

Q1:-Test any website and write the script for finding elements by including all locators.

❖ **By.className:**

```
package Selenium_Assignment;

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

public class Assignment {

    public static void main(String[] args) {

        System.setProperty("webdriver.chrome.driver","C:\\\\Sele\\\\chromedriver_win32\\\\chromedriver.exe");

        WebDriver driver = new ChromeDriver();
        driver.get("https://www.redbus.in/");
        driver.manage().window().maximize();
        WebElement one = driver.findElement(By.className("db"));
        one.click();
        one.sendKeys("Akola");
        System.out.println("FOUND BY className");

    }

}
```

OUTPUT:

```
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.
ChromeDriver was started successfully.
Apr 23, 2022 10:51:35 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 10:51:35 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 10:51:35 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
FOUND BY className
```

❖ **By.cssSelector:**

```
package Selenium_Assignment;
import org.openqa.selenium.By;
```

```

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

public class Q2_Assignment {

    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\\\chromedriver_win32\\\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://www.redbus.in/");
        driver.manage().window().maximize();
        driver.findElement(By.cssSelector("input#dest")).sendKeys("pune");

        System.out.println("FOUND cssSelector");

    }

}

```

OUTPUT:

```

<terminated> Q2_Assignment [Java Application] C:\Program Files\Java\jdk-11.0.2\bin\javaw.exe (23-Apr-2022, 10:57:39 am - 10:57:42 am)
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver was started successfully.
Apr 23, 2022 10:57:42 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 10:57:42 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version four
Apr 23, 2022 10:57:42 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
FOUND cssSelector

```

❖ By.id:

```

package Selenium_Assignment;

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

public class Q3_Assignment {

```

```

    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver", "C:\\Sele\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://www.redbus.in/Home/SmsAndEmailTicket");
        driver.manage().window().maximize();

        driver.findElement(By.id("searchTicketTIN")).sendKeys("7875113679");
        //driver.findElement(By.id("mobileNoInp")).click();

        System.out.println("FOUND id");

    }
}

```

OUTPUT:

```

<terminated> Q3_Assignment [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (23-Apr-2022, 11:03:17 am - 11:03:24 am)
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDr
ChromeDriver was started successfully.
Apr 23, 2022 11:03:20 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:03:20 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 11:03:20 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
FOUND id

```

❖ By.LinkText:

```

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

public class Q4_Assignment {

    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver", "C:\\Sele\\chromedriver_win32\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://www.redbus.in/");
    }
}

```

```

        driver.findElement(By.linkText("redRail")).click();

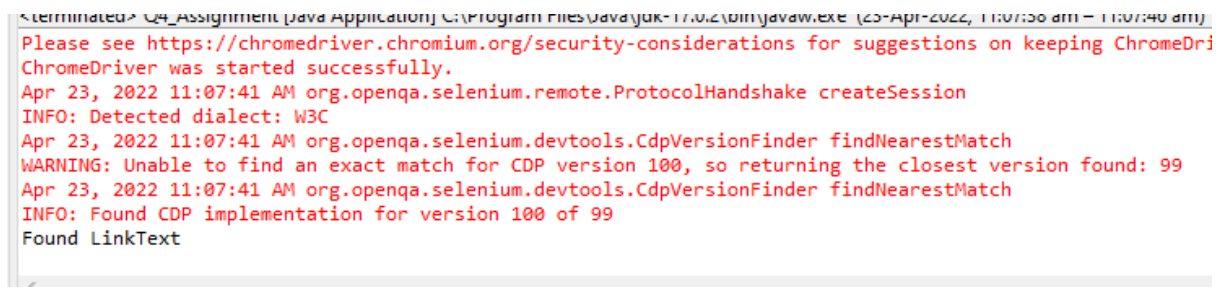
        System.out.println("Found LinkText");

    }

}

```

OUTPUT:



```

terminated> Q4_Assignment [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (23-Apr-2022, 11:07:38 am - 11:07:40 am)
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDri
ChromeDriver was started successfully.
Apr 23, 2022 11:07:41 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:07:41 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 11:07:41 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
Found LinkText

```

❖ By.name:

```

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

public class Q5_Assignment {

    public static void main(String[] args) {
System.setProperty("webdriver.chrome.driver","C:\\\\Sele\\\\chromedriver_win32\\\\chro
medriver.exe");

        WebDriver driver = new ChromeDriver();
        driver.get("https://www.redbus.in/Home/SmsAndEmailTicket");

        driver.findElement(By.name("Email")).sendKeys("rohitmvishwakarma
@gmail.com");
        driver.findElement(By.name("Email")).click();
    }
}

```

```
System.out.println("Found NAME");
```

```
}
```

```
}
```

OUTPUT:

```
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping  
ChromeDriver was started successfully.  
Apr 23, 2022 11:12:22 AM org.openqa.selenium.remote.ProtocolHandshake createSession  
INFO: Detected dialect: W3C  
Apr 23, 2022 11:12:22 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch  
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version  
Apr 23, 2022 11:12:22 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch  
INFO: Found CDP implementation for version 100 of 99  
Found NAME
```

❖ By.partialLinkText:

```
package Selenium_Assignment;
```

```
import org.openqa.selenium.By;
```

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

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

```
public class Q6_Assignment {
```

```
    public static void main(String[] args) {
```

```
        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\\\chromedriver_win32\\\\  
        chromedriver.exe");
```

```
        WebDriver driver = new ChromeDriver();
```

```
        driver.get("https://www.redbus.in/");
```

```
        driver.findElement(By.partialLinkText("red")).click();
```

```
        System.out.println("FOUND PartialLink");
```

```
}
```

```
}
```

OUTPUT:

```
<terminated> Q6_Assignment [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (23-Apr-2022, 11:15:06 am - 11:15:15 am)
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver secure.
ChromeDriver was started successfully.
Apr 23, 2022 11:15:10 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:15:10 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 11:15:10 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
FOUND PartialLink
```

❖ By.tagName:

```
package Selenium_Assignment;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;

public class Q7_Assignment {

    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver","C:\\\\Sele\\\\chromedriver_win32\\\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("https://www.redbus.in/");
        driver.findElement(By.tagName("input"));

        System.out.println("FOUND tagName");

    }

}
```

OUTPUT:

```
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeD
ChromeDriver was started successfully.
Apr 23, 2022 11:17:45 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:17:45 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 11:17:45 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
FOUND tagName
```

❖ By.xpath:

```
package Selenium_Assignment;

import org.openqa.selenium.By;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.chrome.ChromeDriver;

public class Q8_Assignment {

    public static void main(String[] args) {

        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\chromedriver_win32\\chromedriver.exe");

        WebDriver driver = new ChromeDriver();

        driver.get("https://www.redbus.in/");

        driver.manage().window().maximize();

        driver.findElement(By.xpath("//*[@id=\"src\"]")).click();

        System.out.println("FOUND XPath");

    }
}
```

```
}
```

OUTPUT:

```
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.
ChromeDriver was started successfully.
Apr 23, 2022 11:21:00 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:21:00 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 11:21:00 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
FOUND XPath
```

Q2:-Test any website and write the script for that involves keyboard actions dragAndDrop(source, target), keyDown(modifier_key), keyUp(modifier_key), moveToElement(toElement), release(),sendKeys(onElement, charsequence).

1) DRAG AND DROP:

```
package Selenium_Assignment;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.*;
import org.openqa.selenium.interactions.Actions;
public class DragandDrop {
    public static void main(String[] args) throws InterruptedException
    {
        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\\\chromedriver_win32\\\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        WebDriver driver1 = new ChromeDriver();
        Actions action = new Actions(driver);
        driver.get("https://jqueryui.com/droppable/#default");
        driver.manage().window().maximize();
        driver.switchTo().frame(driver.findElement(By.className("demo-frame"))));
        WebElement draggableitem =
        driver.findElement(By.id("draggable"));
        WebElement dropableitem =
        driver.findElement(By.id("droppable"));
        Thread.sleep(3000);
        action.dragAndDrop(draggableitem,
        dropableitem).build().perform();
        System.out.println("DONE DRAG AND DROP");
    }
}
```



```
}
```

OUTPUT:

```
<terminated> DragandDrop [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (23-Apr-2022, 11:41:48 am – 11:42:03 am)
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.
ChromeDriver was started successfully.
Apr 23, 2022 11:41:55 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:41:55 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99
Apr 23, 2022 11:41:55 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
DONE DRAG AND DROP
```

2) Keyboard actions- keyDown(modifier_key), keyUp(modifier_key), moveToElement(toElement), release(),sendKeys(onElement, charsequence)

```
package Selenium_Assignment;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.*;
import org.openqa.selenium.interactions.Action;
import org.openqa.selenium.interactions.Actions;

public class KeyUPandDown {
    public static void main(String[] args) throws InterruptedException
    {
        String baseUrl = "http://www.facebook.com/";
        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\\\chromedriver_win32\\\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get(baseUrl);
        WebElement txtUsername = driver.findElement(By.id("email"));
        Actions builder = new Actions(driver);
        Action seriesOfActions = builder
            .moveToElement(txtUsername)
            .click()
            .keyDown(txtUsername, Keys.SHIFT)
            .sendKeys(txtUsername, "hello")
            .keyUp(txtUsername, Keys.SHIFT)
            .doubleClick(txtUsername)
            .contextClick()
            .build();
        seriesOfActions.perform() ;
        System.out.println("Tested Passed!");
        Thread.sleep(3000);
        driver.close();
    }
}
```

OUTPUT:

```
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping
ChromeDriver was started successfully.
Apr 23, 2022 11:58:27 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 11:58:27 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version
Apr 23, 2022 11:58:27 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
Tested Passed!
```

Q3:-Test any website and write the script for testing textbox, dropdown,checkbox and radio button for the registration form.

1)TextBox:

```
package Selenium_Assignment;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
public class CheckBox {
    public static void main(String[] args)
    {
        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\\\chromedriver_win32\\\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        String baseUrl = "http://www.testyou.in/Login.aspx";
        driver.get(baseUrl);
        WebElement email =
driver.findElement(By.id("ctl00_CPHContainer_txtUserLogin"));
        WebElement password =
driver.findElement(By.id("ctl00_CPHContainer_txtPassword"));
        email.sendKeys("abcd@gmail.com");
        password.sendKeys("1234567");
        System.out.println("Text Field Set");
        // Deleting values in the text box
        email.clear();
        password.clear();
        System.out.println("Text Field Cleared");
        // Find the submit button
        WebElement login =
driver.findElement(By.id("ctl00_CPHContainer_btnLoginn"));
        // Using click method to submit form
        email.sendKeys("abcd@gmail.com");
        password.sendKeys("1234567");
        login.click();
        System.out.println("Login Done with Click");
        driver.quit();
    }
}
```

OUTPUT:

```
Apr 23, 2022 12:40:28 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 12:40:28 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version 1
Apr 23, 2022 12:40:28 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
Text Field Set
Text Field Cleared
Login Done with Click
```

2)Radio Buttons and Checkbox:

```
package Selenium_Assignment;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
public class RadioButton {

    public static void main(String[] args) {
System.setProperty("webdriver.chrome.driver","C:\\\\Sele\\\\chromedriver_win3
2\\\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        String baseUrl =
"https://courses.letscodeit.com/practice";
        driver.get(baseUrl)
        WebElement r1=driver.findElement(By.id("bmwradio"));
            r1.click();
            System.out.println("Radio button bmw is selected");
        WebElement r2=driver.findElement(By.id("benzradio")); r2.click();
        System.out.println("Radio button benz is selected");
        WebElement r3=driver.findElement(By.id("hondaradio")); r3.click();
            System.out.println("Radio button honda is selected")

        WebElement c1=driver.findElement(By.xpath("//*[@id=\"bmwcheck\"]"));
        WebElement c2=driver.findElement(By.xpath("//*[@id=\"benzcheck\"]"));
            WebElement
c3=driver.findElement(By.xpath("//*[@id=\"hondacheck\"]"));

            c1.click();
            if(c1.isSelected()) {
System.out.println("Checkbox bmw is toggled On");
            }
            else {
System.out.println("Checkbox bmw is toggled Off");
            }
            c1.click();
            if(!c1.isSelected()) {
System.out.println("Checkbox bmw is toggled Off");
            }
            c2.click();
            if(c2.isSelected()) {
System.out.println("Checkbox benz is toggled On");
            }
            else {
System.out.println("Checkbox benz is toggled Off");
            }
            c2.click();
            if(!c2.isSelected()) {
System.out.println("Checkbox benz is toggled Off");
            }
```

```

    }
    c3.click();
    if(c3.isSelected()) {
        System.out.println("Checkbox honda is toggled On");
    }
    else {
        System.out.println("Checkbox honda is toggled Off");
    }
    c3.click();
    if(!c3.isSelected()) {
        System.out.println("Checkbox honda is toggled Off");
    }
    driver.quit();
}

}

```

OUTPUT:

```

<terminated> RadioButton [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (23-
INFO: Found CDP implementation for version 100 of 99
Radio button bmw is selected
Radio button benz is selected
Radio button honda is selected
Checkbox bmw is toggled On
Checkbox bmw is toggled Off
Checkbox benz is toggled On
Checkbox benz is toggled Off
Checkbox honda is toggled On
Checkbox honda is toggled Off

```

3) DROPDOWN:

```

package Selenium_Assignment;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.support.ui.Select;

public class DropDown {

    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver", "C:\\Sele\\chromedriver_win3
2\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        String baseUrl =
"https://courses.letscodeit.com/practice";
        driver.get(baseUrl);
    }
}

```

```

        Select drpDown = new
Select(driver.findElement(By.id("carselect")));
        drpDown.selectByVisibleText("BMW");
        System.out.println("Selected by Visible text = BMW");
        drpDown.selectByIndex(2);
        System.out.println("Selected by Index = Benz");
        drpDown.selectByValue("honda");
        System.out.println("Selected by Value = Honda");

        driver.quit();
    }
}

```

OUTPUT:

```

Apr 23, 2022 1:00:17 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 1:00:17 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version fo
Apr 23, 2022 1:00:17 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
Selected by Visible text = BMW
Selected by Index = Benz
Selected by Value = Honda

```

4)Alert Box:

```

package Selenium_Assignment;

import java.time.Duration;

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

public class AlertBox {
    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver", "C:\\\\Sele\\\\chromedriver_win3
2\\\\chromedriver.exe");

        WebDriver driver = new ChromeDriver();
        driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(20));
        driver.get("https://courses.letscodeit.com/practice");
        driver.manage().window().maximize();
        WebElement send = driver.findElement(By.id("name"));
        send.sendKeys("ROHIT VISHWAKARMA");

        driver.findElement(By.xpath("//*[@id=\"alertbtn\"]")).click();
    }
}

```

```

        Alert alertBox = driver.switchTo().alert();
        String alertText = alertBox.getText();
        alertBox.accept();
        System.out.println("Alert text :"+alertText);

        driver.quit();
    }
}

```

OUTPUT:

```

Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping
ChromeDriver was started successfully.
Apr 23, 2022 1:58:08 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Apr 23, 2022 1:58:08 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find an exact match for CDP version 100, so returning the closest version for
Apr 23, 2022 1:58:08 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
INFO: Found CDP implementation for version 100 of 99
Alert text :Hello ROHIT VISHWAKARMA, share this practice page and share your knowledge

```

Q4: -What is meant by XPath in Selenium. Explain XPath Absolute and XPath Relative.

Ans: -

XPath is a technique in Selenium to navigate through the HTML structure of a page. XPath enables testers to navigate through the XML structure of any document, and this can be used on both HTML and XML documents.

❖ **Absolute XPath**

The simplest XPath locator example in Selenium is to provide the absolute path of an element in the DOM structure. For instance, consider the HTML below:

```
<html>
<head>...</head>
<body>
...
<form id="loginForm">
<input name="name" type="text" value="First Name" />
<input name="name" type="text" value="Last Name" />
<input name="email" type="text" value="Business Email" />
<input name="password" type="password" />
<input name="continue" type="submit" value="Sign Me Up" />
</form>
</body>
</html>
```

The syntax to select the business email field is as follows:

```
html/body/form/input[3]
```

This searches for the first form tag in the body of the page and selects the third input field in the form. This format, though simple, is also the most vulnerable to minor changes in the structure of the page. This method is also known as a single slash search.

❖ **B . Relative XPath**

A relative path, or a double slash search, begins with double slashes. The double slashes signify a break in the absolute path. Here is how to select the same business email field using a relative path.

```
//form/input[3]
```

If there are multiple forms on the page, one may need to provide an extra identifier for the form field.

Note :-

How to handle dynamic elements in Selenium using XPath?

1. Using attributes

While the example shown above is feasible if there is only a single form on the page, one can make the search patterns more robust by using attributes.

```
//form[@id='loginForm']/input[3]
```

In place of id, one can use any attribute and its corresponding value to locate an element with Selenium.

While this example shows the use of a single attribute, one can also use multiple attributes of the same tag to locate it on the page. For instance, to select the Last Name field, one can use the following XPath syntax in Selenium:

```
//input[@name='name'][@value='Last Name']
```

2. Logical operators in selections

While attributes may be sufficient to locate elements in most cases, testers may feel the need of using logical operators too. For instance, if the HTML structure has name or id attributes populated by the value “name”, one may use the following syntax to select them.

```
//input[@id='name' or @name='name']
```

Similarly, one can replace the *or* keyword with *and* to only select an element that satisfies all conditions.

3. Using text

One may search for an element using the text that it contains too. For instance, to select a link that says “Click Me”, one can use the following search:

```
//a[text()='Click Me']
```

This snippet searches for any hyperlink that contains the text “Click Me” within it. Replace the tag with a wildcard * to search for any element that contains the text “Click Me”.

```
//*[text()='Click Me']
```


Q 5. Explain the pause feature in Selenium IDE.

pause (time in milliseconds)

The **pause** command is a simple wait command and useful to delay the execution of the automated testing for the specified time. Note that the wait time is in milliseconds. So if you want to wait for 3 seconds, enter 3000.

In this example the Selenium IDE will wait for five seconds (5000ms).

Command	Target
open	https://ui.vision/
pause	5000
open	https://ocr.space/

Q 6. With the help of code snippets, explain how we can create right-click and mouse hoveractions in Selenium.

A mouse hover is also called as hover. Mouse hover action is basically an action where a user places a mouse over a designated area like a hyperlink. It can cause some event to get triggered.

```
Actions actions = new Actions(driver);
```

As seen above, the `moveToElement()` method has argument `WebElement` target. So, it is required to pass a `WebElement` object to the method. This `WebElement` target is any web element where the mouse needs to be moved. To find the target element use the below command:

```
WebElement target = driver.findElement(Any By strategy & locator);
```

Here, you can use any **By strategy** to locate the **WebElement** like find element by its id, name attribute, etc.

Now, when we have got the actions class object and the element as well, just invoke **perform()** method to make a move to the element:

```
actions.moveToElement(target).perform();
```

Let's see what happens internally when invoke the `perform()` method above:

- **Move Mouse Action** : Mouse gets moved to the middle of the element.
- Here, the element is scrolled into view and its location gets calculated using `getBoundingClientRect`.
- **Build** : `build()` method is used to generate a composite action containing all actions.
- In this case, it's just a single move mouse action. If you observe, we have not invoked it in our above command. This is because the build is executed in the `perform` method internally.
- **Perform** : `perform()` method performs the actions we have specified. But before that, it internally invokes `build()` method first. After the build, the action is performed.

Practice Exercise to Perform Mouse Hover using Actions Class in Selenium

```
import java.time.Duration;

public class Mousehover {

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

        System.setProperty("webdriver.chrome.driver", "E:\\ASDM\\Selenium\\chromedriver.exe");

        WebDriver driver=new ChromeDriver();

        String baseUrl = "https://demo.nopcommerce.com/";
        driver.get(baseUrl);
        Actions a1=new Actions(driver);
        WebDriverWait w1=new WebDriverWait(driver,Duration.ofSeconds(10));
        WebElement x=w1.until(ExpectedConditions.visibilityOfElementLocated(By.linkText("Electronics")));
        a1.moveToElement(x).perform();
        driver.close();
    }
}
```

Now it is the time to write a selenium automation script to mouse hover the object using `moveToElement()` method.

Find below the steps of the scenario to be automated:

1. Launch the web browser and launch our practice page <https://demoqa.com/menu/>
2. Find the required element i.e. **Main item 2** object in our sample
3. Now move the mouse on **Main item 2** option which will display the submenu list
4. Find the required element i.e. **SUB SUB List** object in the sub menu list
5. Move mouse on **SUB SUB List** option which will display one more submenu list
6. Find the required element i.e. 'Alternative' object in submenu list
7. Click on **Sub Sub item**

Q 7. Can we handle a windows-based pop-up in Selenium, and if not, then what are the alternatives?

Yes, it is possible to handle Windows based pop-ups in Selenium webdriver. Sometimes on clicking a link or a button, another window gets opened. It can be a pop up with information or an advertisement.

The methods `getWindowHandles` and `getWindowHandle` are used to handle child windows. The `getWindowHandles` method stores all the handle ids of the opened windows in the form of Set data structure.

The `getWindowHandle` method stores the handle id of the window in focus. Since the `getWindowHandles` method holds all the opened window handle ids, we can iterate through these handle ids with the iterator and next methods.

To switch to a specific window, `switchTo().window()` method can be used. The handle id of the window where we want to switch is passed as a parameter to this method.

ASSIGNMENT NO-08 (TESTING)

```
FillForm.java  RadioCheck.java  DropDownSelect.java  MouseHoverAction.java  WindowPopUps.java x
Selenium4 > src > Practice > WindowPopUps > main(String[]): void

9 public class WindowPopUps {
10
11 @SuppressWarnings("deprecation")
12 public static void main(String[] args) {
13     System.setProperty("webdriver.chrome.driver", "D:\\Other\\Softwares\\Chrome Driver\\chromedriver.exe");
14     WebDriver driver=new ChromeDriver();
15     //implicit wait
16     driver.manage().timeouts().implicitlyWait(15, TimeUnit.SECONDS);
17     //url launch
18     driver.get("https://secure.indeed.com/account/login");
19     driver.findElement(By.id("login-google-button")).click();
20     //hold window handles
21     Set<String> s = driver.getWindowHandles();
22     // iterate handles
23     Iterator<String> i = s.iterator();
24     //child window handle id
25     String c = i.next();
26     //parent window handle id
27     String p = i.next();
28     // child window switch
29     driver.switchTo().window(c);
30     System.out.println("Page title of child window: " + driver.getTitle());
31     // switch to parent window
32     driver.switchTo().window(p);
33     System.out.println("Page title of parent window: " + driver.getTitle());
34     //browser quit
35     driver.quit();
36 }
37 }
```

<

Console x

<terminated> WindowPopUps [Java Application] D:\Other\Softwares\sts-4.13.1.RELEASE\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.1

Apr 21, 2022 3:23:48 AM org.openqa.selenium.remote.ProtocolHandshake createSession

INFO: Detected dialect: W3C

Apr 21, 2022 3:23:48 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch

WARNING: Unable to find an exact match for CDP version 100, so returning the closest version found: 99

Apr 21, 2022 3:23:48 AM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch

INFO: Found CDP implementation for version 100 of 99

Page title of child window: Sign In | Indeed Accounts

Page title of parent window: Sign in - Google accounts