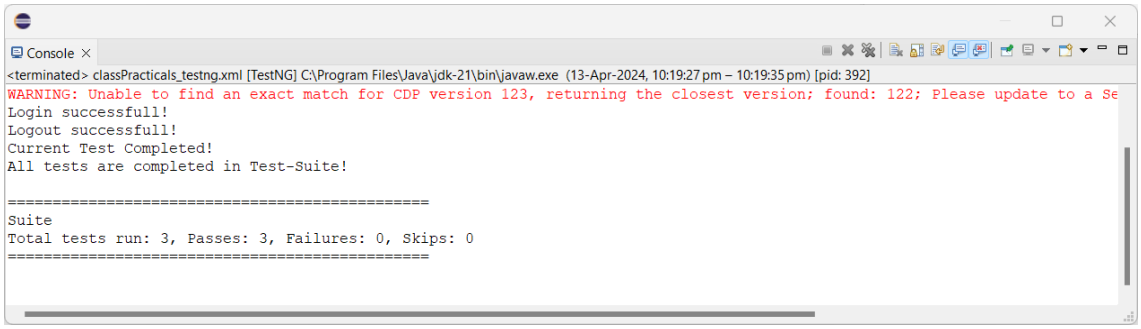


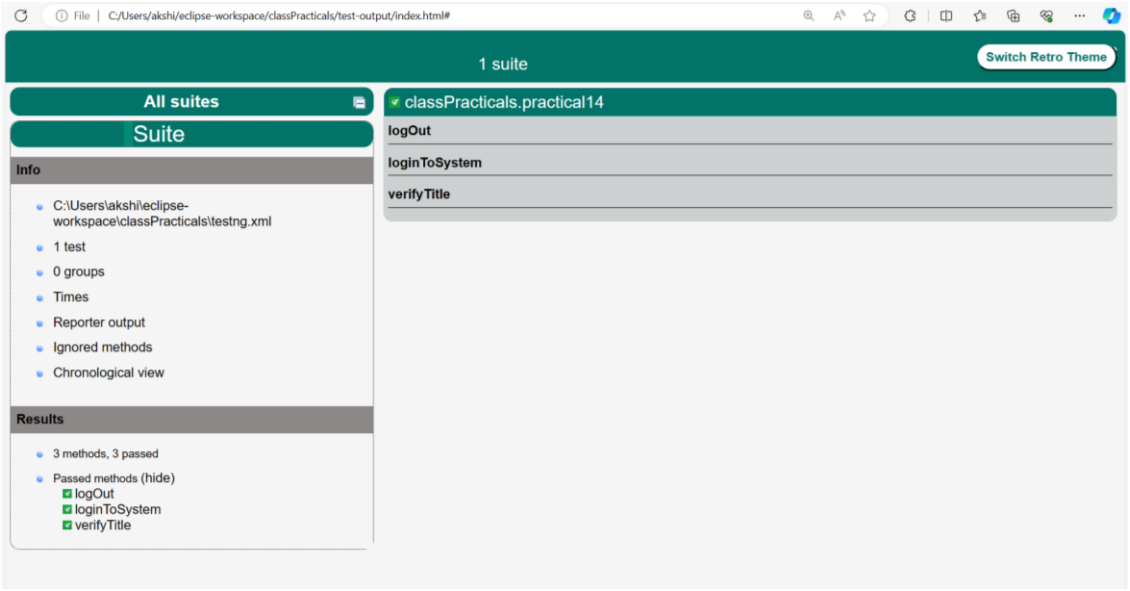
14. Write a script to exhibit reporting in Selenium using TestNG.

```
package classPracticals;

import static org.testng.Assert.assertEquals;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;

public class practical14 {
	WebDriver driver;
	String base_url = "https://erp.ganpatuniversity.ac.in/";

	@BeforeSuite
	public void beforeSuite() {
		System.out.println("Starting tests in Test-Suite...");
	}

	@BeforeClass
	public void testSetup() {
		System.out.println("Initializing new Test...");
		driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.manage().timeouts().implicitlyWait(Duration.
			ofSeconds(10));
		driver.get(base_url);
	}

	@Test (priority=0)
	public void loginToSystem() {
		driver.findElement(By.id("txtUserName")).sendKeys("username");;
		driver.findElement(By.id("txtPassword")).sendKeys("password");
		driver.findElement(By.id("ibtnLogin")).click();
		try {
			WebDriverWait wait = new WebDriverWait(driver,
			Duration.ofSeconds(10));
			wait.until(ExpectedConditions.visibilityOfElement
			Located(By.id("ctl00_lnkLogout")));
			System.out.println("Login successfull!");
		}
```

```
		catch (Exception e){
			e.printStackTrace();
			System.out.println("Login failed!");
		}
	}

	@Test
	public void verifyTitle() {
		String title = ".:: E-Governance ::.";
		assertEquals(driver.getTitle(), title);
	}

	@Test
	public void logOut() {
		driver.findElement(By.id("ctl00_lnkLogout")).click();
		try {
			driver.findElement(By.id("ibtnLogin"));
			System.out.println("Logout successfull!");
		}
		catch (Exception e){
			e.printStackTrace();
			System.out.println("Logout failed!");
		}
	}

	@AfterClass
	public void testTeardown() {
		driver.quit();
		System.out.println("Current Test Completed!");
	}

	@AfterSuite
	public void afterSuite() {
		System.out.println("All tests are completed in Test-Suite!");
	}
}
```

- **Output:**


Console
<terminated> classPracticals_testng.xml [TestNG] C:\Program Files\Java\jdk-21\bin\javaw.exe (13-Apr-2024, 10:19:27 pm – 10:19:35 pm) [pid: 392]
WARNING: Unable to find an exact match for CDP version 123, returning the closest version; found: 122; Please update to a Se
Login successfull!
Logout successfull!
Current Test Completed!
All tests are completed in Test-Suite!
===
Suite
Total tests run: 3, Passes: 3, Failures: 0, Skips: 0
===


File | C:/Users/akshi/eclipse-workspace/classPracticals/test-output/index.html#
1 suite
Switch Retro Theme
All suites
Suite
Info
C:\Users\akshi\eclipse-workspace\classPracticals\testng.xml
1 test
0 groups
Times
Reporter output
Ignored methods
Chronological view
Results
3 methods, 3 passed
Passed methods (hide)
logOut
loginToSystem
verifyTitle
classPracticals.practical14
logOut
loginToSystem
verifyTitle

Section-2 (Unit-4)

1. **Write down step to configure Selenium IDE in Chrome, IE or EDGE and Firefox Browser and run first script with your name.**

Chrome:

1. **Install Selenium IDE:** Visit the Chrome Web Store and search for "Selenium IDE." Click "Add to Chrome" and confirm the installation.
2. **Launch Selenium IDE:** Look for the new Selenium IDE icon in your Chrome toolbar and click it.
3. **Create a New Project:** Click the "+" icon on the top left and choose "Record a new test in a new project." Name your project and provide a base URL (optional, can be left blank for now).

Record Your First Script:

1. Navigate to a website (e.g., Google). Selenium IDE will start recording your actions.
2. Type "My name is Ayush" in the search bar and press Enter.
3. Stop recording by clicking the red "record" button in the Selenium IDE window.

Run the Script:

1. Click the green "play" button in the Selenium IDE window. You should see Chrome open (if it wasn't already), navigate to Google, and type "My name is Ayush" (or your name) in the search bar.

Firefox:

1. **Install Selenium IDE:** Visit the Firefox Add-ons website (https://addons.mozilla.org/en-US/firefox/) and search for "Selenium IDE." Click "Add to Firefox" and confirm the installation.
2. **Launch Selenium IDE:** Click the menu button (three horizontal lines) in Firefox, select "Add-ons and Themes," then find Selenium IDE and click "Open Sidebar."
3. **Create a New Project:** Similar to Chrome, click the "+" icon and choose "Record a new test in a new project." Name your project and provide a base URL (optional).

Record and Run the Script:

1. Follow steps 1-3 from the Chrome instructions above to record and run your first script with your choice name.

Microsoft Edge:

1. **Install Selenium IDE:** Open Microsoft Edge and navigate to the Edge Add-ons store (https://microsoftedge.microsoft.com/). Search for "Selenium IDE" and click "Get" to install the extension.
2. **Launch Selenium IDE:** Once installed, look for the new Selenium IDE icon in your Edge toolbar and click it.

Create and Run Your First Script:

1. **New Project:** Similar to Chrome and Firefox, click the "+" icon on the top left and choose "Record a new test in a new project." Name your project and provide a base URL (optional).
2. **Record Your Script:** Navigate to a website (e.g., Google) and perform the actions you want to automate (typing your name in the search bar, etc.). Click the red "record" button to stop recording.
3. **Run the Script:** Click the green "play" button to execute your recorded script. Edge should open (if not already), navigate to the specified website, and perform the recorded actions.

2. **Write down step to configure Selenium web driver to eclipse IDE and run first script with your name.**

Configuring Selenium WebDriver for Java in Eclipse:

Prerequisites:

- **Java Installed:** Ensure you have Java Development Kit (JDK) installed on your system. You can verify this by opening a terminal and running java -version. Download and install JDK if not present: https://www.oracle.com/java/technologies/downloads/
- **Eclipse Installed:** Download and install the latest version of Eclipse IDE from https://www.eclipse.org/downloads/

Steps:

1. **Create a New Eclipse Project:**
   - Launch Eclipse and create a new workspace (recommended practice).
   - Go to "File" -> "New" -> "Java Project" and give your project a name (e.g., "SeleniumTestProject").
   - Click "Finish."
2. **Download Selenium Client Libraries (JAR files):**
   - Visit the Selenium WebDriver downloads page: https://www.selenium.dev/downloads/
   - Download the appropriate WebDriver for your browser (e.g., chromedriver for Chrome, geckodriver for Firefox).
   - Extract the downloaded JAR file and remember its location.
3. **Add JAR files to Project Build Path:**
   - Right-click on your project name in the Package Explorer and select "Properties."
   - Go to "Java Build Path" -> "Libraries" tab.
   - Click "Add External JARs" and select the downloaded WebDriver JAR file (e.g., chromedriver.jar).
   - Click "Open" and then "OK" to save changes.
4. **Create a New Java Class:**
   - Right-click on your project package (usually "src") and select "New" -> "Class."
   - Name the class (e.g., "MyFirstSeleniumScript") and ensure "public class" is selected.
   - Click "Finish."

5. **Write Your First Script:**

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

public class MyFirstSeleniumScript {

    public static void main(String[] args) {

        // Create a new WebDriver instance
        WebDriver driver = new ChromeDriver();

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

        // Print your name in the console
        System.out.println("My name is Ayush");

        // Close the browser (optional)
        driver.quit();
    }
}
```

Explanation:

- We import necessary libraries for WebDriver and Chrome driver.
- We create a new WebDriver instance using the appropriate browser driver class (e.g., ChromeDriver for Chrome).
- We use the get method to navigate to a specific URL.
- We print your name to the console using System.out.println.
- We close the browser window using driver.quit (optional).

6. **Run the Script:**
   - Right-click on your Java class and select "Run As" -> "Java Application."
   - Observe the console output. You should see your name printed after it opens Google in the browser (if not closed automatically).

2. **Write down step to configure Selenium web driver to PyCharm IDE and run first script with your name.**

Prerequisites:

- **Python Installed:** Ensure you have Python installed on your system. You can verify this by opening a terminal and running python --version. Download and install Python if not present: https://www.python.org/downloads/
- **PyCharm Installed:** Download and install PyCharm from https://www.jetbrains.com/pycharm/

Steps:

1. **Create a New PyCharm Project:**
   - Launch PyCharm and create a new project. Give it a name (e.g., "SeleniumTestProject").
   - Click "Create."

2. **Install Selenium Library:**
   - Open the project terminal (usually at the bottom of the PyCharm window).
   - In the terminal, run the following command to install Selenium:

     Bash

     ```
     pip install selenium
     ```

3. **Download WebDriver (optional):**
   - You'll need a WebDriver for your chosen browser. Popular options include:
     - Chrome: https://chromedriver.chromium.org/downloads
     - Firefox: https://github.com/mozilla/geckodriver/releases
   - Download the appropriate WebDriver executable file and remember its location.

4. **Create a New Python File:**
   - Right-click on your project directory (usually named after your project) in the Project pane and select "New" -> "Python File."
   - Name the file (e.g., "my_first_script.py") and click "OK."

5. **Write Your First Script:**

Python

```
from selenium import webdriver

driver = webdriver.Chrome()

# Open a webpage
driver.get("https://www.google.com/")

# Print your name in the console
print("My name is Ayush")

# Close the browser (optional)
driver.quit()
```

Explanation:

- We import the webdriver module from Selenium.
- We optionally set the path to the downloaded WebDriver executable using webdriver.Chrome with the path argument. You can remove this line if using Chrome without a downloaded executable (requires additional setup).
- We create a new WebDriver instance using webdriver.Chrome.
- We use the get method to navigate to a specific URL.
- We print your name to the console using print.
- We close the browser window using driver.quit (optional).

Additional Notes:

- If you're not using a downloaded WebDriver executable, you'll need to configure your browser and environment variables to locate the appropriate WebDriver automatically. Refer to the Selenium documentation for specific instructions based on your browser: https://www.selenium.dev/documentation/webdriver/
- Consider creating a virtual environment for your project to isolate dependencies.

6. **Run the Script:**
   - Right-click on your Python script and select "Run '<script name>'."
   - Observe the console output. You should see your name printed after it opens Google in the browser (if not closed automatically).

3. Write a script of python for Selenium to download and configure for different browsers (Chrome, Firefox, IE or EDGE) to open following URL with Title, URL and Page Source.

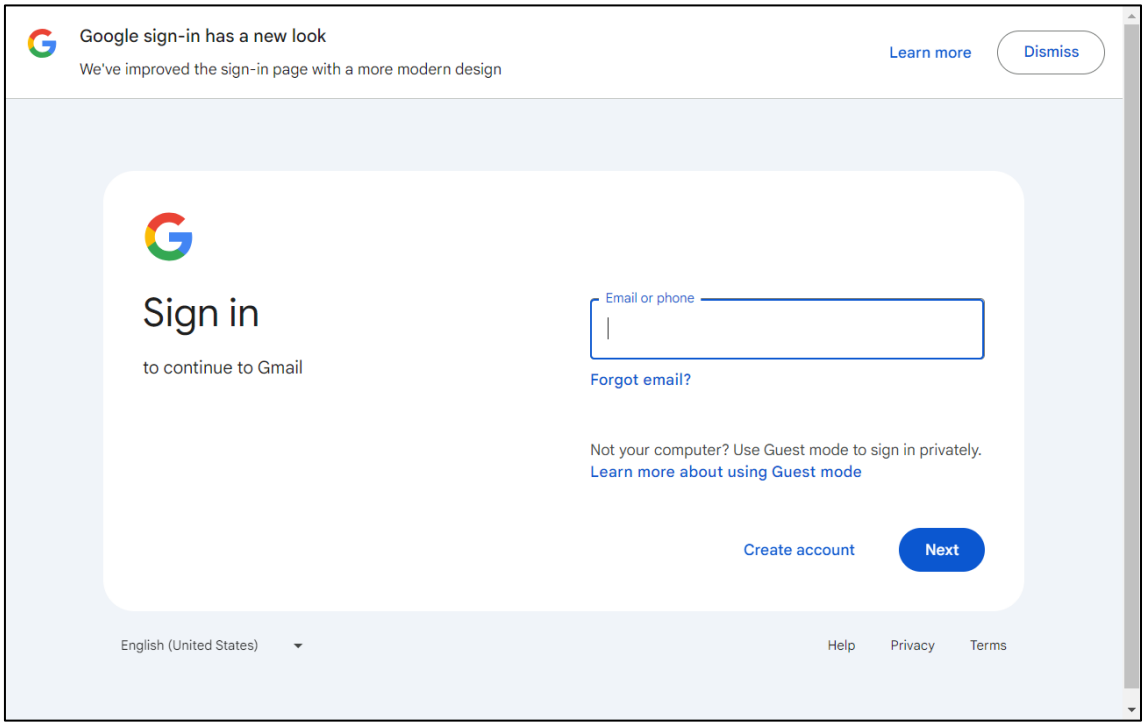
a. Google

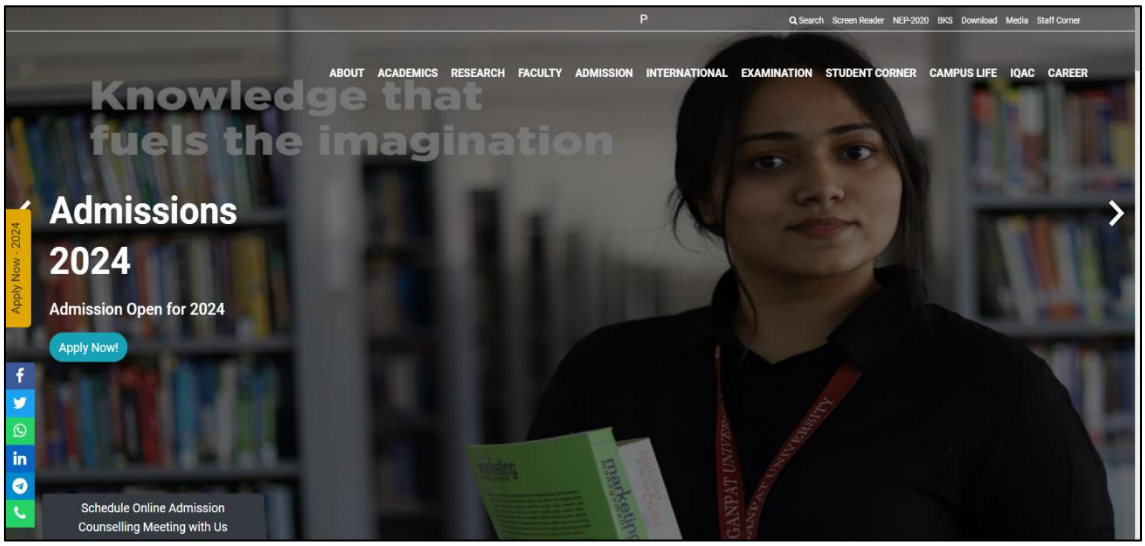
b. Facebook

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.keys import Keys

# Define browsers to test (modify based on availability)
browsers = ["chrome", "firefox", "edge"]

# Function to open URL, print details, and close browser
def open_and_print(browser, url):
    try:
        # Create WebDriver instance based on browser
        if browser == "chrome":
            driver = webdriver.Chrome()
        elif browser == "firefox":
            driver = webdriver.Firefox()
        elif browser == "edge":
            driver = webdriver.Edge()
        else:
            print(f"Browser '{browser}' not supported. Skipping.")
            return

        driver.get(url)

        # Get and print details
        title = driver.title
        page_url = driver.current_url
        page_source = driver.page_source

        print(f"\n** {browser.upper()} - {url} **")
        print(f"Title: {title}")
        print(f"URL: {page_url}")
        print(f"Page Source (truncated):\n{page_source[:100]}...")

        driver.quit()

    except Exception as e:
        print(f"Error opening {url} in {browser}: {e}")

# Open Google and Facebook in each browser
for url in ["https://www.google.com", "https://www.facebook.com"]:
    for browser in browsers:
        open_and_print(browser, url)
```

4. **Write a script of python for Selenium to take snapshot for different browser (Chrome, Firefox, IE or EDGE) on following URL.**
    a. **Gmail**
    b. **Erp GUNI**

```
import time
from selenium import webdriver
from selenium.webdriver.common.by import By

base_url = ["https://www.ganpatuniversity.ac.in/",
"https://mail.google.com/"]
websites = ["GUNI", "Google"]
driver = webdriver.Chrome()

for i in range(2):
    driver.get(base_url[i])
    driver.maximize_window()
    time.sleep(1)
    driver.save_screenshot("screenshots/homepage"+websites[i]+".png")

    # element = driver.find_element(By.XPATH, '//*[@id="headingText"]/span')
    # element.screenshot("screenshots/gmail_element.png")  # Corrected file
path

driver.quit()
```

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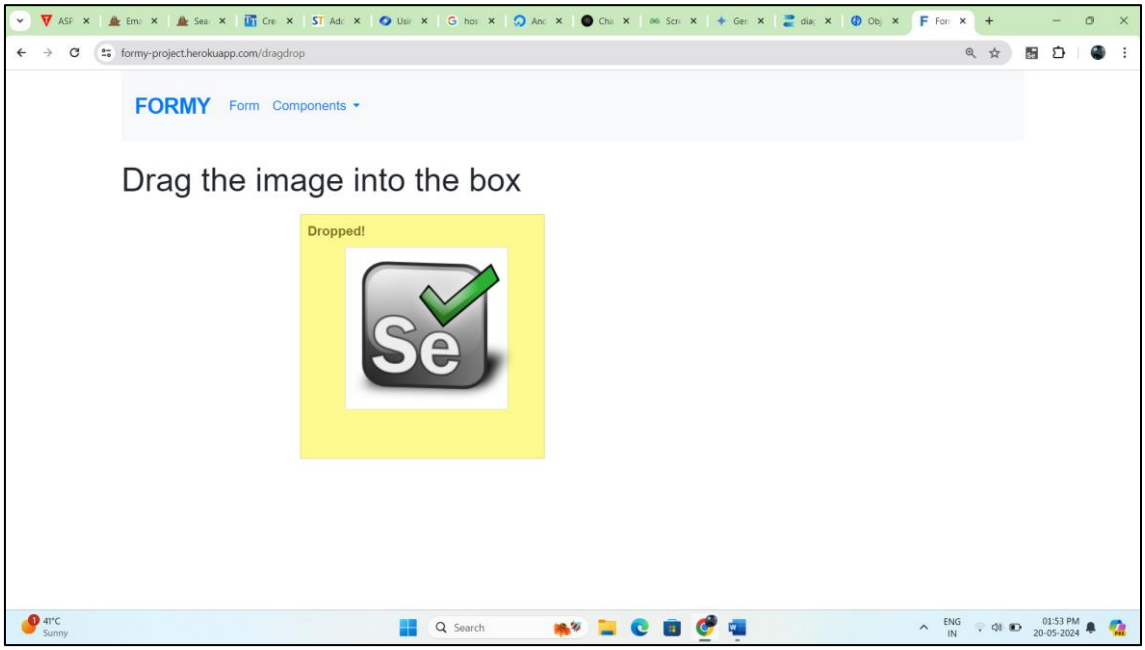
5. **Write a script of python for selenium to open new linked page from opened page using XPATH and demonstrate several commands of Navigation on following sites.**
   a. **Open www.google.com**
   b. **Use Back, Forward and time methods**

```
import time
from selenium import webdriver
from selenium.webdriver.common.by import By


base_url = "https://en.wikipedia.org/wiki/Gluon"

try:
    driver = webdriver.Chrome()
    driver.get(base_url)
    print(driver.title)

    url = driver.find_element(By.XPATH, '(//a[@title="Elementary
particle"])[3]').get_attribute("href")

    driver.get(url)
    time.sleep(3)
    print(driver.title)
    driver.back()
    driver.forward()
except Exception as e:
    print("Error!", e)
finally:
    driver.quit()
```

6. **Write a script of python for Selenium to demonstrate different Locator Strategies to locate single first element such as ID, NAME, CLASS_NAME, TAG_NAME, XPATH, LINKTEXT, or PARTIAL TEXT different URL or user defined pages.**

```
import time

from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains

base_url = "https://auth.geeksforgeeks.org/"
driver = webdriver.Chrome()
driver.get(url=base_url)

print(driver.find_element(By.ID, "luser").tag_name)
print(driver.find_element(By.NAME, "pass").tag_name)
print(driver.find_element(By.CLASS_NAME, "btn.btn-green.signin-
button").get_attribute("class"))
print(driver.find_element(By.CSS_SELECTOR, "a.btn.btn-social.btn-
linkedin").get_attribute("src"))
print(driver.find_element(By.XPATH,
'//*[@id="gitlogin"]').get_attribute("src"))
print(driver.find_element(By.LINK_TEXT, "Why Create an
account?").get_attribute("href"))
print(driver.find_element(By.PARTIAL_LINK_TEXT, "Forgot Pass").text)
print(driver.find_element(By.TAG_NAME, "img").get_attribute("src"))

driver.quit()
```

7. **Write a script of python for select an image and drop into particular box on URL for different browser (Chrome, Firefox, IE or EDGE)**

   - **https://formy-project.herokuapp.com/dragdrop**

```
import time
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains


try:
    driver = webdriver.Chrome()
    driver.get("https://formy-project.herokuapp.com/dragdrop")
    image = driver.find_element(By.ID, "image")
    box = driver.find_element(By.ID, "box")

    actions = ActionChains(driver=driver)
    actions.drag_and_drop(image, box)
    actions.perform()

except Exception as e:
    print(e)

finally:
    driver.quit()
```