Combo Boxes

This is the next tutorial in selenium-java series. Please go through the previous tutorials before you start this one. In the last tutorial, we learned about explicit wait. In this tutorial we will learn about combo boxes!

What you will Learn:

1. Exercise - Explicit wait
2. Combo boxes

Exercise - Explicit wait

Before we study about combo boxes, let us do one more exercise on explicit wait. In "Tutorial_14_MouseHover_ActionsClass", we had studied mouse hover action wherein we had used hard wait of 2 seconds. Copy the code from the same script and paste it in the new class, see below. Recall that, in line#18, we are creating 'Actions' class, doing the mouse hover in line#19 at 'Clothing & Shoes' menu, waiting for 2 seconds for the sub-menu to appear, clicking the sub-menu 'Shirts' in line#22

```
1  import org.openqa.selenium.By;
2  import org.openqa.selenium.WebDriver;
3  import org.openqa.selenium.chrome.ChromeDriver;
4  import org.openqa.selenium.interactions.Actions;
5  import org.openqa.selenium.support.ui.ExpectedConditions;
6  import org.openqa.selenium.support.ui.WebDriverWait;
7
8  public class ExplicitWaitAmericanGolf {
9
10 public static void main(String[] args) throws InterruptedException {
11 System.setProperty("webdriver.chrome.driver", "C:\\Users\\DELL\\Desktop\\TRAINING\\Software\\chromedriver.exe");
12
13 WebDriver driver = null;
14
15 driver = new ChromeDriver();
16
17 driver.get("https://americangolf.co.uk");
18 Actions a = new Actions(driver);
19 a.moveToElement(driver.findElement(By.xpath("//a[@class='a-level-1'][contains(text(),'Clothing & Shoes')]"))).build().perform();
20 Thread.sleep(2000);
21
22 driver.findElement(By.xpath("//div[@id='CLOTHFOOTW_1']//span[@class='name'][contains(text(),'Shirts')]")).click();
```

Figure 1

When we run this script, the 'Shirts' page comes up, see below

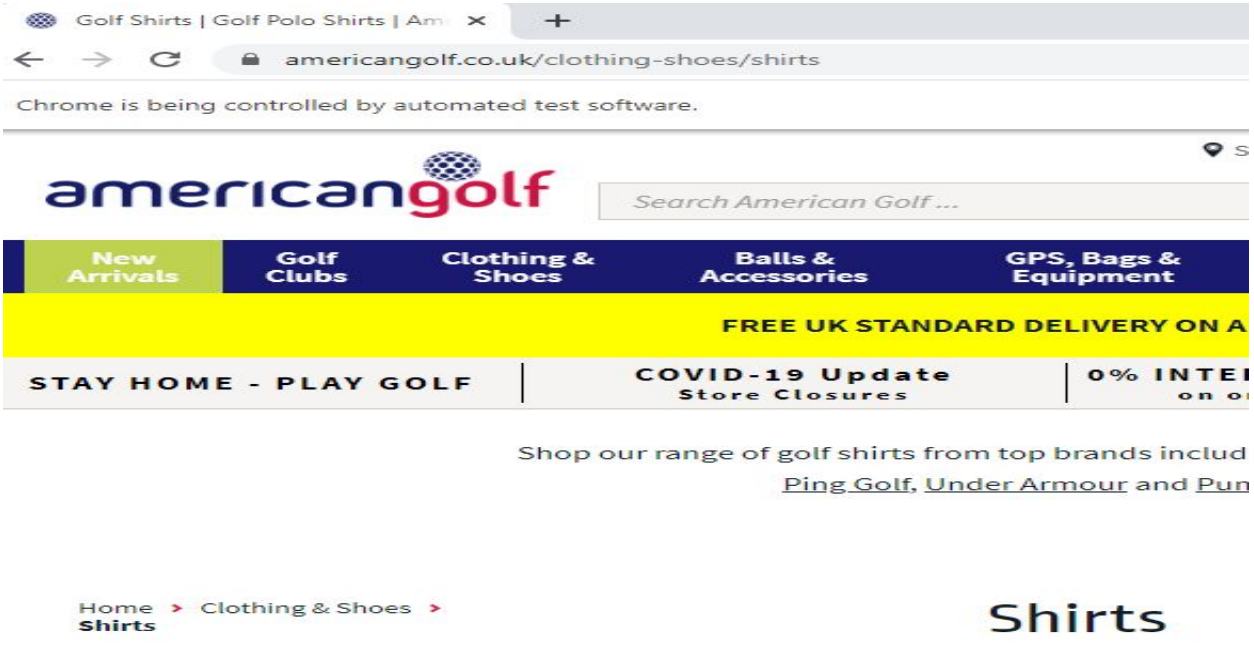

Figure 2

The change that we are going to do here is to replace hard wait with explicit wait. So, let us comment line#21 and add lines#22 and 23, see below. Selenium will now wait dynamically for 25 secs till the 'Shirts' element comes up. In line#23, 'visibilityOfElementLocated' method would help us wait for the visibility of element 'Shirts'

```
21 //Thread.sleep(2000);
22 WebDriverWait d = new WebDriverWait(driver,25);
23 d.until(ExpectedConditions.visibilityOfElementLocated(By.xpath("//div[@id='CLOTHFOOTW_1']//span[@class='name'][contains(text(),'Shirts')]")));
24
25 driver.findElement(By.xpath("//div[@id='CLOTHFOOTW_1']//span[@class='name'][contains(text(),'Shirts')]")).click();
```

Figure 3

When we run this script, the 'Shirts' page comes up, see below

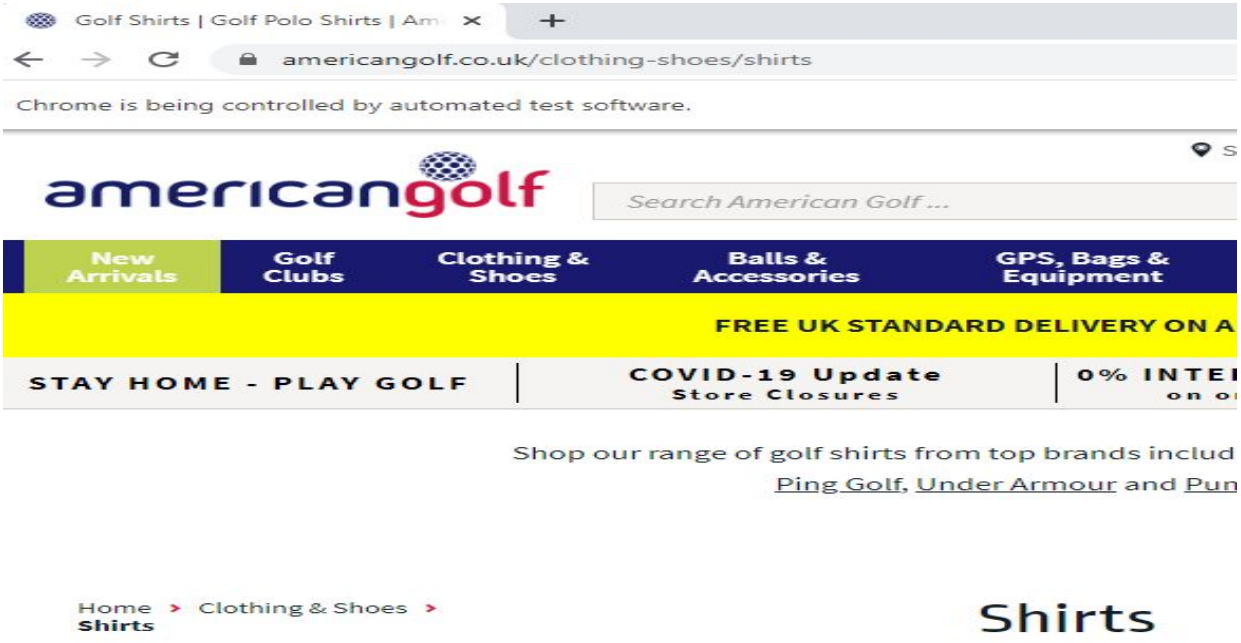

Figure 4

Combo boxes

Navigate to https://www.jobserve.com/in/en/Job-Search/

Notice the 'Industry' dropdown

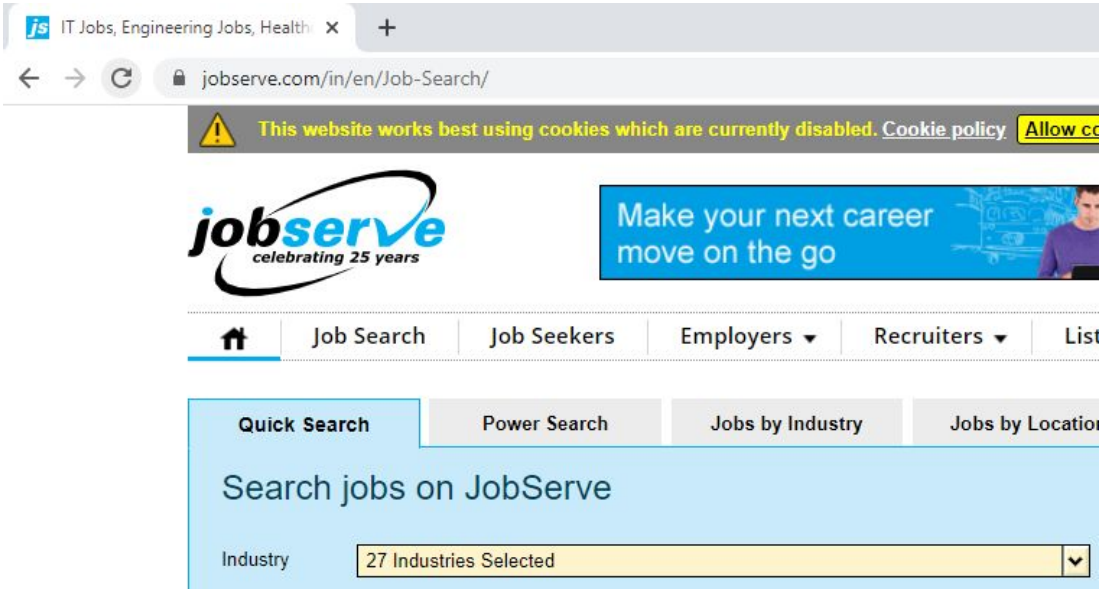

Figure 5

Click this dropdown, you are going to see lot of combo checkboxes, see below. These are the combo checkboxes that we are going to talk about now

Figure 6

By default if you see above, all the checkboxes are selected.

The use case which we would like to automate here is that - We would like to click the 'Industry' dropdown and de-select 'Select All Industries' combo box. Once we do that, notice that all the remaining boxes get de-selected automatically

Figure 7

Let us inspect ‘Industry’ dropdown

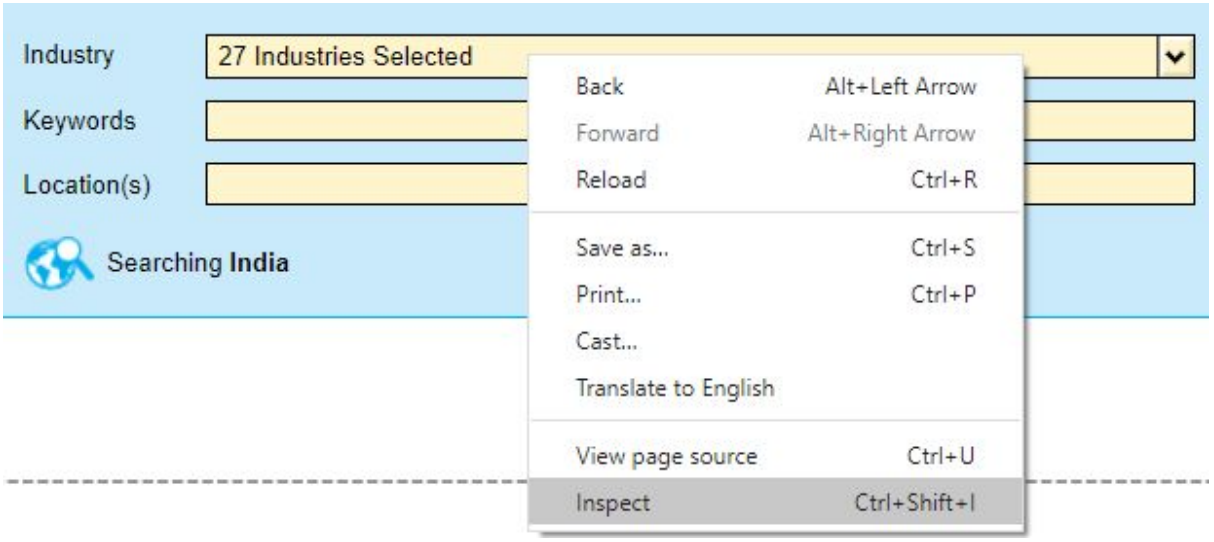

Figure 8

Thus custom xpath of Industry dropdown would be: **//span[contains(text(),'27 Industries Selected')]**

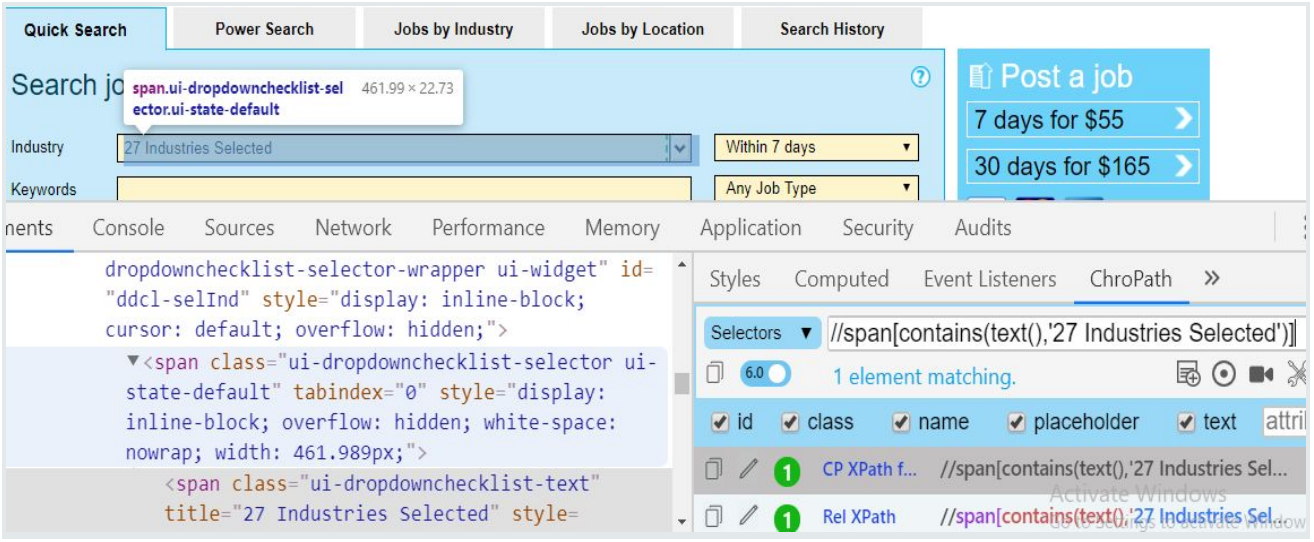

Figure 9

Let us now inspect checkbox ‘Select All Industries’

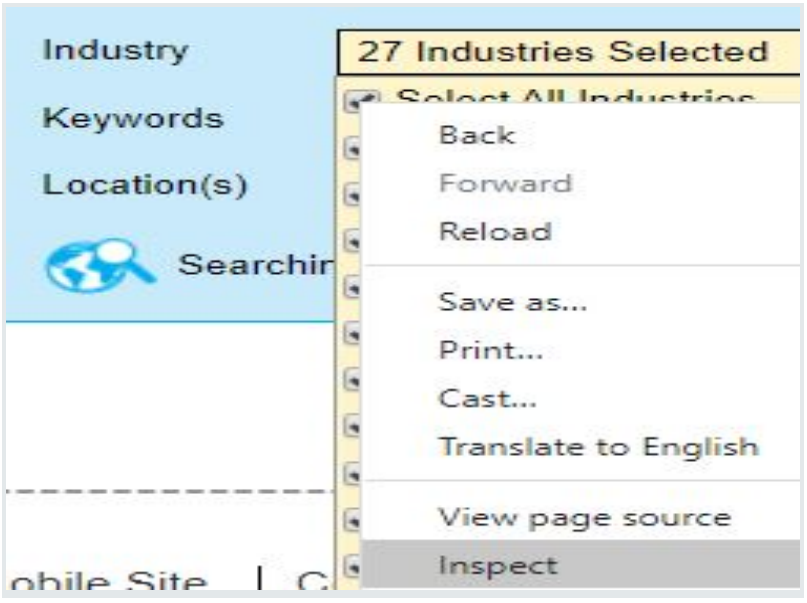

Figure 10

Xpath of ‘Select All industries’ checkbox: **//input[@id='ddcl-selInd-i0']**

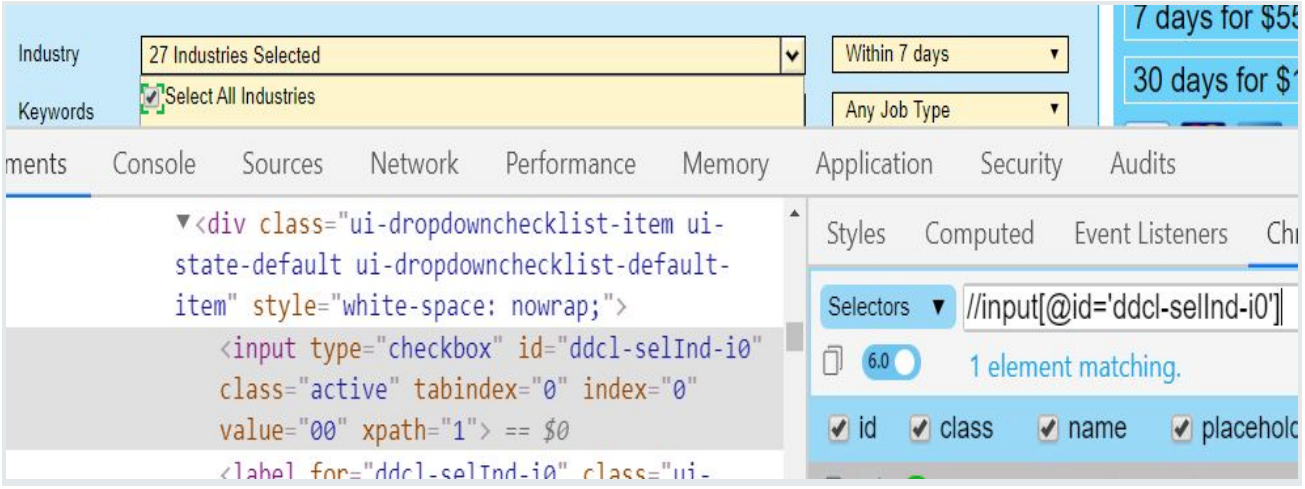

Figure 11

So we have

```
5  public class Jobserve {
6      public static void main(String[] args) {
7          System.setProperty("webdriver.chrome.driver", "C:\\Users\\DELL\\Desktop\\TRAINING\\Software\
8
9          WebDriver driver = null;
10
11         driver = new ChromeDriver();
12
13         driver.get("https://www.jobserve.com/in/en/Job-Search/");
14
15         driver.findElement(By.xpath("//span[contains(text(),'27 Industries Selected')]")).click();
16         driver.findElement(By.xpath("//input[@id='ddcl-selInd-i0']")).click();
17
```

Figure 12

Run the script, we see that the ‘Select All Industries’ checkbox gets de-selected

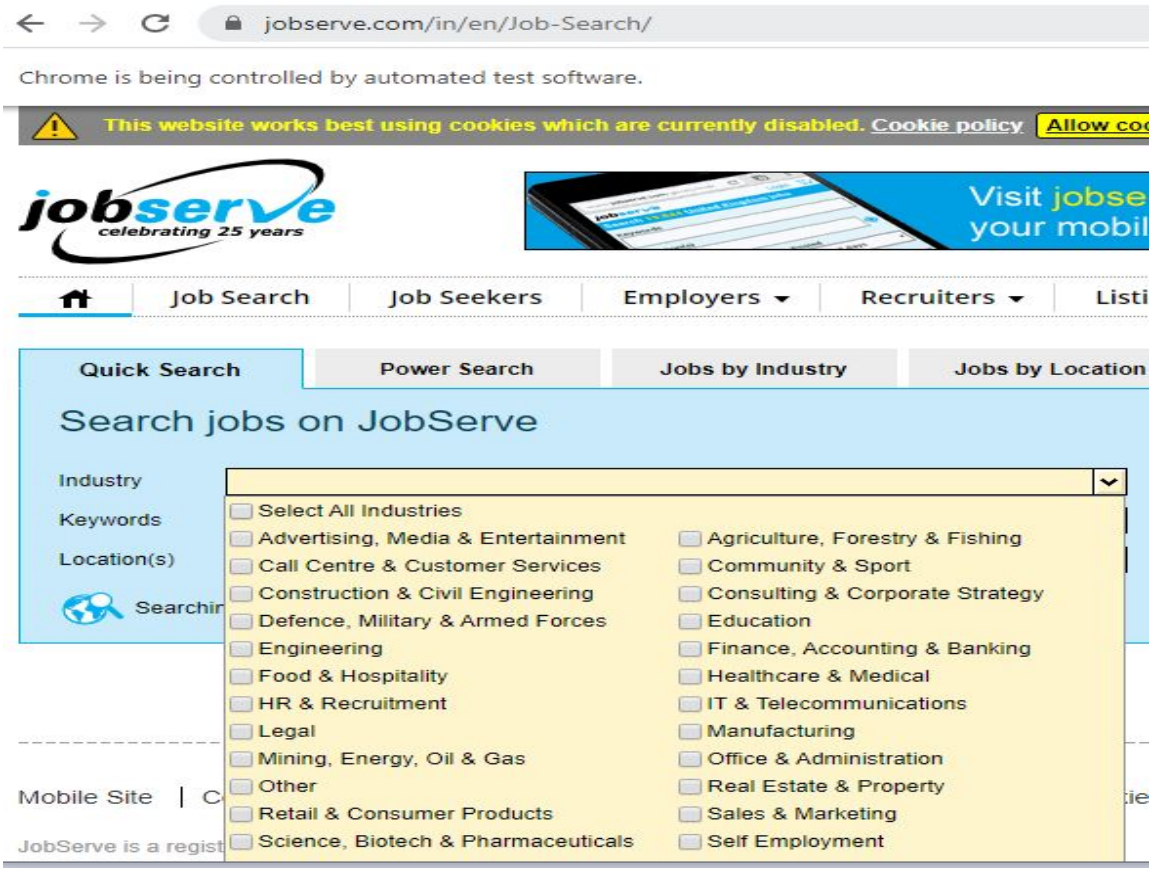

Figure 13

The next task is, we want to select only 'Education' checkbox

To do that, let's create a string variable and store 'Education' value in it

```
13          driver.get("https://www.jobserve.com/in/en/Job-Search/");
14
15          String industry = "Education";
16
17          driver.findElement(By.xpath("//span[contains(text(),'27 Industries Selected')]")).click();
18          driver.findElement(By.xpath("//input[@id='ddcl-selInd-i0']")).click();
```

Figure 14

The logic we would use would be that: we will extract all the industries from the dropdown and match them with the above string variable. If the extracted value matches with the value of string variable, than we click the checkbox against 'Education'.

To do that, first we will inspect xpath of few industries and see their common pattern.

Inspect 'Advertising, Media & Entertainment'

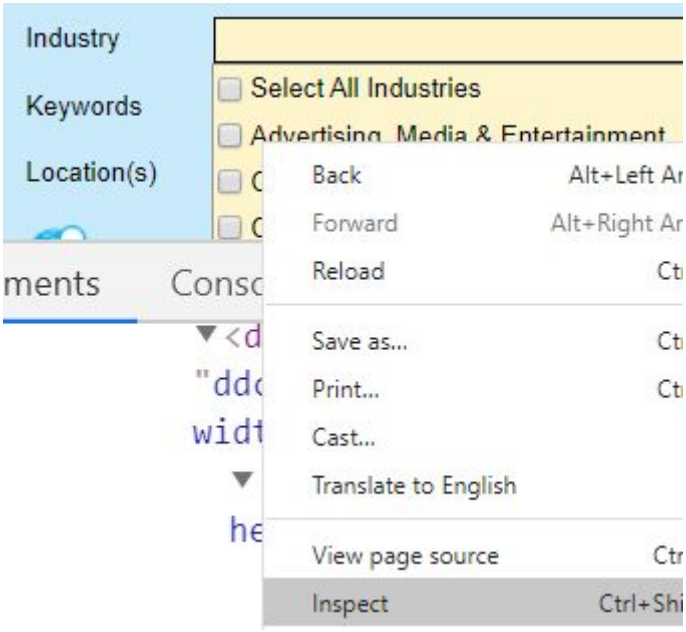

Figure 15

Notice that <label> tag gets highlighted

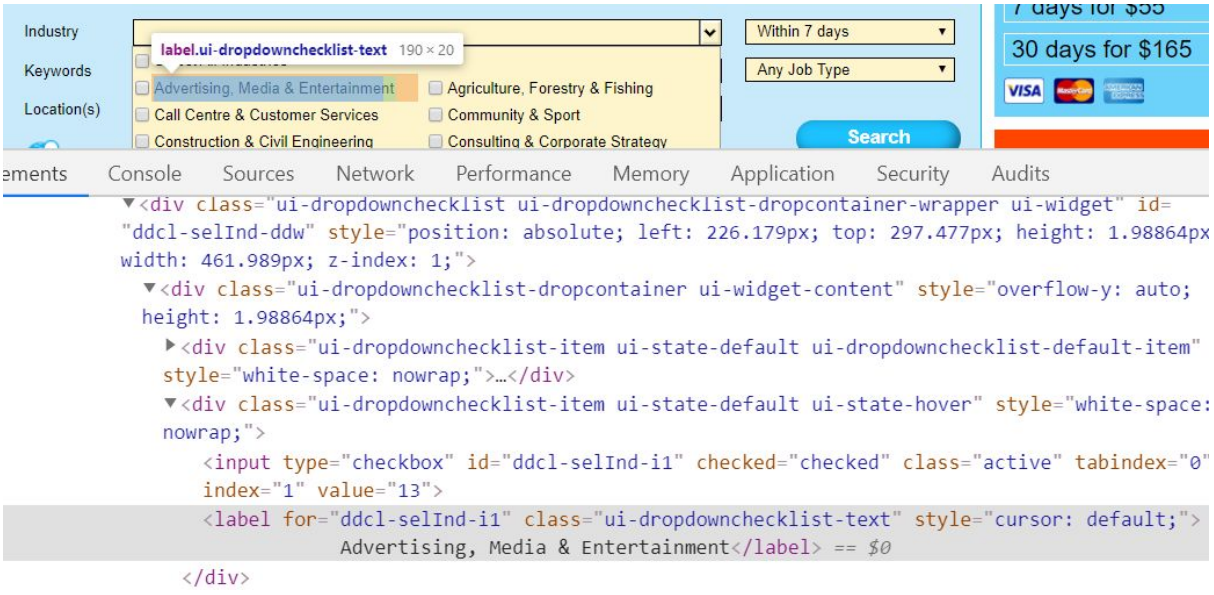

Figure 16

Let us traverse this label tag starting from it's topmost parent tag, see below

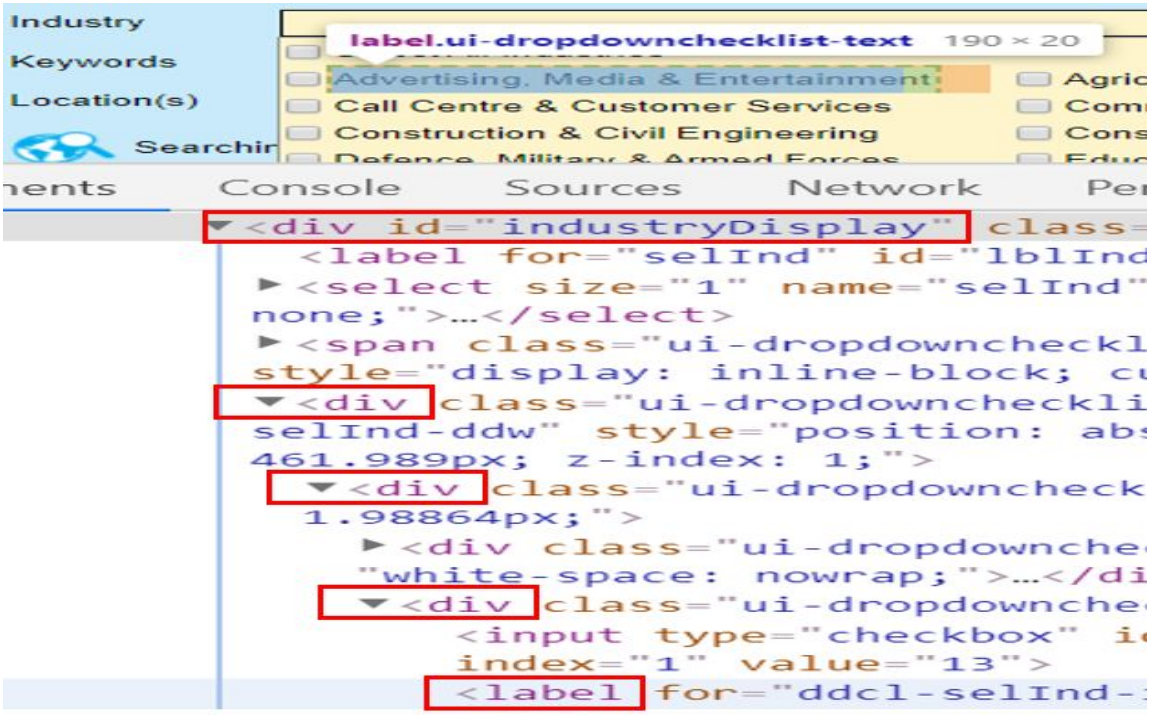

Figure 17

So basically, starting from <label> tag, we keep going above till we find a tag having id attribute. So we will create custom xpath starting from div tag having the id 'industryDisplay' TILL the <label> tag
//div[@id='industryDisplay']/div/div/div[2]/label

So above is the custom xpath of 'Advertising, Media & Entertainment'. If you paste this xpath in chropath & hit 'Enter', you would see '1 element matching' viz 'Advertising, Media & Entertainment'

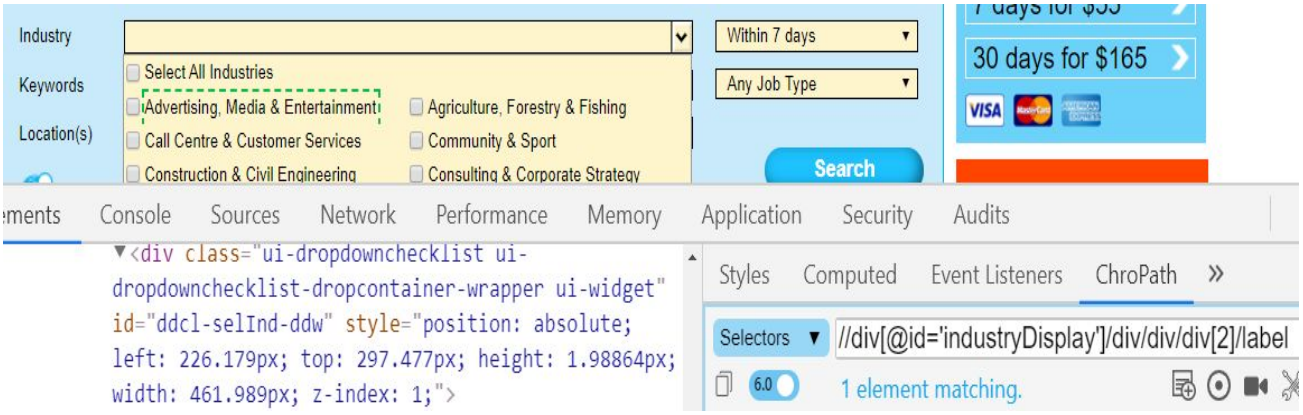

Figure 18

Now, let us change **div[2]** to **div[3]** and try to inspect
//div[@id='industryDisplay']/div/div/div[3]/label

Notice below, that 'Agriculture, Forestry & Fishing' gets highlighted

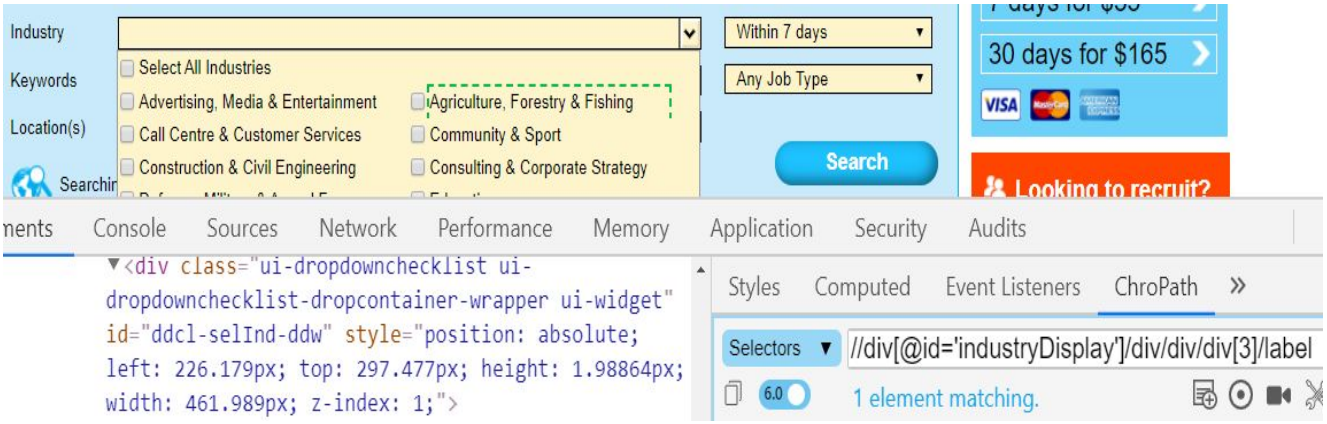

Figure 19

So, in the xpath, we see an incremental increase in the value of index for all the combo boxes. So the xpaths of other few industries can be:
//div[@id='industryDisplay']/div/div/div[3]/label
//div[@id='industryDisplay']/div/div/div[4]/label

So let's compare below xpaths. We notice that div[integer] is varying, rest is all same

//div[@id='industryDisplay']/div/div/div[**2**]/label
//div[@id='industryDisplay']/div/div/div[**3**]/label
//div[@id='industryDisplay']/div/div/div[**4**]/label

Let us remove the variable integer from the custom xpath, so we now have
//div[@id='industryDisplay']/div/div/div/label

Copy this xpath, paste it in chropath, you see that it highlights all the industries (28 elements matching)

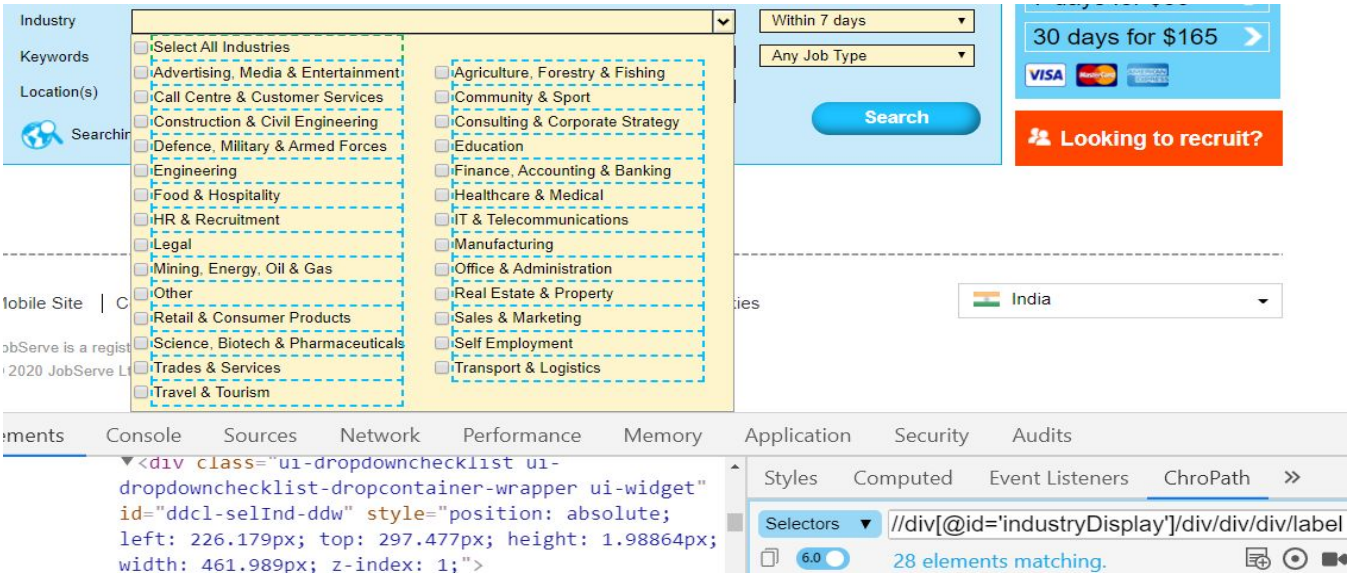

Figure 20

So we can make use of this xpath to extract all the industries. This gives us a list

```
18        String industry = "Education";
19
20        driver.findElement(By.xpath("//span[contains(text(),'27 Industries Selected')]")).click();
21        driver.findElement(By.xpath("//input[@id='ddcl-selInd-i0']")).click();
22
23        List<WebElement> allindustries = driver.findElements(By.xpath("//div[@id='industryDisplay']/div/div/div/label"));
```

Figure 21

Let us now print all the industries using the 'for' loop

```
23        List<WebElement> allindustries = driver.findElements(By.xpath("//div[@id='industryDisplay']/div/div/div/label"));
24
25        for(int i=0; i < allindustries.size(); i++)
26        {
27            System.out.println(allindustries.get(i).getText());
28        }
```

Figure 22

Run the script, notice that the name of all industries get printed in console

```
<terminated> Jobserve [Java Application] C:\Program File
Call Centre & Customer Services
Community & Sport
Construction & Civil Engineering
Consulting & Corporate Strategy
Defence, Military & Armed Forces
Education
Engineering
Finance, Accounting & Banking
Food & Hospitality
Healthcare & Medical
HR & Recruitment
IT & Telecommunications
Legal
Manufacturing
```

Figure 23

Now we can put our logic, see below

```
String industry = "Education";

driver.findElement(By.xpath("//span[contains(text(),'27 Industries Sel
driver.findElement(By.xpath("//input[@id='ddcl-selInd-i0']")).click();

List<WebElement> allindustries = driver.findElements(By.xpath("//div[@

for(int i=0; i < allindustries.size(); i++)
{
    //System.out.println(allindustries.get(i).getText());
    if(allindustries.get(i).getText().equalsIgnoreCase(industry))
    {
        allindustries.get(i).click();
    }
}
```

Figure 24

Run the script, we see 'Education' checkbox selected

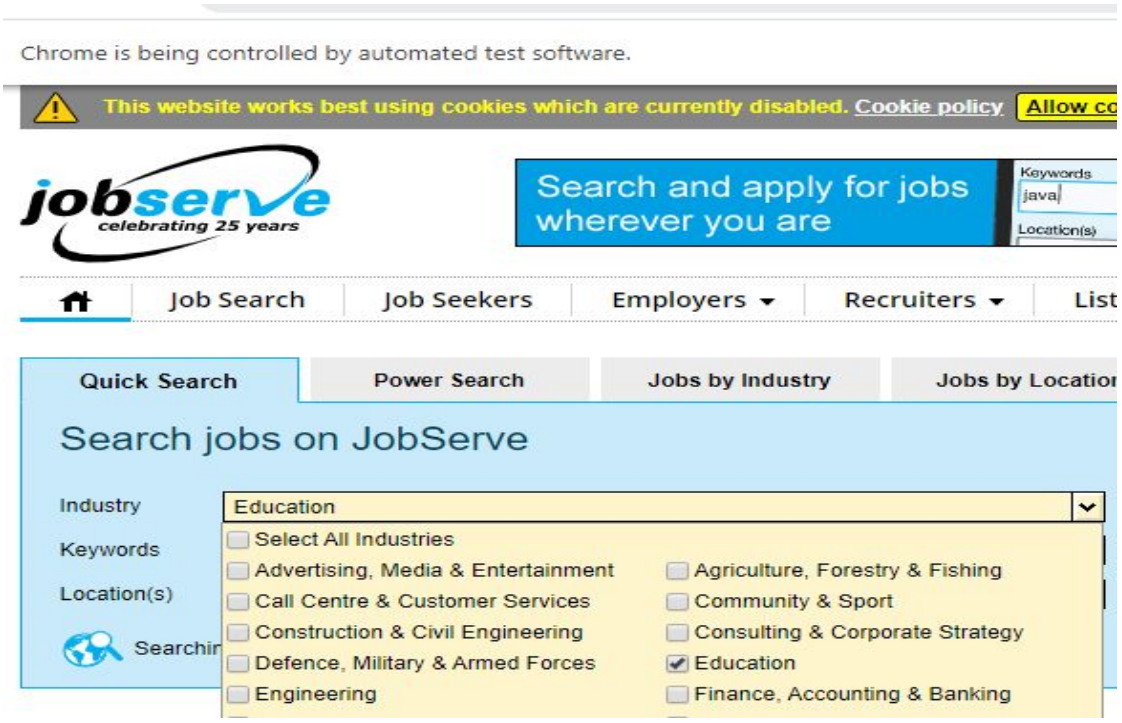

Figure 25

Below is entire source code

```java
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 Jobserve {
    public static void main(String[] args) {
        System.setProperty("webdriver.chrome.driver", "C:\\Users\\DELL\\Desktop\\TRAINING\\Software\\chromedriver.exe");
        WebDriver driver = null;
        driver = new ChromeDriver();
        driver.get("https://www.jobserve.com/in/en/Job-Search/");
        String industry = "Education";
        driver.findElement(By.xpath("//span[contains(text(),'27 Industries Selected')]")).click();
        driver.findElement(By.xpath("//input[@id='ddcl-selInd-i0']")).click();

        List<WebElement> allindustries = driver.findElements(By.xpath("//div[@id='industryDisplay']/div/div/div/label"));

        for(int i=0; i < allindustries.size(); i++)
        {
            //System.out.println(allindustries.get(i).getText());
            if(allindustries.get(i).getText().equalsIgnoreCase(industry))
            {
                allindustries.get(i).click();
            }
        }
```


Figure 26