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1	Apple iPhone XR (64GB) - White B07JGXM9WN (IPHONEXR-WHITE-64GB-D) HSN:8517	₹40,177.68	₹0.00	1	₹40,177.68	12%	IGST	₹4,821.32	₹44,999.00
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How to handle Actions class in Selenium WebDriver?

Last updated on Nov 27,2019 19.9K Views



Vaishnavi M R

Actions play a vital role in testing an application using [Selenium](#). In order to perform any operations on the web application like accessing the drop-down box, double click, right click and many more, actions class is a necessity. On that note, I'm writing this article on how to handle the Actions class in Selenium to help you understand how actions work.

I'll be discussing this topic in the following sequence:

- [What is the Actions class?](#)
- [Different methods under Actions class](#)
- [How to handle Actions class in Selenium](#)
- [Demo](#)

So, let's get started.

What is the Actions class?

Actions class is a built-in ability to handle various types of keyboard and mouse events. In [Selenium WebDriver](#), handling these events including operations such as drag and drop or clicking on multiple elements with the help of the control key are done using the advanced user interactions API. It mainly consists of *Actions* which are needed while performing various operations.



This *Actions class* is the user-facing API for emulating complex action events. You can directly use this class rather than using the input devices, i.e. keyboard and mouse.

```
1 | Actions action = new Actions(driver);
2 | action.moveToElement(element).click().perform();
```

I will use ***perform()*** to execute the actions.

Using this Actions API, keyboard interactions can be easily handled by the [WebDriver](#). To use mouse actions, I will use the current location of the web element and then perform some kind of operation.

Now, let us learn about the different methods under this class that are used to perform some actions.

Different methods under Actions class

There are basically two methods which help in working with the actions in [Selenium](#), namely:

- Keyboard interface
- Mouse interface

Let us learn about them in detail.

Keyboard interface



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- **sendKeys(keysToSend):** Sends a series of keystrokes onto the element.
- **keyDown(theKey):** Sends a key press without release it. Subsequent actions may assume it as pressed.

Example: Keys.ALT, Keys.SHIFT, or Keys.CONTROL);

- **keyUp(theKey):** Performs a key release.

Mouse interface

- **click():** Clicks on the element.
- **doubleClick ():** Double clicks on the element.
- **contextClick() :** Performs a context-click (right-click) on the element.
- **clickAndHold():** Clicks at the present mouse location without releasing.
- **dragAndDrop(source, target):** Clicks at the source location and moves to the location of the target element before releasing the mouse. source (element to grab, target – element to release).
- **dragAndDropBy(source, xOffset, yOffset):** Performs click-and-hold at the source location, shifts by a given offset value, then frees the mouse. (X offset – to shift horizontally, Y Offset – to shift vertically).
- **moveByOffset(x-offset, y-offset):** Shifts the mouse from its current position (or 0,0) by the given offset. x-offset – Sets the horizontal offset (negative value – shifting the mouse to the left), y-offset – Sets the vertical offset (negative value – shifting the mouse to the up).
- **moveToElement(toElement):** It shifts the mouse to the center of the element.
- **release():** Releases the pressed left mouse button at the existing mouse location.

Once you get a proper idea about the different methods under the Actions class, it will be easy to implement a use case of the same.

How to handle actions class in Selenium

To handle these actions class in Selenium, you must follow a proper format.

- Create an object of the Actions class 'action'
- Focus on the element using [WebDriver](#): action.moveToElement(element).build().perform();
- Build().perform() is used to compile and execute the actions class.
- Use the different methods under the actions class to perform various operations like click(), drag and drop and so on.

Now let's consider working on a demo to understand how Actions class work.

Demo

I will be performing actions on two websites namely [edureka.co](#) and [jqueryui.com](#).

- Download the [Java](#) libraries on to your system.
- The first thing to do when you want to work with Selenium is to make sure you know [how to install](#) it to your system.
- An IDE to work on. I prefer working on the Eclipse IDE because it is user-friendly and it is easy to execute Java projects.
- Select the [browser driver](#) of your choice.
- Get the URL of the web page that you want to test.
- Perform corresponding actions like clicking the button, mouse move, key press and so on.

Refer this code to understand how actions are helpful while testing an application.



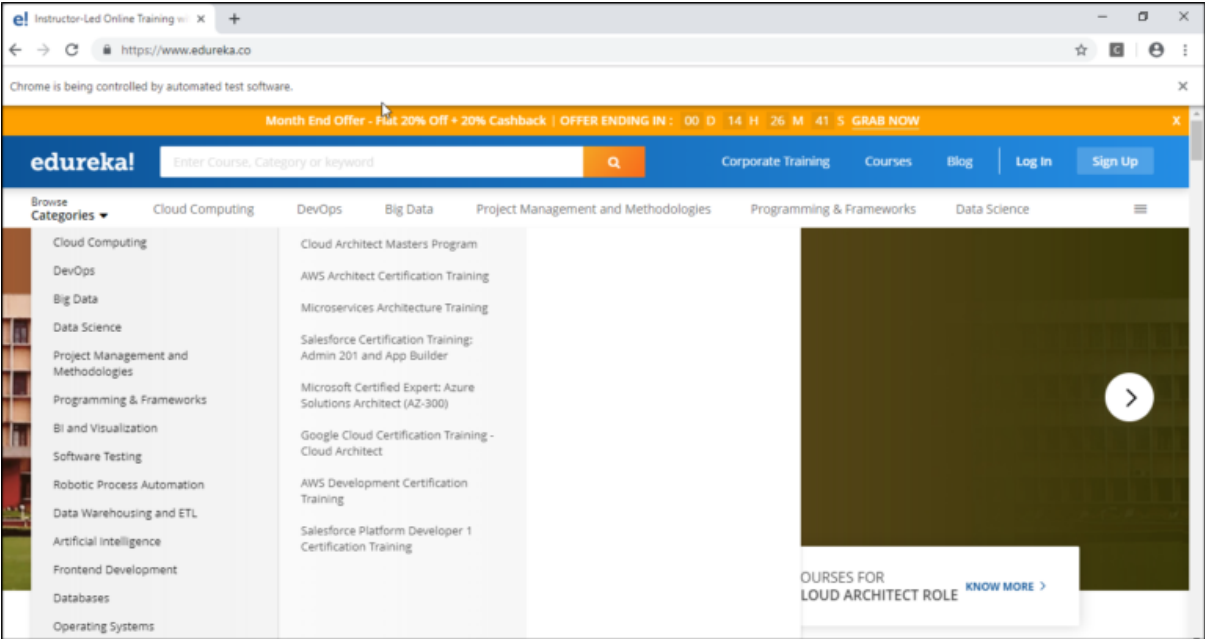
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```
5 import org.openqa.selenium.Keys;
6 import org.openqa.selenium.WebDriver;
7 import org.openqa.selenium.WebElement;
8 import org.openqa.selenium.chrome.ChromeDriver;
9 import org.openqa.selenium.interactions.Action;
10 import org.openqa.selenium.interactions.Actions;
11
12 public class Selenium {
13
14     public static void main(String[] args) throws InterruptedException {
15         System.setProperty("webdriver.chrome.driver", "C:\\Users\\Vaishnavi\\Desktop\\chromedriver_win32 (2)\\chromedriver.exe");
16         WebDriver driver = new ChromeDriver();
17         driver.get("<a href='http://www.edureka.co/'>http://www.edureka.co/</a>");
18         driver.manage().window().maximize();
19         driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);
20         Thread.sleep(3000);
21         Actions builder = new Actions(driver);
22         builder.moveToElement(driver.findElement(By.id("header_topcat"))).build().perform();
23         Thread.sleep(3000);
24         WebElement link = driver.findElement(By.cssSelector("#software-testing-certification-courses"));
25         builder.moveToElement(link).build().perform();
26         Thread.sleep(2000);
27         driver.findElement(By.xpath("//ul[@class='dropdown-menu']/li/a[text()='Software Testing']")).click();
28         Thread.sleep(4000);
29         WebElement act = driver.findElement(By.id("search_inp"));
30         builder.moveToElement(act).build().perform();
31         Thread.sleep(3000);
32         WebElement search = driver.findElement(By.xpath("//span[@class='typeahead__button']"));
33         builder.moveToElement(search).build().perform();
34         Thread.sleep(3000);
35         Action seriesOfActions;
36         seriesOfActions = builder
37             .sendKeys(act, "Selenium")
38             .keyDown(search, Keys.SHIFT)
39             .keyUp(search, Keys.SHIFT)
40             .build();
41         seriesOfActions.perform();
42         Thread.sleep(3000);
43         driver.quit();
44     }
45 }
46 }
```

The output for the above code is depicted below:



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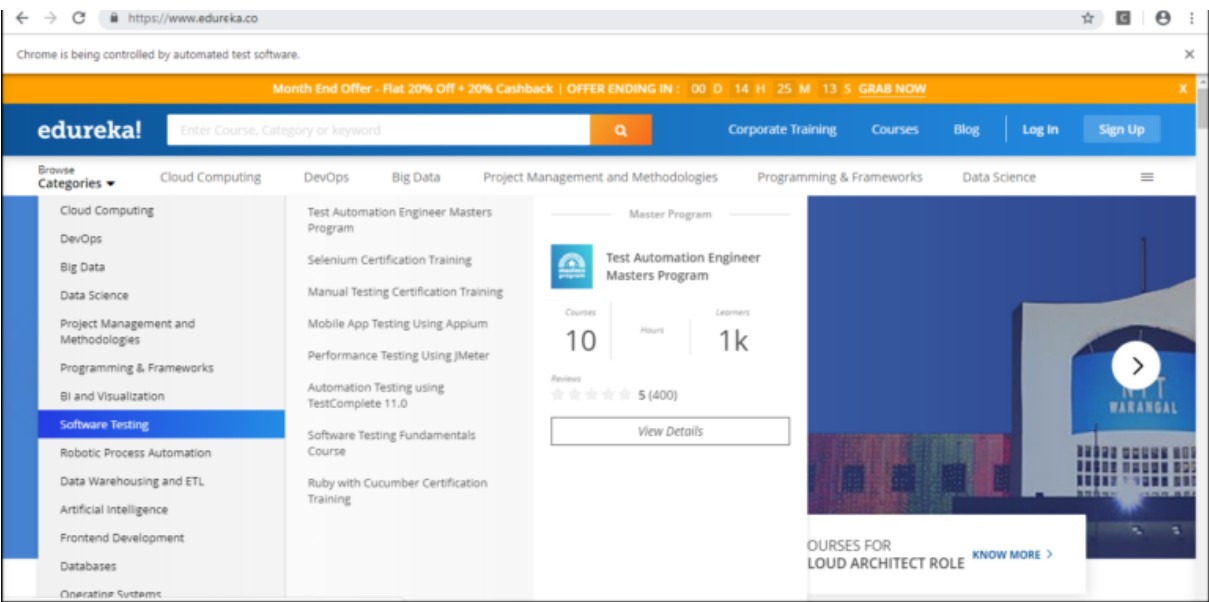
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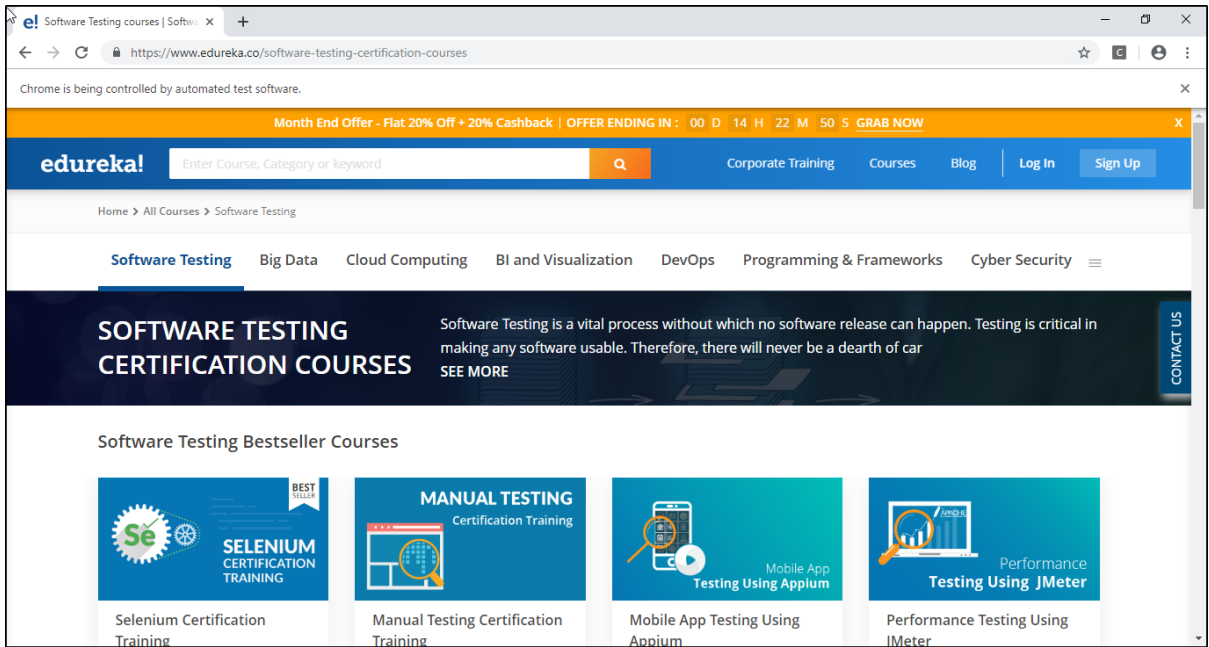
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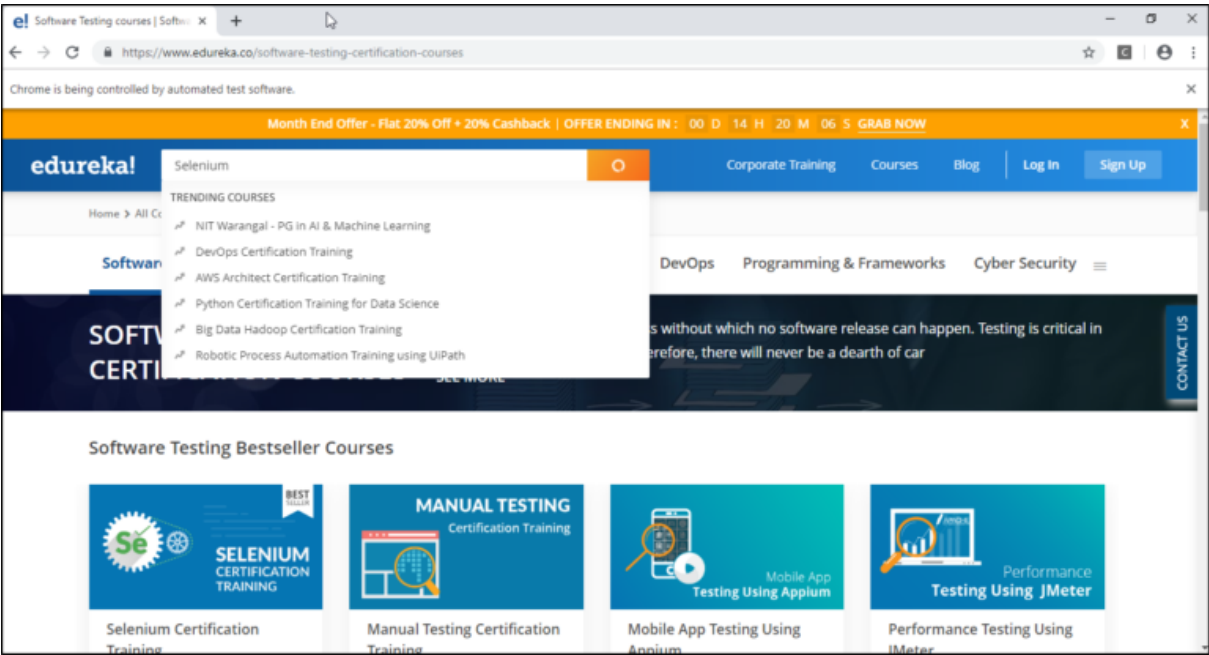
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Clicks on “Software testing” and navigates to that page.



Performs keyboard functions like KeyUp, KeyDown, and sendKeys().



To perform drag and drop, I have considered this website which solely deals with drag and drop, jqueryui.com.

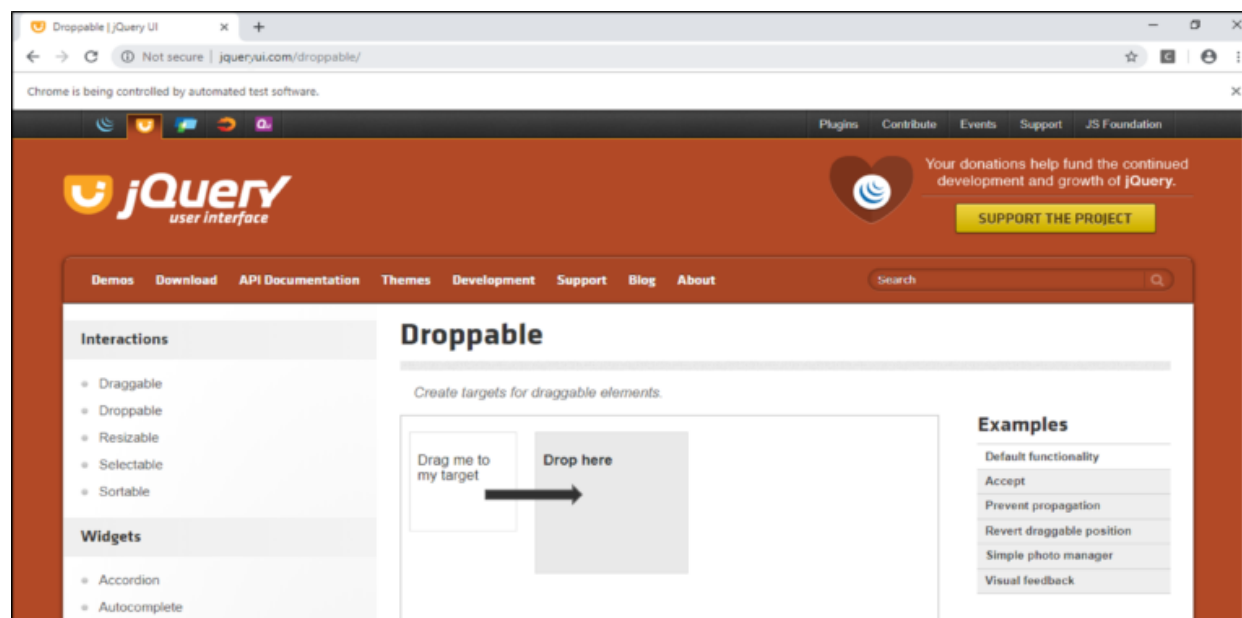
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```

5  import org.openqa.selenium.WebElement;
6  import org.openqa.selenium.chrome.ChromeDriver;
7  import org.openqa.selenium.interactions.Actions;
8
9  public class demo {
10
11  public static void main(String[] args) throws InterruptedException {
12  System.setProperty("webdriver.chrome.driver", "C:\\Users\\Vaishnavi\\Desktop\\chromedriver_win32 (2)\\chromedriver.exe");
13  WebDriver driver = new ChromeDriver();
14  driver.get("<a href='http://jqueryui.com/droppable/'>http://jqueryui.com/droppable/</a>");
15  driver.manage().window().maximize();
16  driver.switchTo().frame(0);
17  WebElement SourceElement= driver.findElement(By.id("draggable"));
18  WebElement TargetElement= driver.findElement(By.id("droppable"));
19  Actions action = new Actions(driver);
20  Thread.sleep(3000);
21  action.dragAndDrop(SourceElement, TargetElement).build().perform();
22  //action.clickAndHold(SourceElement).moveToElement(TargetElement).release().build().perform();
23  Thread.sleep(3000);
24  driver.quit();
25
26  }
27
28  }

```

The output for the above code is depicted below:



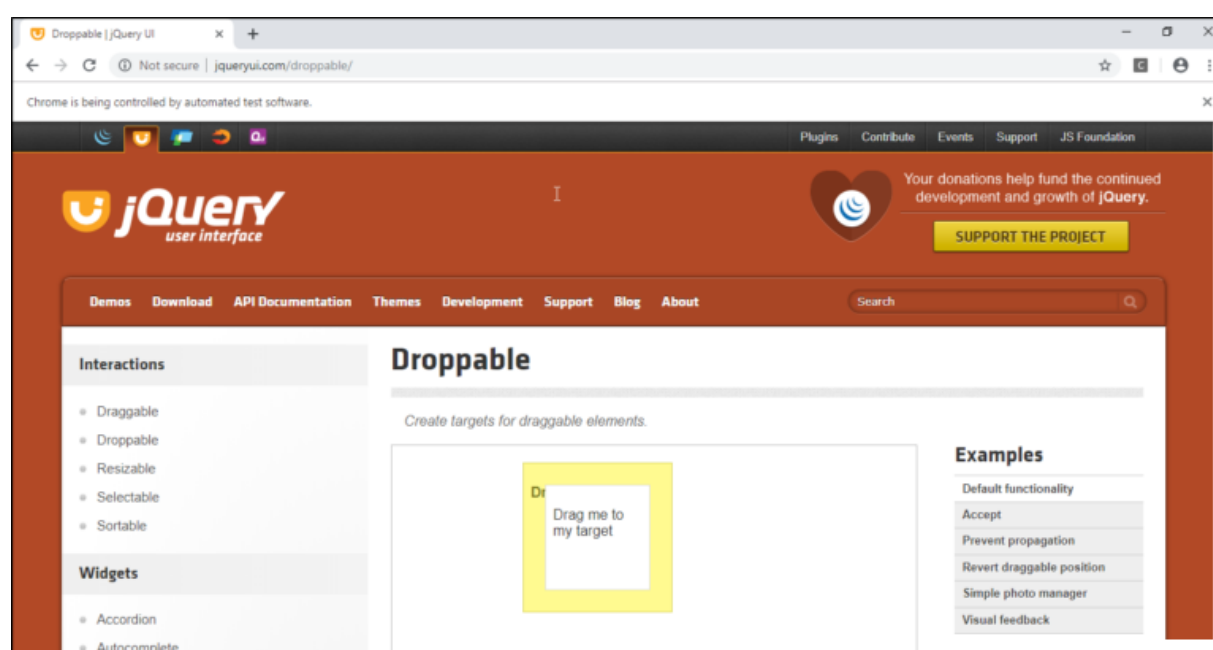
Drags the corresponding element to the target and drops it.



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network of more than 650,000 satisfied learners spread across the globe. This course is designed to introduce you to the complete Selenium features and its importance in testing software.

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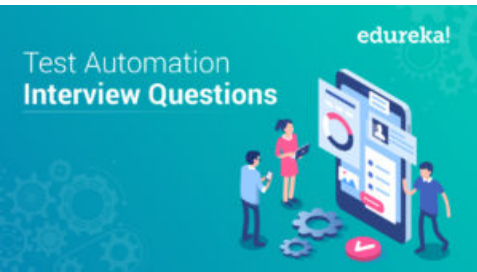


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