Finding Broken Links Using Selenium WebDriver

As we know that for any website Broken links are bad in terms of business function, because it cause you to lose clients and customer, and Due to existence of website Broken links, our Website reputation may damaged, and there will be negative impact in our business.

Suppose we have Multiple sites and all these Sites contains approax 2000 links , then it is very difficult to Test a website with all links, So we use selenium to make it easy to test a website. Although we have many tools in a market, But in Automation Terms selenium is Best tools to find out Broken links of any Website.

Before I explain how we can find Broken links in selenium, Let's see some of the HTTP status codes:

200 – valid Link

404 – Link Not Found

400 – Bad Request

401 – Unauthorized

500 – Internal error

Steps to Follow…

1.) **Navigate** to the interested webpage for e.g. www.EasyCalculation.com

2.) **Collect** all the links from the webpage. All the links are associated with the **Tag** '**a**'.

3.) **Create** a **list** of type **WebElement** to store all the **Link elements** in to it.

4.) Now **Create** a Connection using URL object(i.e ., link)

5.) **Connect** using Connect Method.

6.) Use **getResponseCode ()** to get response code.

7.) **Through exception** if any error occurred.

Consider a below Test case to test all links of home page of www.EasyCalculation.com

```java
package brokenLinksDemo;

import java.net.HttpURLConnection;
import java.net.URL;
import java.util.List;
import java.util.concurrent.TimeUnit;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
import org.testng.annotations.Test;

public class FindingLinkTest {
	@Test
	public void main() throws InterruptedException {
		System.setProperty("webdriver.chrome.driver",
				"D:\\Selenium\\Selenium Browsers Jars\\Chrome 84\\chromedriver.exe");
		WebDriver driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.manage().timeouts().implicitlyWait(10, TimeUnit.SECONDS);

		driver.get("https://www.easycalculation.com/");
		Thread.sleep(5000);

		List<WebElement> links = driver.findElements(By.tagName("a"));

		System.out.println("Total links are " + links.size());

		for (int i = 0; i < links.size(); i++) {

			WebElement ele = links.get(i);

			String url = ele.getAttribute("href");

			verifyLinkActive(url);

		}
	}

	public static void verifyLinkActive(String linkUrl) {
		try {
			URL url = new URL(linkUrl);

			HttpURLConnection httpURLConnect = (HttpURLConnection) url.openConnection();

			httpURLConnect.setConnectTimeout(3000);

			httpURLConnect.connect();

			if (httpURLConnect.getResponseCode() == 200) {
				System.out.println(linkUrl + " - " +
httpURLConnect.getResponseMessage());
			}
			if (httpURLConnect.getResponseCode() == HttpURLConnection.HTTP_NOT_FOUND) {
				System.out.println(linkUrl + " - " + httpURLConnect.getResponseMessage()
+ " - "
						+ HttpURLConnection.HTTP_NOT_FOUND);
			}
		} catch (Exception e) {

		}
	}
}
```