VISVESVARAYATECHNOLOGICALUNIVERSITY

JNANASANGAMA, BELGAUM-590014

AN INTERNSHIP

REPORT ON

"VERIFYING THE ELEMENTS OF WEB PAGE USING AUTOMATION TESTING WITH HELP OF SELENIUM"

Submitted in partial fulfilment of the requirements for the award of the certificate of

INTERNSHIP IN

THE SPARKS FOUNDATION

SUBMITTED BY:

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CERTIFICATE

This is to certify that **POOJITH S (1DB18IS058)** has successfully completed the INTERNSHIP on "***VERIFYING THE ELEMENTS OF WEB PAGE USING AUTOMATION TESTING WITH HELP OF SELENIUM***". The report has been approved as it satisfies the requirements prescribed for awarding certificate of completion.

Signature of Guide	**Signature of HOD**	**Signature of Principal**
(Prof. Sridevi Sali)	(Dr. B K Raghavendra)	(Dr. Hemadri Naidu T)

Internship certificate:

THE SPARKS FOUNDATION

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This Certificate is presented to

Poojith S

for an outstanding contribution during the session (Aug 2021 - Sep 2021) of Graduate Rotational Internship Program at The Sparks Foundation on 07-Sep-2021.

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PRANAV DUBEY

MANAGING DIRECTOR

DECLARATION

I, **POOJITH S** student of eighth semester, Information Science Engineering, Don Bosco Institute of Technology, Bengaluru, hereby declare that, the dissertation entitled **"VERIFYING THE ELEMENTS OF WEB PAGE USING AUTOMATION TESTING WITH HELP OF SELENIUM"**, embodies the seminar report, independently carried out under the guidance of Assistant Professor, Prof. Ugranada Channabasava , Department of Information Science Engineering, as partial fulfilment of the requirements for the award of the B.E degree in **INFORMATION SCIENCE ENGINEERING**, of the Visvesvaraya Technological University, Belagavi during the academic year 2021-2022.

I also declare that, to the best of my knowledge and belief, the work reported herein does not form part of any other report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this by any student.

Place: Bengaluru **POOJITH S**

Date: **1DB18IS058**

ABSTRACT

The testing process consist of repetitive task which can automated which in turn helps us to get rid of manual testing. These testing process can be hectic some time so the field of automation testing came into existences.

There are many software/tools which makes the automation testing easy such as Selenium, Silk Test, Test Studio etc.. with the help of these technology we can easily automate the repetitive task and get rid of manual testing

In my project the tool used is a selenium tool, Selenium is a very well-known tool when it comes to testing automation. It allows its users to write scripts in a lot of different languages, including Java, C#, Python, Perl, and Ruby. This tool also runs in several operating systems and browsers. This tool actually comes in different editions.

ACKNOWLEDGEMENT

It has given me immense pleasure to thank **Dr. B K Raghavendra**, Head of Department, for his constant support and encouragement.

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POOJITH S

[1DB18IS058]

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Chapter–1

INTRODUCTION

There are two kinds of testing in the world of software manual and automated. Some types of manual testing, such as discovery testing and usability testing, are invaluable. You can do other kinds of testing—like regression testing and functional testing—manually, but it's a fairly wasteful practice for humans to keep doing the same thing over and over again. It's these kinds of repetitive tests that lend themselves to test automation.

Test automation is the practice of running tests automatically, managing test data, and utilizing results to improve software quality. It's primarily a quality assurance measure, but its activities involve the commitment of the entire software production team. From business analysts to developers and DevOps engineers, getting the most out of test automation takes the inclusion of everyone.

Selenium is a free (open-source) automated testing framework used to validate web applications across different browsers and platforms. You can use multiple programming languages like Java, C#, Python etc to create Selenium Test Scripts. Testing done using the Selenium testing tool is usually referred to as Selenium Testing.

1.1.1 Company profile

The Sparks Foundation. This brand-new education nonprofit trying to sell students hope for successful future. Hope that they can rise out of any situation, regardless of where they came from. Whether it's from a family with a less than ideal financial situation or a family that simply does not support where they want to go. Either way, The Sparks Foundation (or TSF) is for you. This brand-new startup was co-founded by people who believe that every student should have a chance at greatness, and they have created multiple programs to help students reach their maximum potential.

The first program that they have successfully put into play for about three months now is their Graduate Rotational Internship Program, or GRIP. This internship program is based completely online as a part-time internship for students to complete in the span of 3 months. GRIP offers internships for the areas of tech, marketing, and human resources. The first month works on individual tasks, such as writing articles and designing posters, the second month consists of group work. The groups for the second month of the program are based on a personality test that all interns take at the beginning of the program so that all interns are placed into groups that will complement their strengths and weaknesses.

The last month focuses on expanding the interns' knowledge of the area they are working in. This program has been successfully running for a few months now, and TSF is expanding their programs to include a wider variety of students from a variety of different backgrounds.

1.1.2 Domain/Technology

Automation Testing using Selenium

Automation Testing :

- Automation testing is a Software testing technique to test and compare the actual outcome with the expected outcome.
- This can be achieved by writing test scripts or using any automation testing tool
- Test automation is used to automate repetitive tasks and other testing tasks which are difficult to perform manually.

Selenium Software:

Selenium Software is not just a single tool but a suite of software, each piece catering to different Selenium QA testing needs of an organization.

Selenium components :

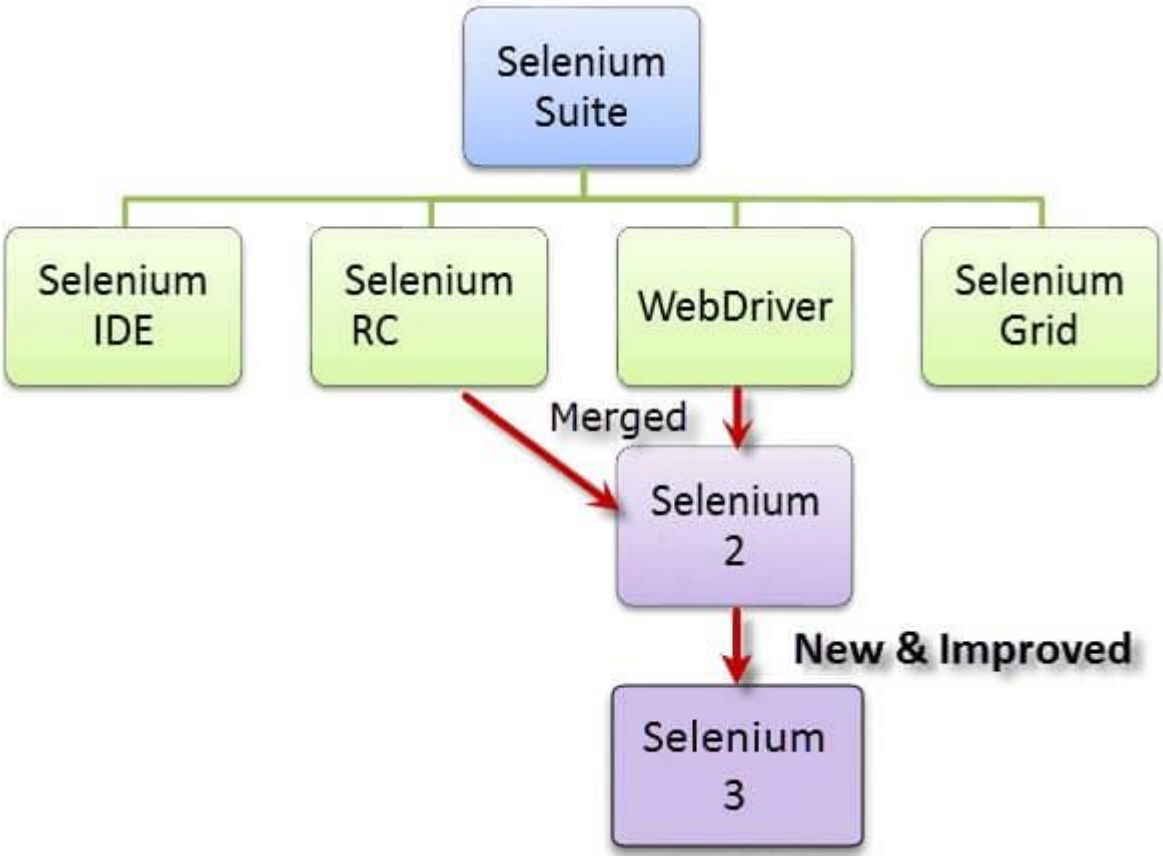
- Selenium Integrated Development Environment (IDE)
- Selenium Remote Control (RC)
- WebDriver
- Selenium Grid

Selenium web driver:

The WebDriver proves itself to be better than both Selenium IDE and Selenium RC in many aspects. It implements a more modern and stable approach in automating the browser's actions. WebDriver, unlike Selenium RC, does not rely on JavaScript for Selenium Automation Testing. It controls the browser by directly communicating with it.

Selenium Remote Control (Selenium RC) :

Selenium RC was the flagship testing framework of the whole Selenium project for a long time. This is the first automated web testing tool that allowed users to use a programming language they prefer. As of version 2.25.0



Selenium Grid:

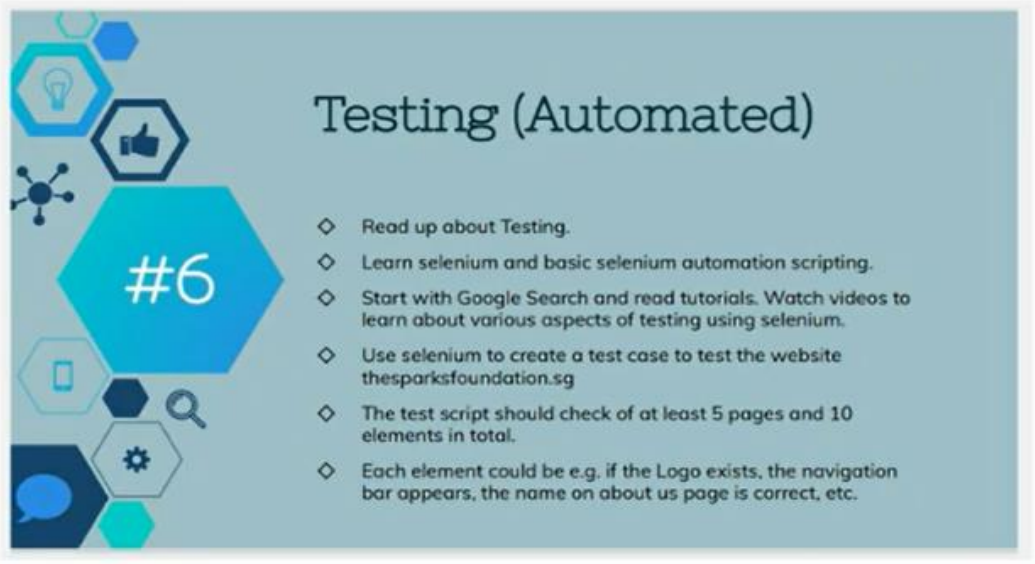
Selenium Grid is a tool used together with Selenium RC to run parallel tests across different machines and different browsers all at the same time. Parallel execution means running multiple tests at once.

3.4 PROBLEM STATEMENT

To verify the elements of webpages using automation selenium

I would like to share my work on automation testing using selenium tool (java language-eclipse IDE)

Here I choose to work on Task 6 given by sparks foundation as it suggest to check for 5 different web page and check 10 elements in total.



Chapter – 2

REQUIREMENTS, TOOLS AND TECHNOLOGIES

In this section the various requirements that are essential for this project are specified. These requirements have to be fulfilled for successful execution of the project. The purpose, scope along with the hardware and software requirements are given below.

2.1 Hardware requirements:

The hardware requirement may serve as the basis for a contract for the implementation of the system and should therefore be a complete and consistent specification of the whole system. They are used by the software engineers as a starting point for the system design. It should do what the system do and not how it should be implemented.

- Processor: Pentium Dual Core (upgraded), AMD
- Processor Speed: 1.3GHz
- RAM: 1GB
- Hard Disk Capacity: 40 GB
- Standard Output Display and Keyboard

2.2 Software requirements:

A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document.:

- Operating System: Windows 98/2000/XP/Vista/7/8/10
- Programming language: Java
- Tool: Selenium Automation
- Development Tool: eclipse IDE

Chapter3

IMPLEMENTATION

This is source code for the project which runs in eclipse Ide using Java Programming languages.

- Step 1: start the ide and connect the selenium driver
- Step 2: Select the language among c#, java, python, ruby. Start writing test script.
- Step3 : Ensure the connection of the driver the web browser
- Step 4 :Debug and run the Script
- Step 5 : compare the expected results and actual output

SOURCE CODE FOR THE PROJECT

3.1 Step 1: start the ide and connect the selenium driver

we can achieve this by using **"System.setProperty"**

```
//setting up web driver
    System.setProperty("webdriver.chrome.driver","C:\\Users\\Sharath\\browserdriver\\chromedriver.exe");
    ChromeDriver driver=new ChromeDriver();

//opening google search page
    driver.get("http://www.google.com");
    driver.manage().window().setSize(new Dimension(1536, 824));
    driver.findElement(By.name("q")).sendKeys(Keys.DOWN);
```

3.2 Step 2: Select the language among c#, java, python, ruby. Start writing test script.=> java and eclipse ide with selenium jar(java archive)

```
//checking for about us

    driver.findElement(By.linkText("About Us")).click();
    Thread.sleep(1000);
    driver.findElement(By.linkText("Vision, Mission and Values")).click();
    Thread.sleep(1000);
    driver.findElement(By.cssSelector(".w3l_inner_section")).click();
    Thread.sleep(1000);
    driver.findElement(By.cssSelector(".blog-w3ls")).click();
        {
          List<WebElement> elements = driver.findElements(By.cssSelector(".blog-w3ls"));
          assert(elements.size() > 0);
          if(elements.size()>0) {
                System.out.println("about us content found");
          }
          else {
                System.out.println("about us content not found");
```

```
//checking for the logo
    driver.findElement(By.cssSelector(".g:nth-child(1) > div:nth-child(2) .LC20lb")).click();
    Thread.sleep(1000);
    driver.findElement(By.cssSelector("img")).click();
        {
                List<WebElement> elements = driver.findElements(By.cssSelector("img"));
                assert(elements.size() > 0);
                if(elements.size()>0) {
                        System.out.println("the sparks foundationlogo found");
                }
                else {
                        System.out.println("the sparks foundation logo not found");
                }
        }
```

3.3 Step 3: Ensure the connection of the driver the web browser

3.4 Step 4 : Debug and run the Script

```
        driver.get("https://vivekvpai.github.io/validation.github.io/");
driver.manage().window().setSize(new Dimension(1920, 970));
driver.findElement(By.id("name")).click();
Thread.sleep(1000);
driver.findElement(By.id("name")).sendKeys(RandomString.getAlphaNumericString(10));
Thread.sleep(1000);
driver.findElement(By.id("usn")).click();
Thread.sleep(1000);
driver.findElement(By.id("usn")).sendKeys(RandomsString.getAlphaNumericsString(10));
Thread.sleep(1000);
driver.findElement(By.id("branch")).click();
{
  WebElement dropdown = driver.findElement(By.id("branch"));
  dropdown.findElement(By.xpath("//option[. = 'ISE']")).click();
}
driver.findElement(By.id("branch")).click();
Thread.sleep(1000);
driver.findElement(By.id("gyear")).click();
Thread.sleep(1000);
driver.findElement(By.id("gyear")).sendKeys(RandomsString.getAlphaNumericsString(2));
Thread.sleep(1000);
driver.findElement(By.id("number_code")).click();
Thread.sleep(1000);
driver.findElement(By.id("number_code")).sendKeys(RandomsString.getAlphaNumericsString(3));
Thread.sleep(1000);
driver.findElement(By.id("contact_number")).click();
Thread.sleep(1000);
driver.findElement(By.id("contact_number")).click();
Thread.sleep(1000);
{
  WebElement element = driver.findElement(By.id("contact_number"));
  Actions builder = new Actions(driver);
  builder.doubleClick(element).perform();
}
driver.findElement(By.id("contact_number")).sendKeys(RandomsString.getAlphaNumericsString(10));
driver.findElement(By.cssSelector(".btn")).click();

}
```

Step 5 : Debug and run the Script And compare the expected results and actual output

```
<terminated> test1_sparksfoundation [Java Application] C:\Users\Sharath\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.1.v20210528-1205\jre\bin\javaw.exe
Starting ChromeDriver 91.0.4472.101 (af52a90bf87030dd1523486a1cd3ae25c5d76c9b-refs/branch-heads/4472@{#1462}) on port 2539
Only local connections are allowed.
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.
ChromeDriver was started successfully.
[1628330869.956][WARNING]: This version of ChromeDriver has not been tested with Chrome version 92.
Aug 07, 2021 3:37:51 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
the sparks foundationlogo found
about us content found
Polices and Code content found
Programs content found
LINKS content found
Contact Us content found
the Sparks foudation website is verified successfully using automation testing-Selenium
```

Chapter 4

Learning outcomes

- Basic java concepts like looping statements, conditional statements
- Accessing web element using drivers etc.
- Develop the solution for the given problem statement using selenium tool.
- Automating test cases

Chapter 5

CONCLUSION

This Project named "VERIFYING THE ELEMENTS OF WEB PAGE USING AUTOMATION TESTING WITH HELP OF SELENIUM" is designed to limit the process of manual testing and promote the automation testing with the help of automation selenium.

By developing this model/project it helped me in understanding the automation testing with real-life example, it also made working with selenium tool very easy and comfortable

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- **https://www.selenium.dev/**
- **YouTube and Wikipedia**
- **Automation Testing using Selenium Tool**
  – Mrs. Yashasvi B N Assistant Professor(DBIT)