

## **Variation among Broken Links on Various Websites**

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### **ABSTRACT**

*With the development of site content it is turned out to be hard to oversee relations between Individual site page and monitor their hyperlinks inside a site. This causes some Hyperlink turn out to be dead or broken. A broken Link is a connection on a site page that no longer works. It is hard to discover the broken connection physically by checking every hyperlink separately in light of the fact that it is tedious and dreary work. So to dispense with this we can utilize the selenium webdriver instrument and java code to automate testing of every hyperlink independently. The goal of this thesis is to compare finding of broken links utilizing selenium web driver instrument.*

**Keywords:** *automate, broken, discover,hyperlink , webdriver*

### **I. INTRODUCTION**

Selenium web driver is an tool for automation of sites. Selenium is an open source Automation testing apparatus for electronic applications. It runs specifically on program and backings every single accessible program, for example, Firefox, chrome, IE, Opera, Safari and so on it gives an easy to understand API which we can comprehend and investigate effectively, accordingly it will read and keep up your content simpler. It has classes in Web driver which help us to reproduce key press occasions of keyboard. It enables us to recreate the clicking of program front and back catch. Selenium offers an easy to use interface that makes and execute tests effortlessly and successfully. Its Open-Source highlights help clients to content their own particular expansions that makes them simple to create redid activities and even control at a progressed level. Tests run specifically crosswise over programs and the clients can watch while the tests are being executed. Also, Selenium's announcing abilities are one reason for picking it, as it enables analysers to separate the outcomes and take follow-up activities. Selenium does not confine Quality confirmation decision of revealing apparatuses, construct frameworks or some other part of their testing system. It coordinates well with prominent devices, for example, Hudson, Sauce Labs, Selenium-Grid, QMetry and others. Selenium utilizes less Hardware assets.

### **II. LITERATURE REVIEW**

Harpreet Kaur, Dr.Gagan Gupta[1]: This paper presents one can select a testing tool based on the type of application need to be tested, budget, and the efficiency required. If your test automation requirements are getting fulfilled with Test Complete, there is no need to go for QTP at a higher cost. Both these tools solve the same purpose, it is just that QTP is a versatile tool for a critical and more risky Application Under Test (AUT).Selenium can also be used if you don't want to spend on testing tool. In conclusion, QTP is the best tool among the three.

Jagannatha , Niranjanamurthy , Manushree , Chaitra[2]:This paper describes about various components of selenium like selenium IDE,Selenium Grid,Selenium Web driver commands used and comparison with QTP.This paper also tells about uses of selenium tool with respect to different industries like Bio-tech,e-commerce,travel ,pharmaceutical etc.

Sherry Singla ,Harpreet kaur[3]:This paper tells about keyword driven method used for automation of testing instead of use of multiple functions they have abstracted those function to excel and in excel they have made excel data set on which they perform testing with the help of program.

Regina Rangstrom[4]: This paper presents when we are developing web software, the ultimate goal of the tester or developer is to ensure that the application is tested often and thoroughly. More often than not, creating automated test scripts is the best way to be sure that this goal is accomplished. If modifying or refactoring the test script does become necessary, there are ways to make sure this job is done quickly and correctly. The main way is to avoid test duplication. By keeping specific tests self contained, they can be reused in several places and only one modification would be necessary for all instances.

Ms. Rigzin Angmo, Mrs. Monika Sharma[5]:This paper tells about framework of selenium.How different functions and platform are useful for programmer to automate the testing.This paper also tells about record and play function of this tool.How we can choose framework in order to save time and money and how with the help of choosing good framework we can improve the quality of software.

Chandraprabha1, Ajeet Kumar, Sajal Saxena[6]:This paper describes about using of selenium web driver.and they have separate the code and used for the purpose of reusability.This paper tells about how the data which is extracted will be used for excel files and program is written for accessing those files. So overall purpose of this paper is to develop Data driven framework for automation testing.

Preeti Yadav, Ajay Kumar[7]:This paper tells about usage of selenium components effectiveness and usability of this tool. It is based on comparative Study of selenium tools and also describes testing tools and features like web testing and window applications and also its components like IDE,CORE and RC.

Nidhika uppal[8]: In This paper describes the all components of selenium have a number of limitations which restricts use of selenium as automation testing tool .Selenium IDE only as test automation tool the functionality cannot be tested on all browsers. Web Driver is the latest version of selenium and is very strong. It removed lots of drawbacks in RC and selenium IDE. Selenium testing tool develop a common platform where all tools can be grouped and used together and enhance the selenium tools. The future can Enhance Selenium functionality by adding more window based controls. Error Element highlighting. Image comparison can be implemented using open source image comparison tools and merge them with selenium.

### **III. FIGURES AND TABLES**

We have used this code on Different websites with the help of this code we have following results.

- Total Number of links
- successful links
- Broken links

```

List links=driver.findElement(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 httpURLConnection=(HttpURLConnection)url.openConnection();
        httpURLConnection.setConnectTimeout(3000);
        httpURLConnection.connect();
        if(httpURLConnection.getResponseCode()==200)
        {
            System.out.println(linkUrl+" - "+httpURLConnection.getResponseMessage());
        }
    }
}
    
```

Fig 1.1 Shows code for automation

5.1 This below Fig 1.3 And Fig 1.4 Figure shows Count and Find Total Number of links and number of Broken links on Facebook.

Number of Links	Number of Broken Links	Working Links
57	1	56

```

Oct 02, 2017 3:02:01 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Attempting bi-diagnostic session, assuming Forcel's Law holds true on the remote end
1506936723927  nosprofile:profile INFO Using profile path C:\Users\GURSIM-1\AppData\Local\Temp\rust_mozprofile.80f2qhp6Vzeb
1506936724009  geckodriver:marionette INFO Starting browser C:\Program Files (x86)\Mozilla Firefox\firefox.exe
1506936724025  geckodriver:marionette INFO Connecting to Marionette on localhost:63578
Oct 02, 2017 3:02:48 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Total links are 57
https://www.facebook.com/# - OK
https://www.facebook.com/# - OK
https://www.facebook.com/# - OK
https://www.facebook.com/# - OK
https://www.facebook.com/recover/initiate?lww=110 - OK
https://www.facebook.com/# - OK
https://www.facebook.com/legal/terms - OK
https://www.facebook.com/about/privacy - OK
https://www.facebook.com/policies/cookies/ - OK
https://www.facebook.com/# - OK
https://www.facebook.com/pages/create/?ref_type=registration_form - OK
https://ps-in.facebook.com/ - OK
https://hi-in.facebook.com/ - OK
https://uz-pk.facebook.com/ - OK
https://mz-in.facebook.com/ - OK
https://gu-in.facebook.com/ - OK
https://bn-in.facebook.com/ - OK
https://ta-in.facebook.com/ - OK
    
```

fig 1.3



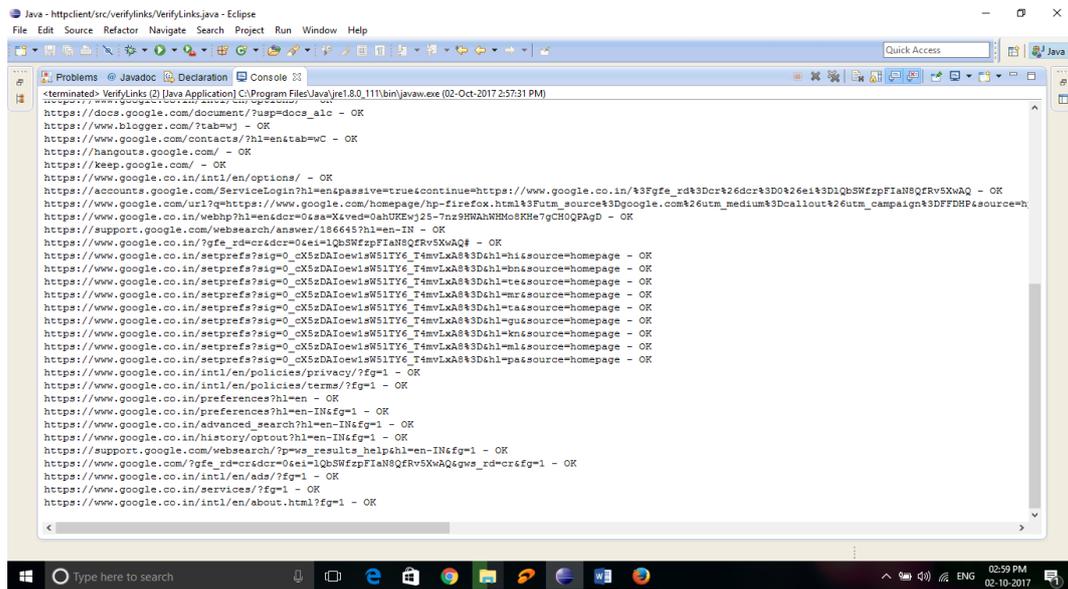


fig 1.6

5.3 This Figure Fig 1.7 And Fig 1.8 shows Count and Find Total Number of links and number of Broken links on Twitter.

Number of Links	Number of Broken Links	Working Links
176	2	174

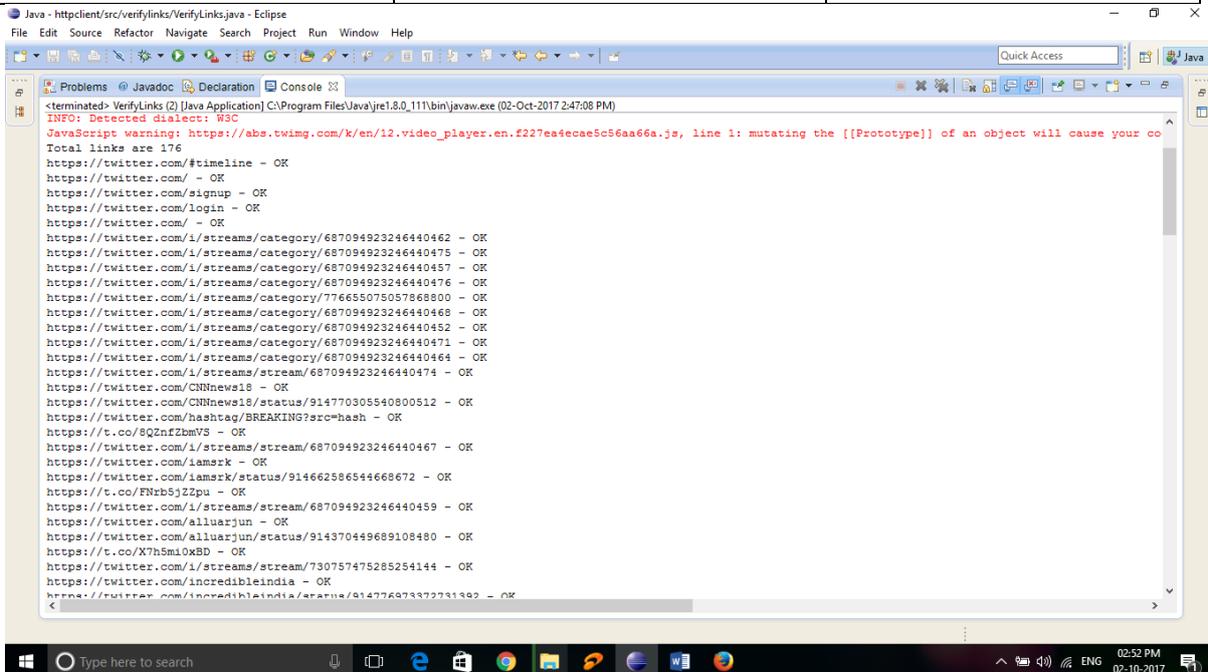


fig 1.7

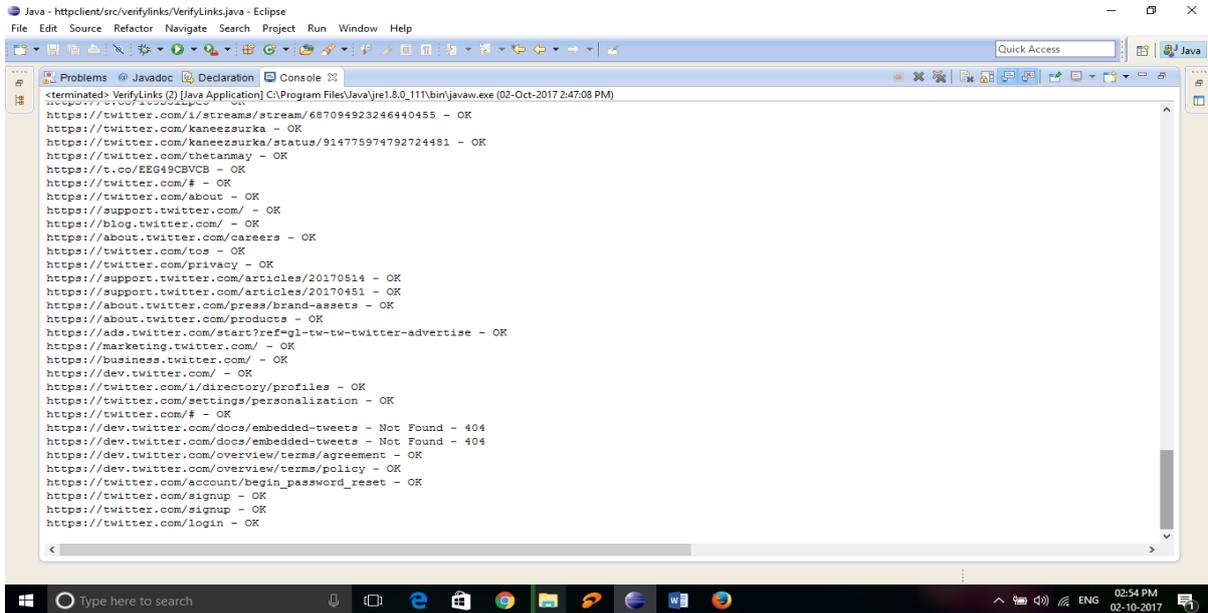


fig 1.8

5.4 This Figure Fig 1.9 And Fig 1.10 shows Count and Find Total Number of links and number of Broken links on Yahoo.

Number of Links	Number of Broken Links	Working Links
104	0	104

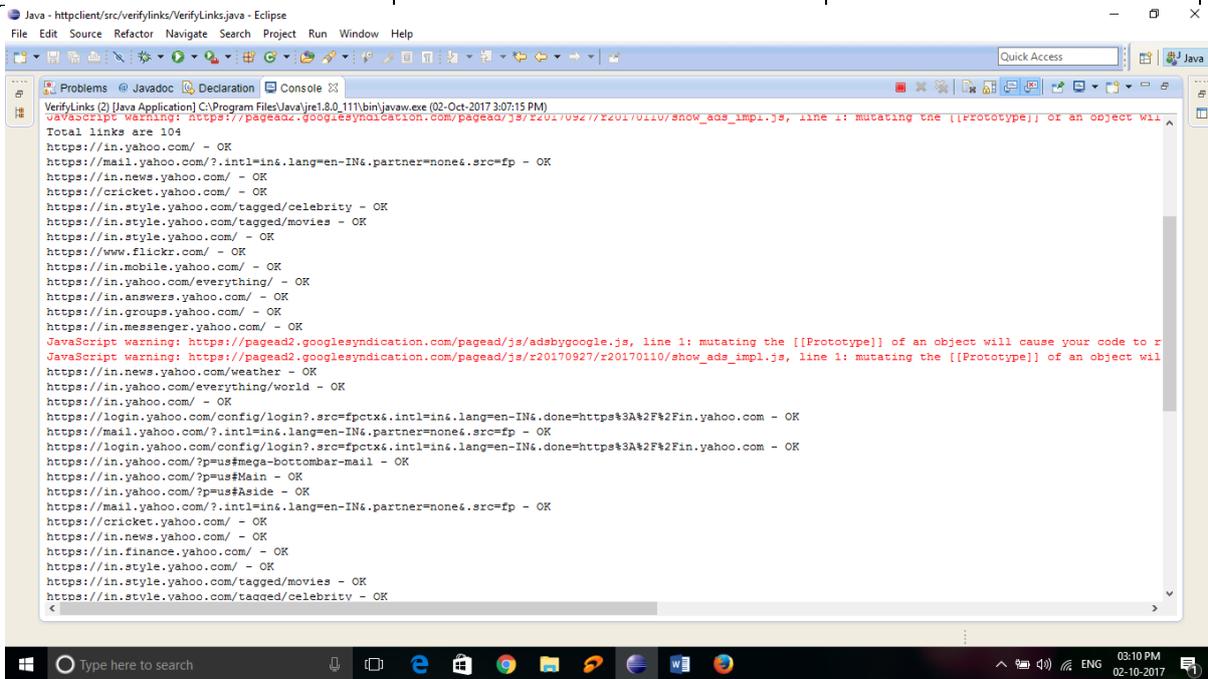


fig 1.9

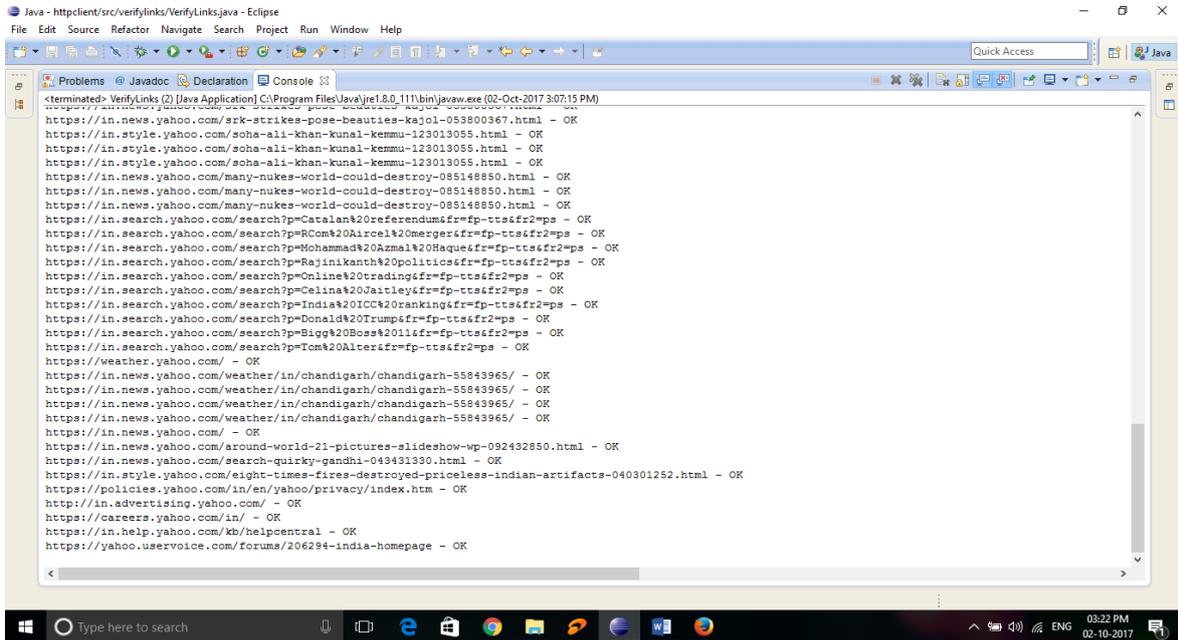


fig 1.10

5.5 This FigureFigureFig 1.11 And Fig 1.12 shows Count and Find Total Number of links and number of Broken links on Alibaba.

Number of Links	Number of Broken Links	Working Links
237	0	237

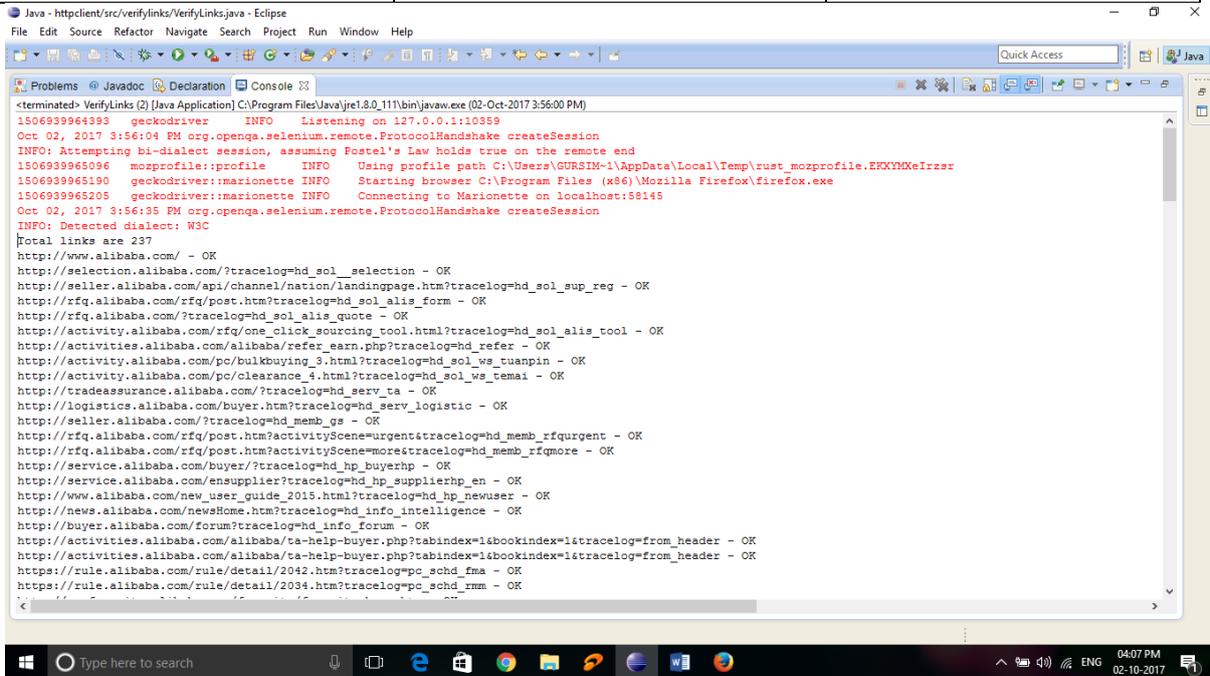
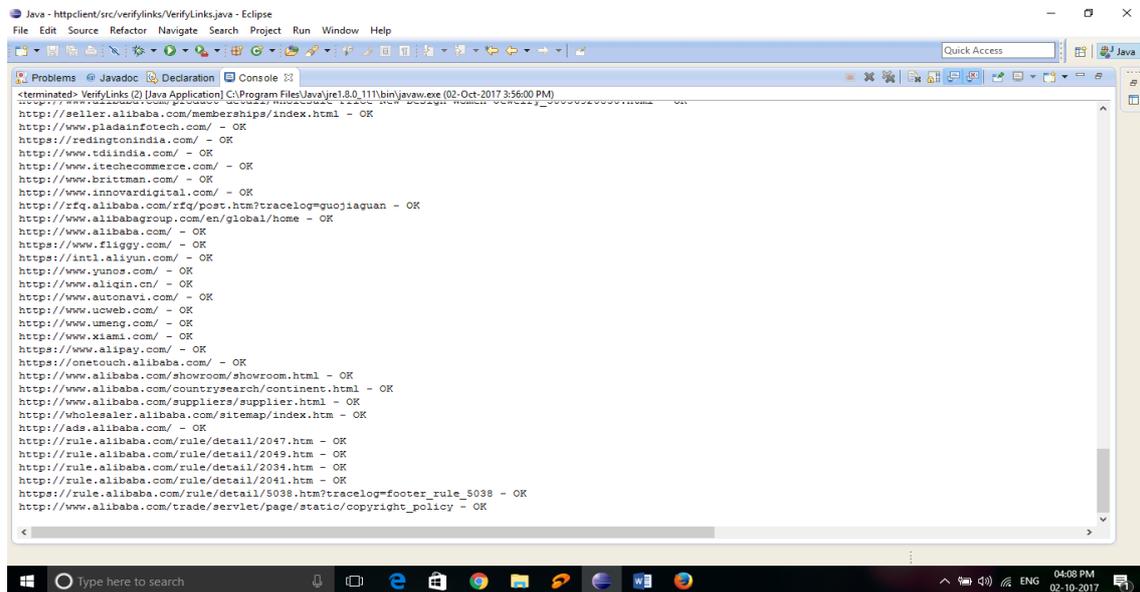


fig 1.11

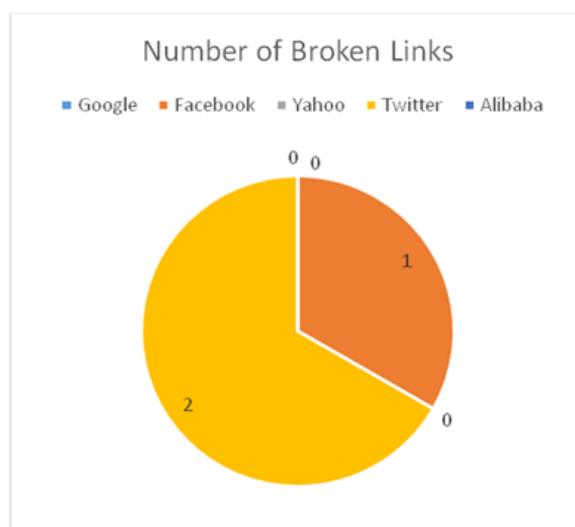
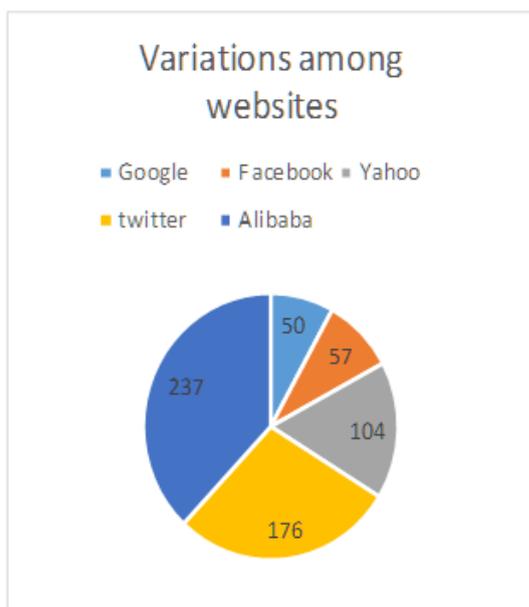


**fig 1.12**

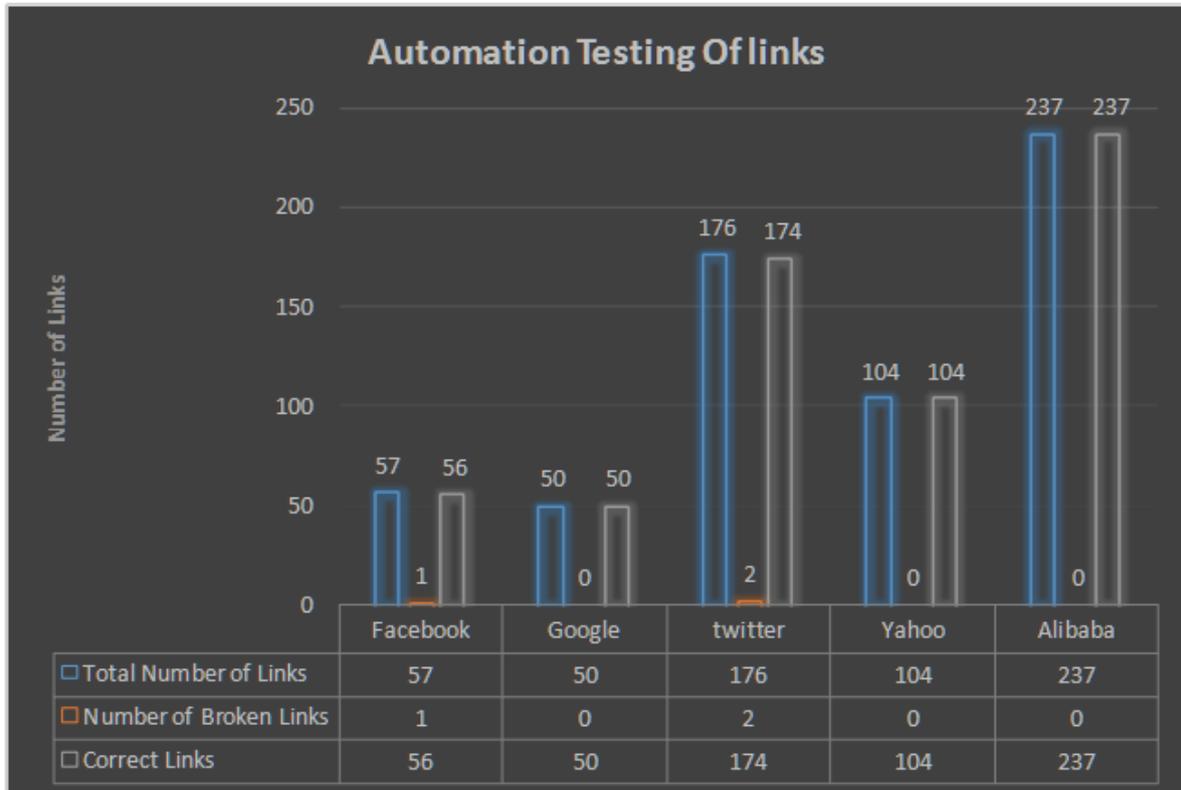
**5.1.2 The Below Table showing Variations Among different websites**

S.no	Website name	Total number of Links	Number of Broken Links
1	Facebook	57	1
2	Google	50	0
3	twitter	176	2
4	Yahoo	104	0
5	alibaba	237	0

**5.1.3 The below Pie charts shown variation among different websites.**



**5.1.3 The Below Graph Showing Variations among different Websites**



**IV. CONCLUSION**

Selenium is a system involves many devices utilized for testing web applications and it has an astounding structure to computerize process. The principle advantage of utilizing mechanized devices is to stay away from manual endeavors. It utilizes distinctive stages and programming dialects for Automation Framework. Manual testing is tedious requires overwhelming interest in human resource. In this paper we have taken every necessary step to Identify total number of connections and out of that what number of are effective and what number of connections are broken on site page by utilizing Automation testing instrument Selenium web driver. We have robotize the way toward finding broken connections as opposed to check physically each connection independently. This will give the check of connections and furthermore report the broken connections..

**REFERENCES**

- [1] Harpreet Kaur, Dr.Gagan Gupta, "Comparative Study of Automated Testing Tools: Selenium, Quick Test Professional and Testcomplete"
- [2] Jagannatha , Niranjanamurthy , Manushree , Chaitra, "Comparative Study on Automation Testing using Selenium Testing Framework and QTP "
- [3] Sherry Singla ,Harpreet kaur , " Selenium Keyword Driven Automation Testing Framework"
- [4] Regina Ranstrom, "Automated Web Software Testing With Selenium".

- [5] Ms. Rigzin Angmo, Mrs. Monika Sharma," Selenium Tool: A Web based Automation Testing Framework".
- [6] Chandrababha1, Ajeet Kumar, Sajal Saxena,"systematic study of a web testing tool:selenium".
- [7] Preeti Yadav, Ajay Kumar,"An automation testing using selenium tool".
- [8] Nidhika uppal, "Enhancement in Selenium automation testing tool and functionalities.
- [9] Automation testing[www.guru99.com/automationtesting. html](http://www.guru99.com/automationtesting.html).
- [10] Jovanovich and Irena, "Software Testing Methods and Techniques," May 26, 2008.