

## Handle Frames

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 how to take screenshots. In this tutorial we will see how to handle frames!

### **What you will Learn:**

1. Frames

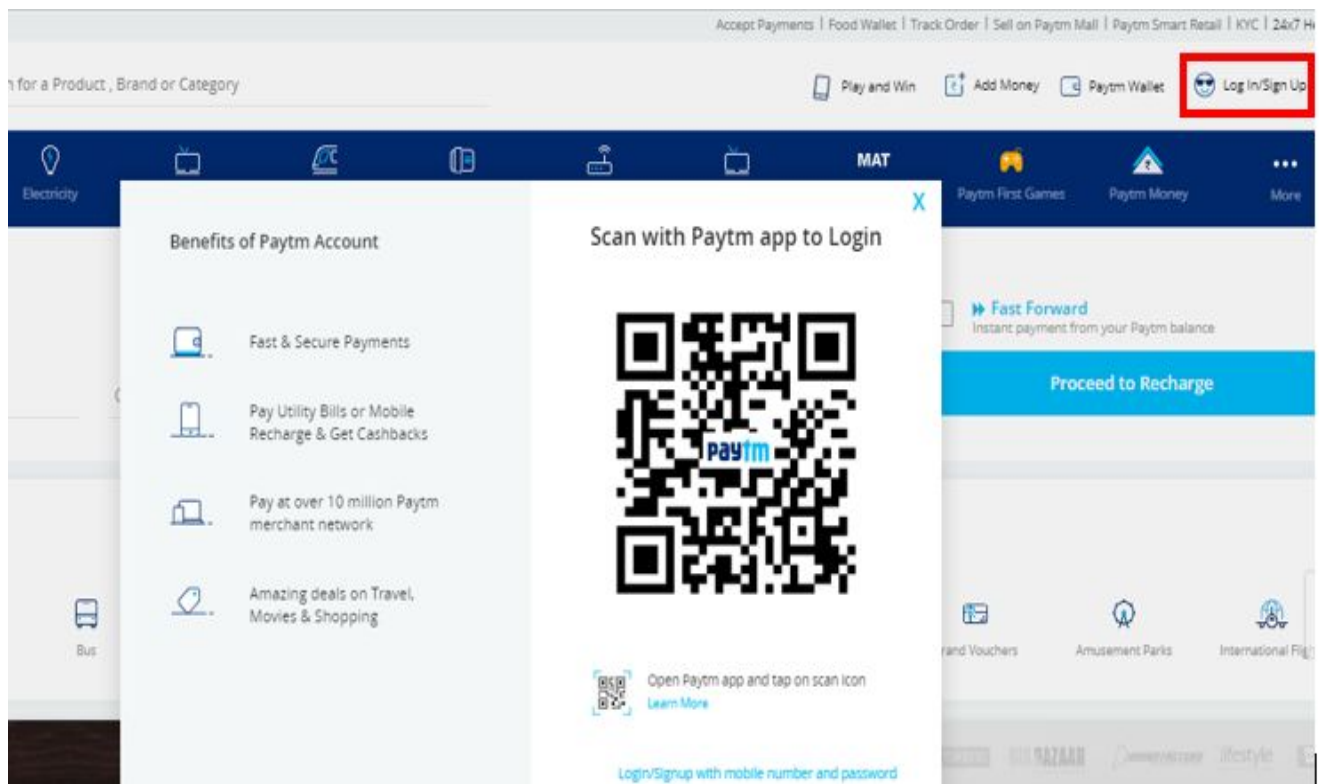
### Frames

A frame is a page embedded inside another page.

Each frame is a different page in itself.

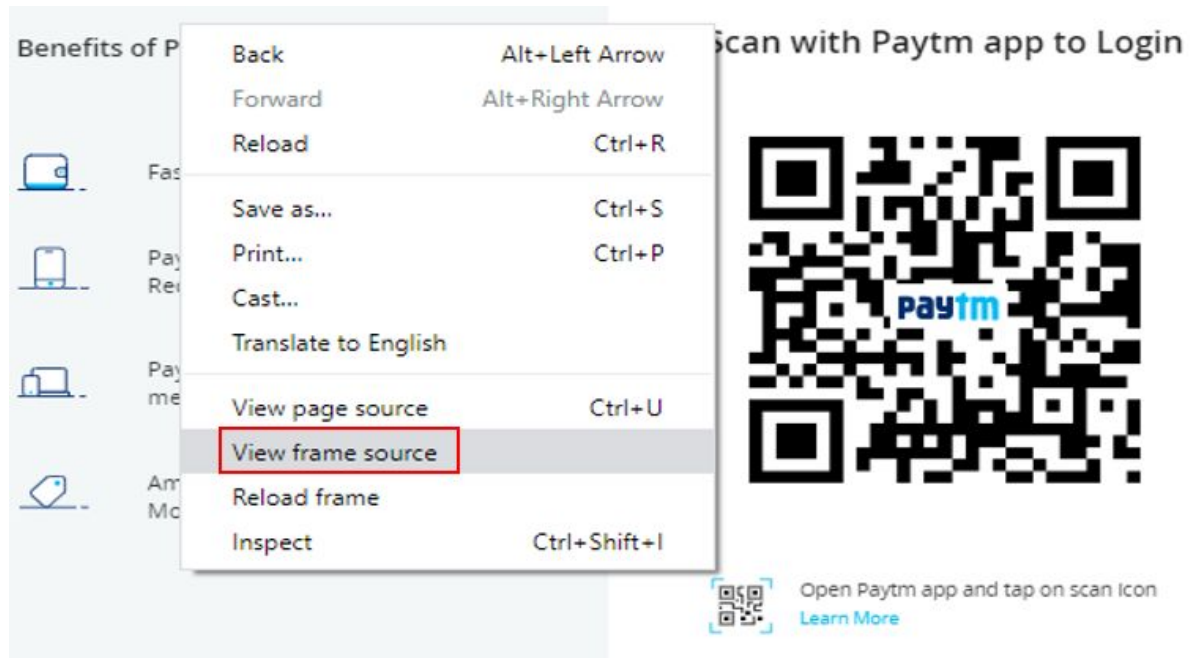
Go to <https://paytm.com/> & click Log In/Sign Up

A new, child window opens up. This is frame. Now how do you know that it is a frame?



**Figure 1**

When you right click on this window, you see 'View frame source'



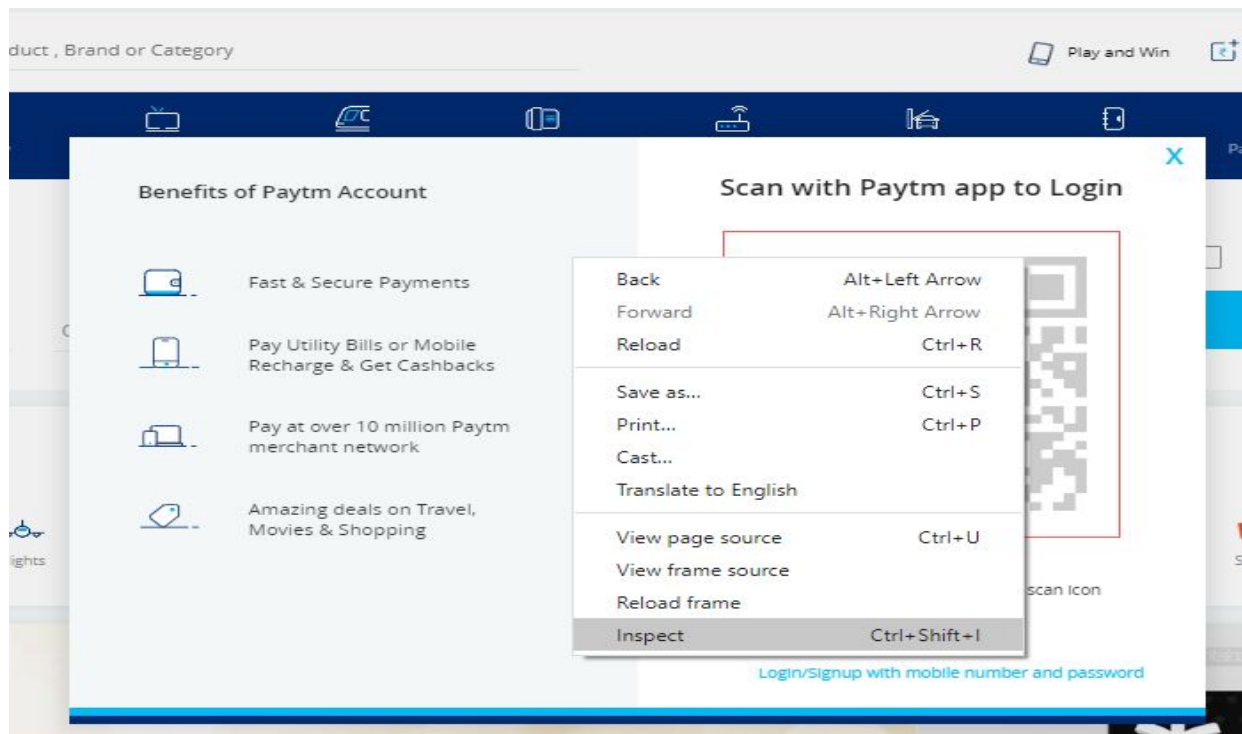
**Figure 2**

Click 'View frame source'. Frames are represented by 'iframe' tag. Search for the keyword 'iframe'. You would see some results.



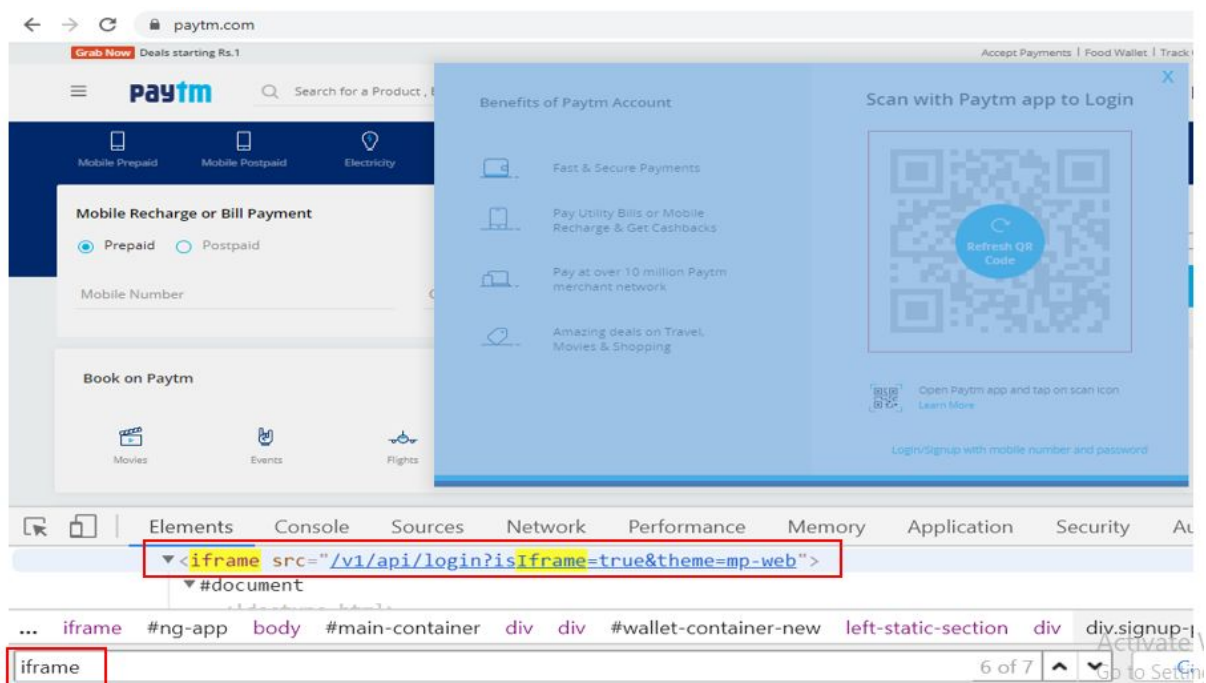
**Figure 3**

Right click on the frame window and click 'Inspect'



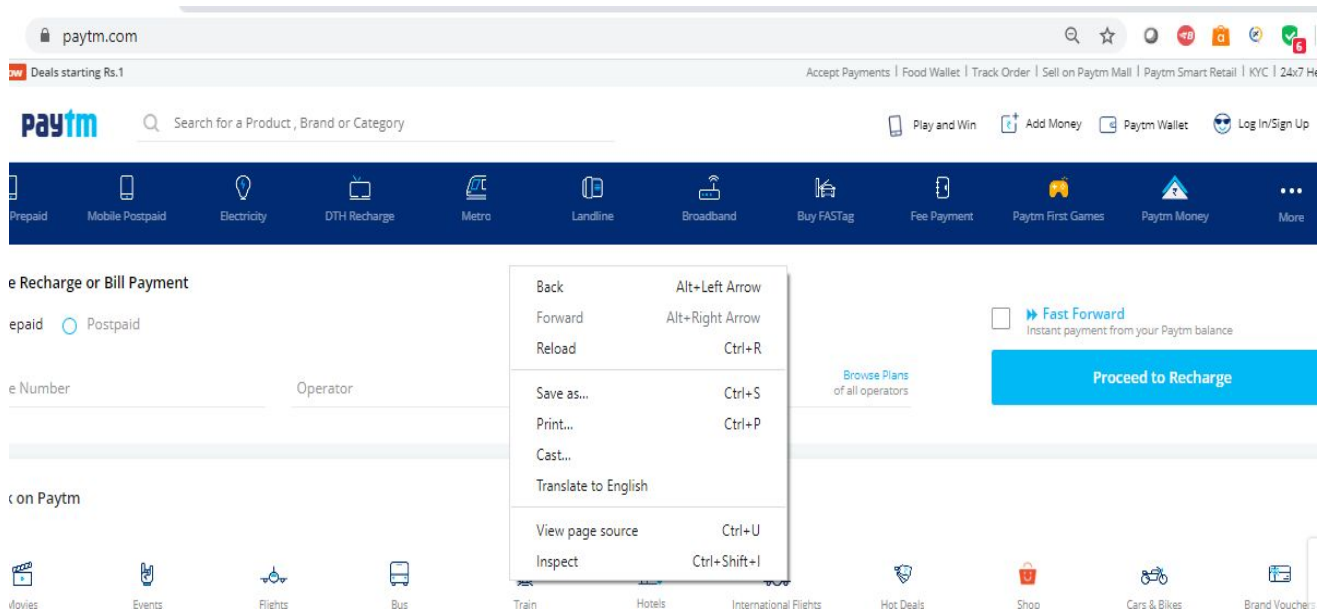
**Figure 4**

Search for 'iframe', hover the mouse over `<iframe src = "/v1/api/login?isIframe=true..."`, you will see that the frame gets highlighted.



**Figure 5**

Now close the frame window. Right click anywhere, see below figure. You will NOT see the option 'View frame source'. What this means is that, the main window is NOT a frame



**Figure 6**

Now the use case we would like to automate is: Click 'Log In/Sign Up' link



**Figure 7**

In the frame window that opens, click 'Login/Signup with mobile number and password' link

Scan with Paytm app to Login

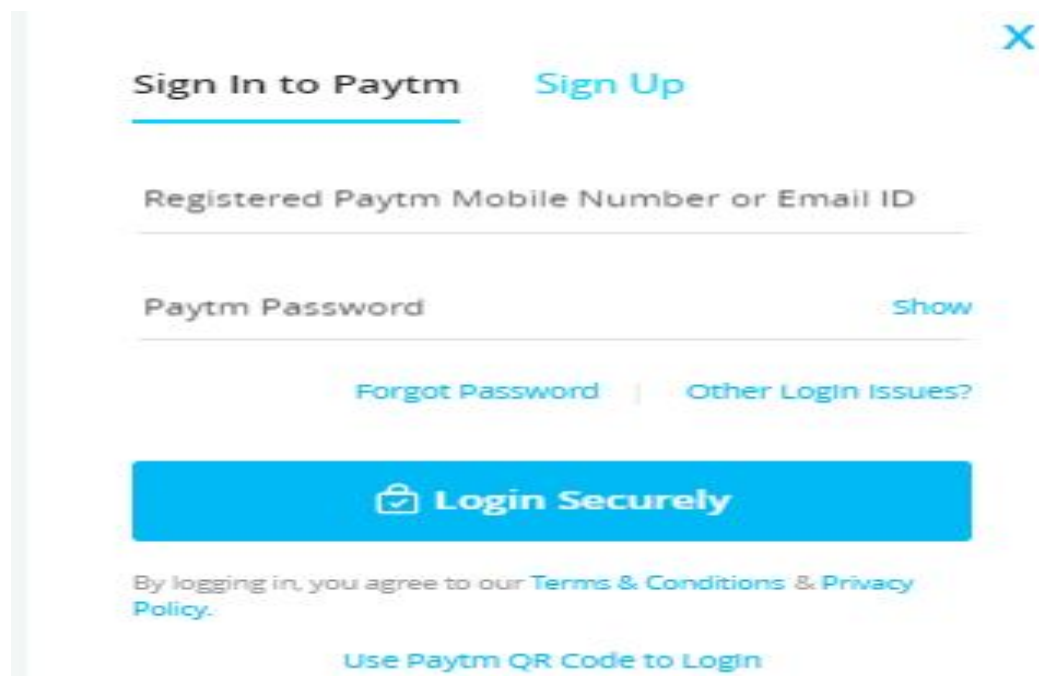


Open Paytm app and tap on scan icon  
[Learn More](#)

[Login/Signup with mobile number and password](#)

**Figure 8**

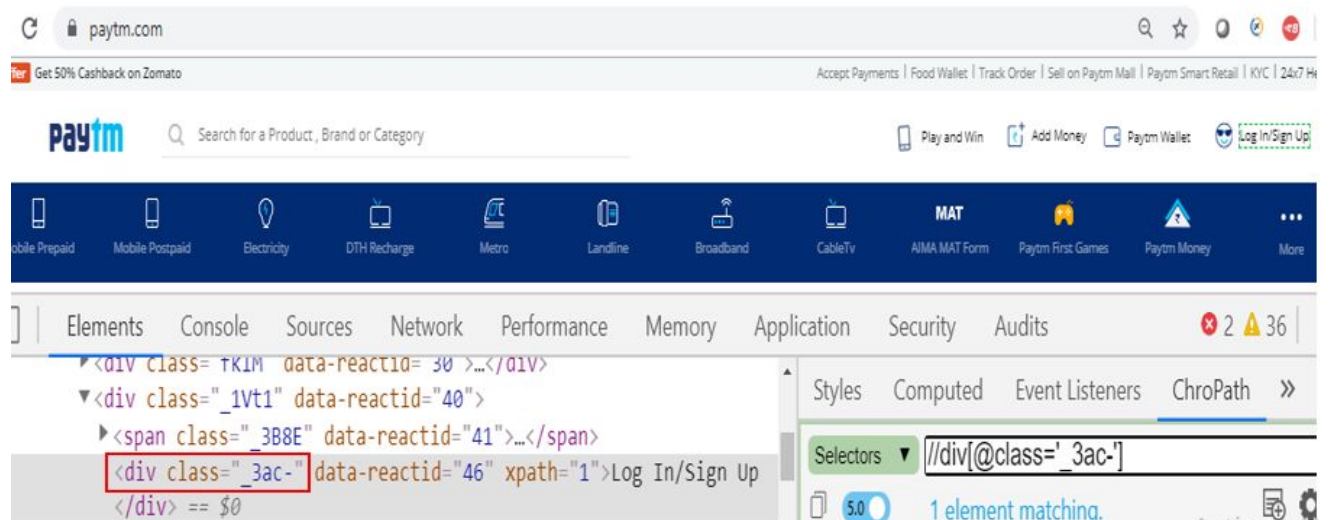
In the below window that comes up, enter some dummy text in the text field "Registered Paytm Mobile Number or Email ID"



**Figure 9**

So these are 3 steps that we need to automate.

Xpath of 'Log in/Sign Up' link is `//div[@class='_3ac-']`



**Figure 10**

Look at the script below. Line#17 will click the 'Log In/Sign Up' link and the frame window would open



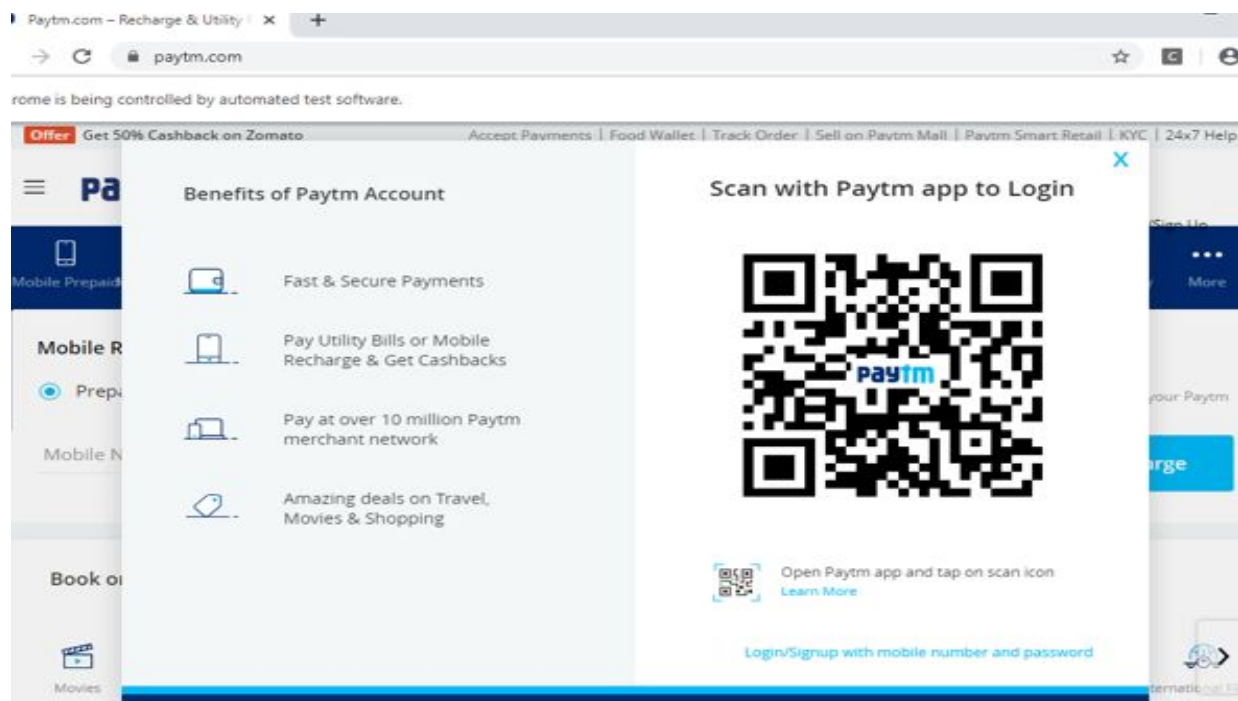
```

5 public class Frames {
6
7     public static void main(String[] args) throws InterruptedException {
8         System.setProperty("webdriver.chrome.driver", "C:\\\\Users\\DELL\\Des
9
10        WebDriver driver = null;
11
12        driver = new ChromeDriver();
13
14        driver.get("https://paytm.com/");
15
16        Thread.sleep(5000);
17        driver.findElement(By.xpath("//div[@class='_3ac-']")).click();
18    }

```

**Figure 11**

Run the script, notice that the frame opens



**Figure 12**

Once the frame window opens, we can count the number of frames by using driver.findElements method, see line#18

```

14        driver.get("https://paytm.com/");
15
16        Thread.sleep(5000);
17        driver.findElement(By.xpath("//div[@class='_3ac-']")).click();
18        System.out.println("Count of frames:--> " + driver.findElements(By.tagName("iframe")).size());

```

**Figure 13**

Run the script, the console prints the count of frames

```
<terminated> Frames [Java Application] C:\
Starting ChromeDriver 2
Only local connections
[1583847168.327][WARNIN
Mar 10, 2020 7:02:50 PM
INFO: Detected dialect:
Count of frames:--> 1
```

Figure 14

So we have 1 frame that we have to deal with. The index of first frame starts from 0. Once the frame window opens, we have to switch to that frame (line#20) to perform any operation.

```
14 driver.get("https://paytm.com/");
15
16 Thread.sleep(5000);
17 driver.findElement(By.xpath("//div[@class='_3ac-']")).click();
18 System.out.println("Count of frames:--> " + driver.findElements(
19
20 driver.switchTo().frame(0);
```

Figure 15

After switching to the frame, we can click the link seen at the bottom of the frame 'Login/Signup with mobile number and password'.

Let us inspect this link and create custom xpath of this link. This link has a span tag and is present under the `//div[@class='qrcode-footer-text']`. So the custom xpath of this link would be `//div[@class='qrcode-footer-text']/span`

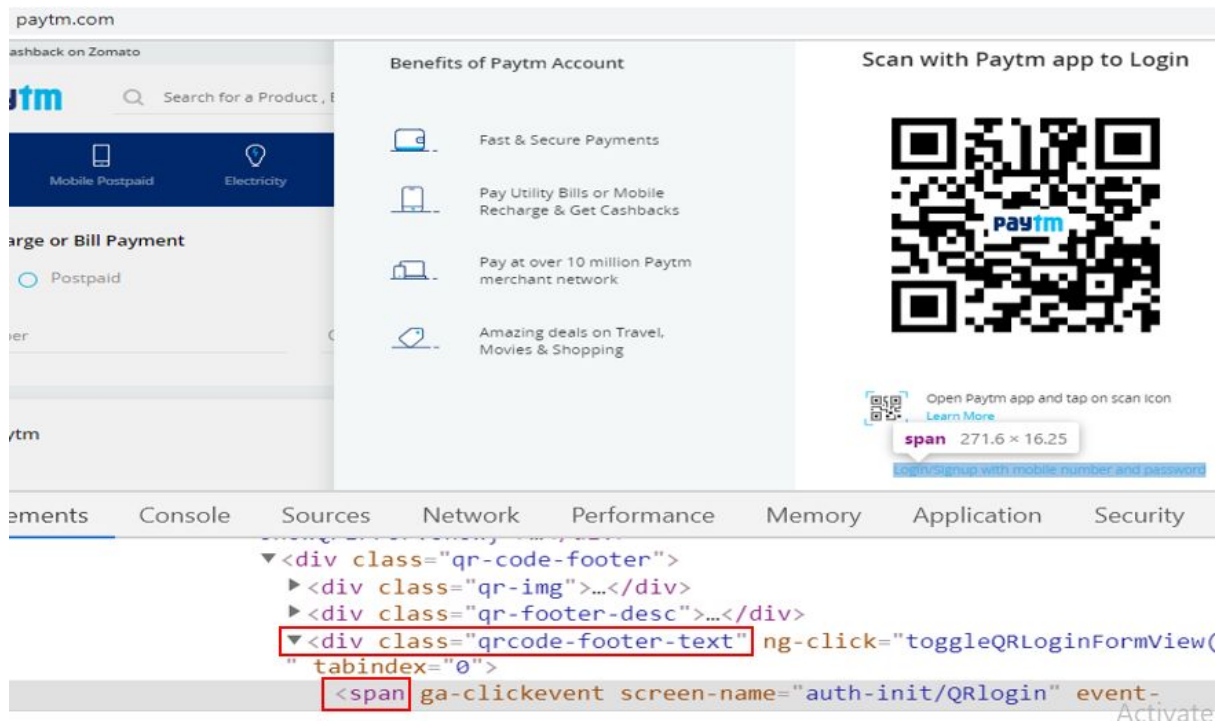


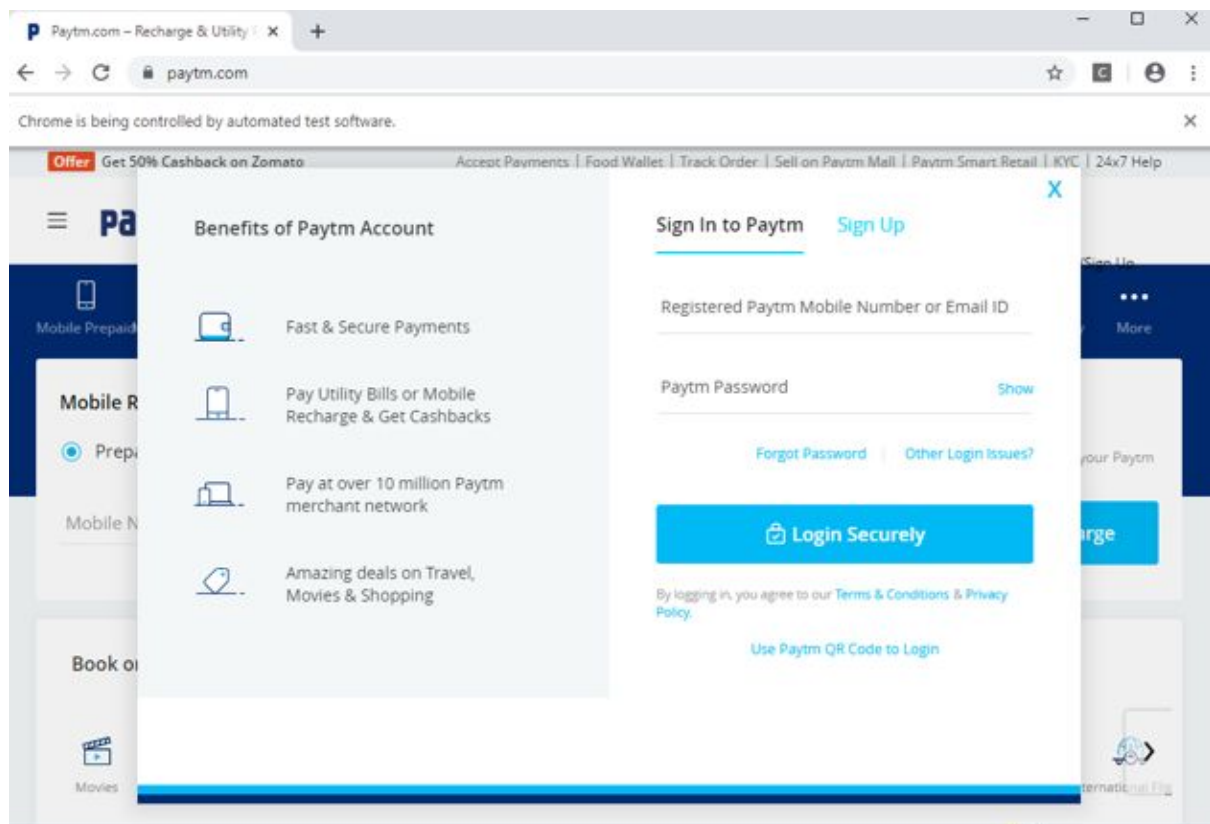
Figure 16

So we write line#22 below

```
14 driver.get("https://paytm.com/");
15
16 Thread.sleep(5000);
17 driver.findElement(By.xpath("//div[@class='_3ac-']")).click();
18 //System.out.println("Count of frames--> " + driver.findElements(By.tagName("iframe")));
19
20 driver.switchTo().frame(0);
21
22 driver.findElement(By.xpath("//div[@class='qrcode-footer-text']/span")).click();
```

**Figure 17**

Run this, we see that the link on the frame gets clicked & sign-in page comes



**Figure 18**

Now we can write something to the email id field. Let us inspect this field:

```
//input[@name='username']
```



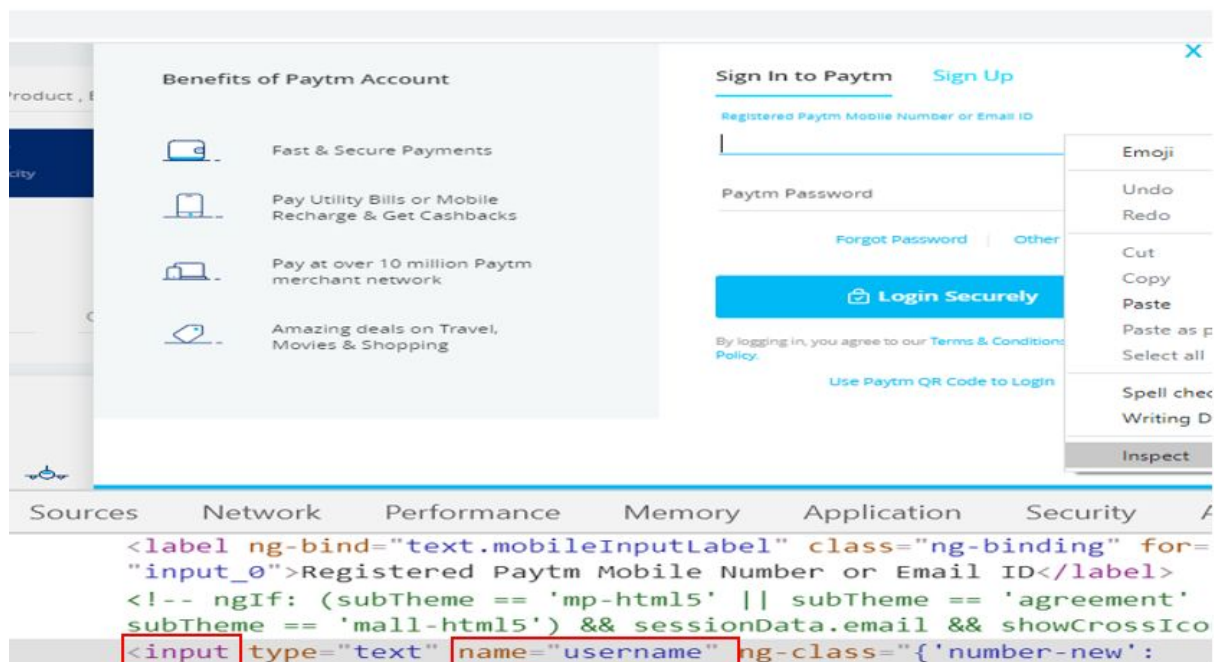


Figure 19

So we write line#23

```

17 driver.findElement(By.xpath("//div[@class='_3ac-']")).click();
18 //System.out.println("Count of frames:--> " + driver.findElements(By.tagName("ifr
19
20 driver.switchTo().frame(0);
21
22 driver.findElement(By.xpath("//div[@class='qrcode-footer-text']/span")).click();
23 driver.findElement(By.xpath("//input[@name='username']")).sendKeys("abcdef");

```

Figure 20

Run the script, notice that the text “abcdef” gets typed in the email field. This is how we handle frames.

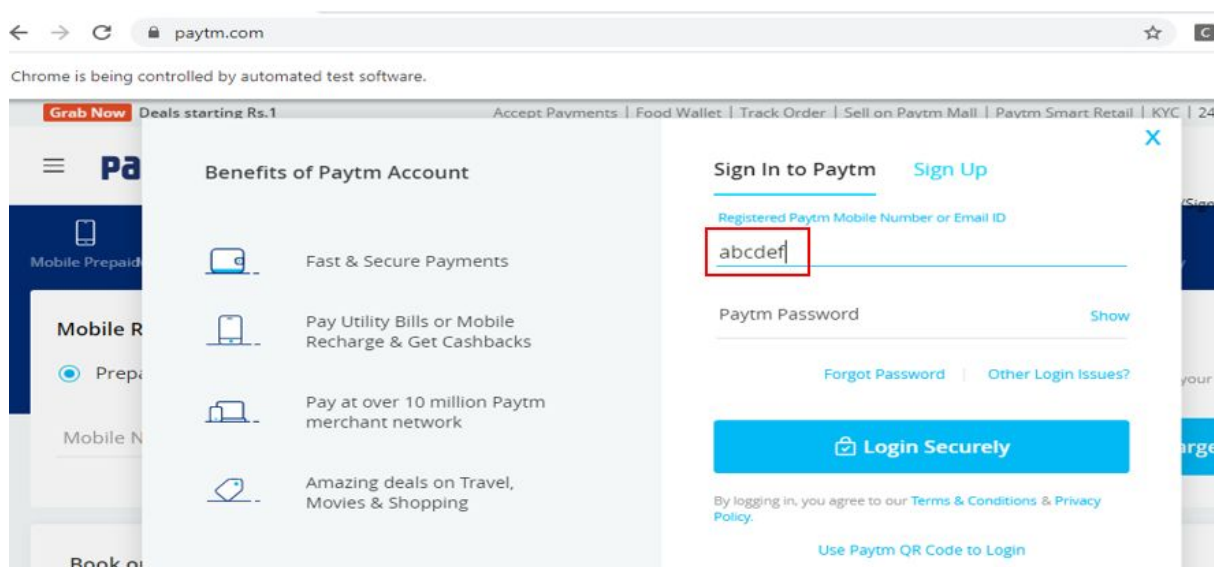


Figure 21

Let us see what happens if we don't switch the frame and try to perform an action on the frame. So let us comment line#20

```
14 driver.get("https://paytm.com/");
15
16 Thread.sleep(5000);
17 driver.findElement(By.xpath("//div[@class='_3ac-']")).click();
18 //System.out.println("Count of frames:--> " + driver.findElements(By.tagName("ifr
19
20 //driver.switchTo().frame(0);
21
22 driver.findElement(By.xpath("//div[@class='qrcode-footer-text']/span")).click();
23 driver.findElement(By.xpath("//input[@name='username']")).sendKeys("abcdef");
```

**Figure 22**

Run the script, notice that we get an error at line#22

```
<terminated> Frames [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (10-Mar-2020, 7:24:25 PM)
at java.lang.reflect.Constructor.newInstance(Unknown Source)
at org.openqa.selenium.remote.ErrorHandler.createThrowable(ErrorHandler.java:214)
at org.openqa.selenium.remote.ErrorHandler.throwIfResponseFailed(ErrorHandler.java:154)
at org.openqa.selenium.remote.http.JsonHttpStatusCode.reconstructValue(JsonHttpRe
at org.openqa.selenium.remote.http.AbstractHttpStatusCode.decode(AbstractHttpRes
at org.openqa.selenium.remote.http.AbstractHttpStatusCode.decode(AbstractHttpRes
at org.openqa.selenium.remote.HttpCommandExecutor.execute(HttpCommandExecutor.java:1
at org.openqa.selenium.remote.service.DriverCommandExecutor.execute(DriverCommandExe
at org.openqa.selenium.remote.RemoteWebDriver.execute(RemoteWebDriver.java:552)
at org.openqa.selenium.remote.RemoteWebDriver.findElement(RemoteWebDriver.java:323)
at org.openqa.selenium.remote.RemoteWebDriver.findElementByXPath(RemoteWebDriver.jav
at org.openqa.selenium.By$ByXPath.findElement(By.java:353)
at org.openqa.selenium.remote.RemoteWebDriver.findElement(RemoteWebDriver.java:315)
at Frames.main(Frames.java:22)

18 //System.out.println("Count of frames:--> " + driver.findElements(By.tagName("ifr
19
20 //driver.switchTo().frame(0);
21
22 driver.findElement(By.xpath("//div[@class='qrcode-footer-text']/span")).click();
23 driver.findElement(By.xpath("//input[@name='username']")).sendKeys("abcdef");
```

**Figure 23**

So we get 'NoSuchElementException' on line#22

```
<terminated> Frames [Java Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (10-Mar-2020, 7:24:25 PM)
:ca0862f674758c9a3933e685c27d5) on port 27568

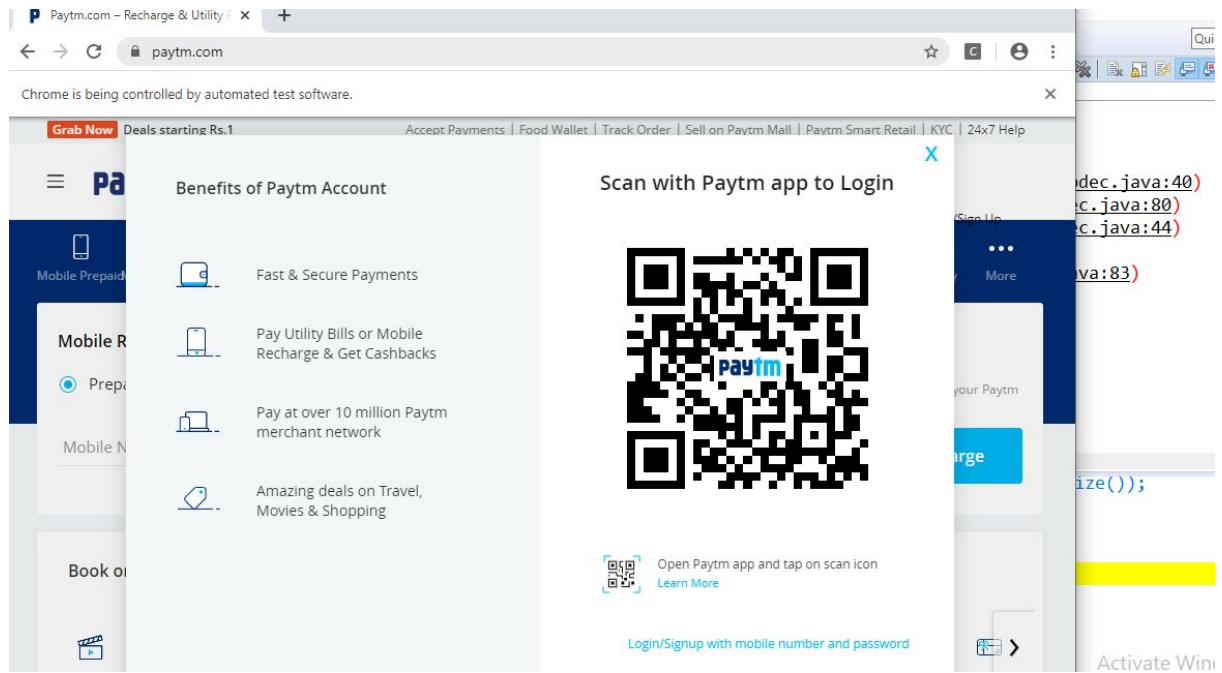
ng to Chrome, retrying...
Remote.ProtocolHandshake createSession

Exception in thread "main" java.lang.NoSuchElementException: no such element: Unable to locate element: {"method":"xpath","selector":"//div[@class='qrcode-footer
>2dca23cca0862f674758c9a3933e685c27d5),platform=Windows NT 10.0.18362 x86_64) (WARNING: The server did not provide any stacktr
: https://www.seleniumhq.org/exceptions/no_such_element.html
32be7d358', time: '2018-11-14T08:25:48'
2.168.43.95', os.name: 'Windows 10', os.arch: 'amd64', os.version: '10.0', java.version: '1.8.0_191'
Driver
ptSslCerts: false, applicationCacheEnabled: false, browserConnectionEnabled: false, browserName: chrome, chrome: {chromedrive

18 //System.out.println("Count of frames:--> " + driver.findElements(By.tagName("iframe")).size());
19
20 //driver.switchTo().frame(0);
21
22 driver.findElement(By.xpath("//div[@class='qrcode-footer-text']/span")).click();
```

**Figure 24**

Also notice below that the link 'Login/Signup with mobile number and password' does NOT get clicked



**Figure 25**

So this is how we tackle frames. Thank you for reading!