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**Vellore Institute of Technology**  
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**SWE2005- SOFTWARE TESTING**

**J Component Final Document**

**SLOT- F1**

**TITLE: OPEN LIBRARY**

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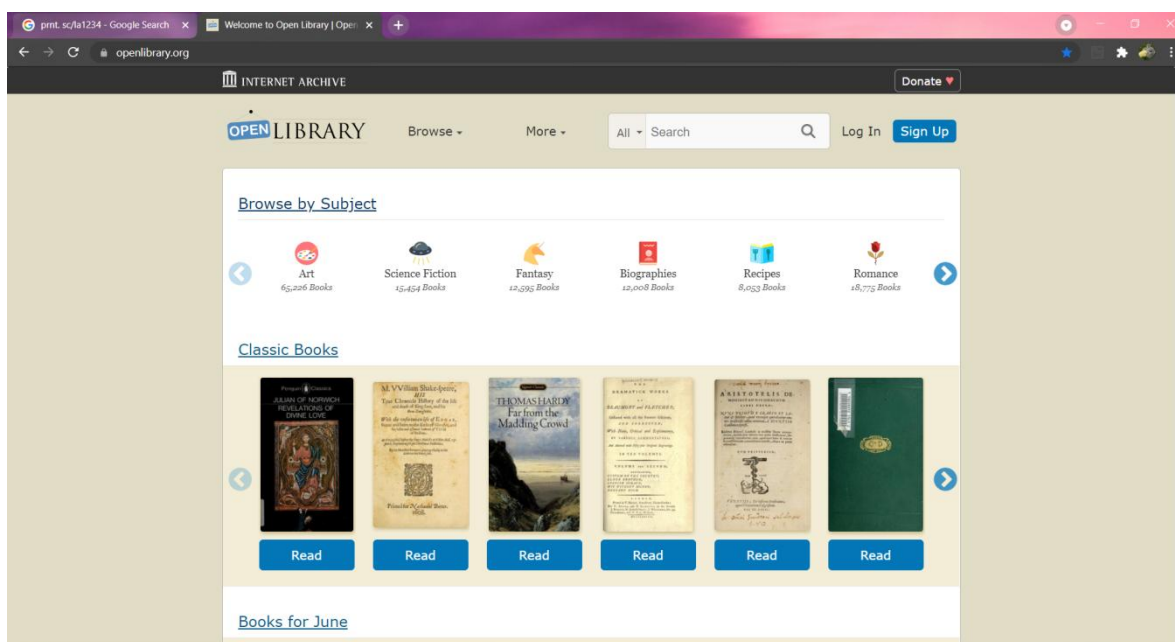
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## ABSTRACT:

Open Library is an open website available to everyone across the world for free. Here users can borrow, read, add or sponsor a book according to their use. There are thousands of books available here. Almost all genre books are available like thriller, fiction, arts, and biographies and so on. So, in this project I will be explaining this website and perform testing using suitable testing tool. The tool which I used for testing is Selenium which is an automated testing tool. I created few test cases on IDE and also used WebDriver using java language to test the website.

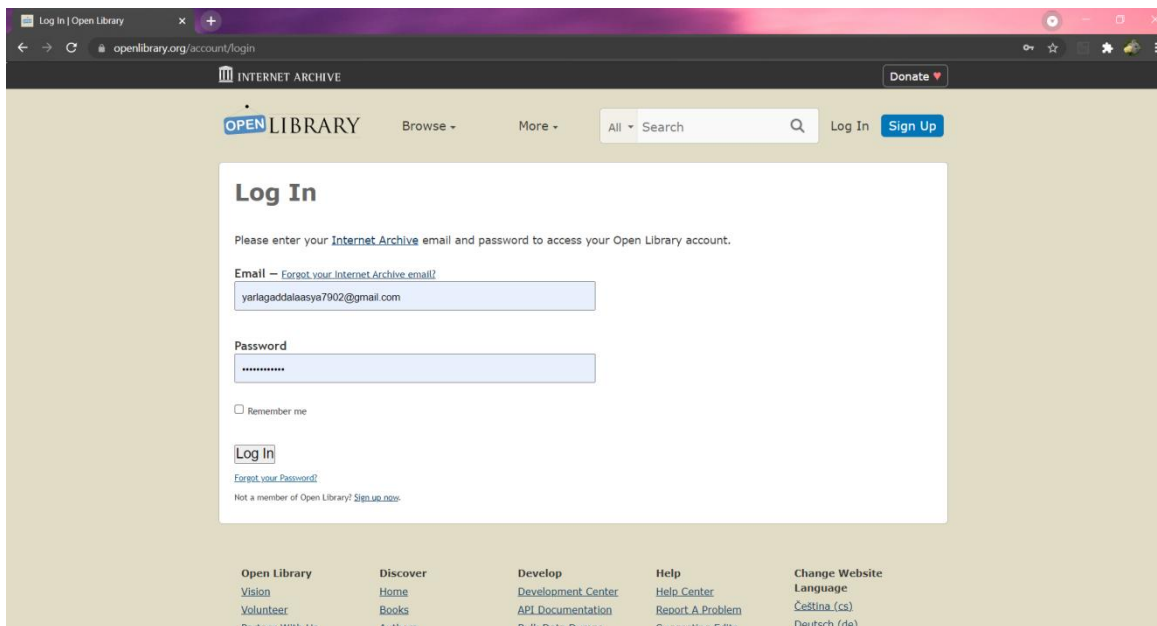
## ABOUT THE WEBSITE:



## MODULES:

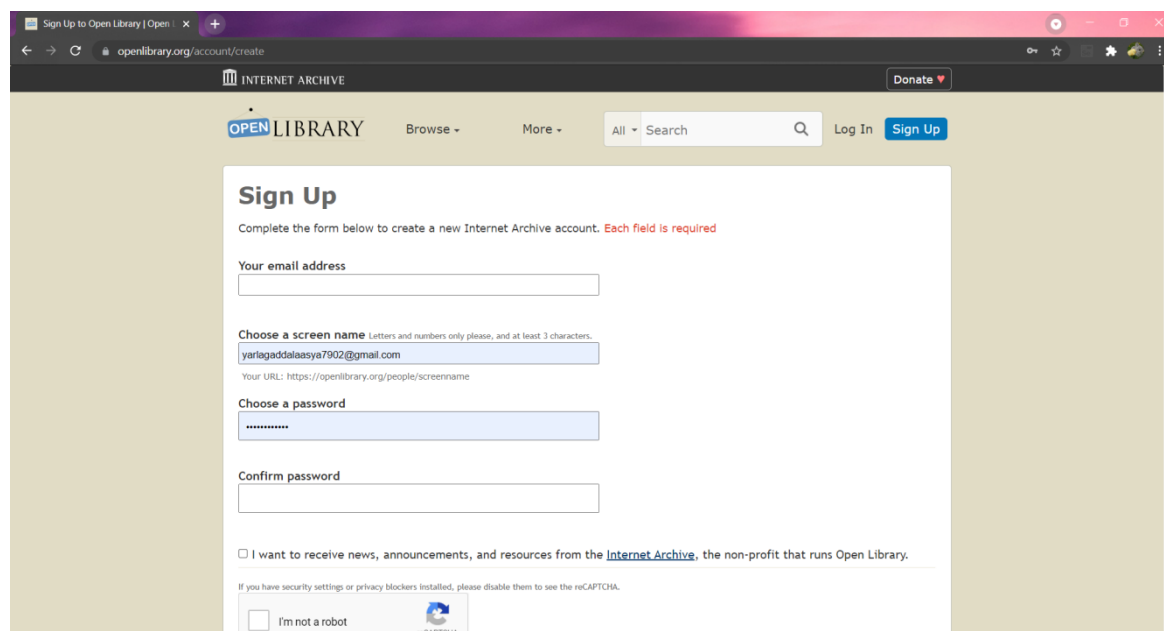
- ✓ Login
- ✓ Sign Up
- ✓ Browse
- ✓ Search
- ✓ Add Book
- ✓ Sponsor Book
- ✓ Donate

1. **Login:** This module enables the user to access the website by entering the credentials like username and password. If the entered details are valid, the user can further perform functions like search, read etc. If not it displays “No account found.”



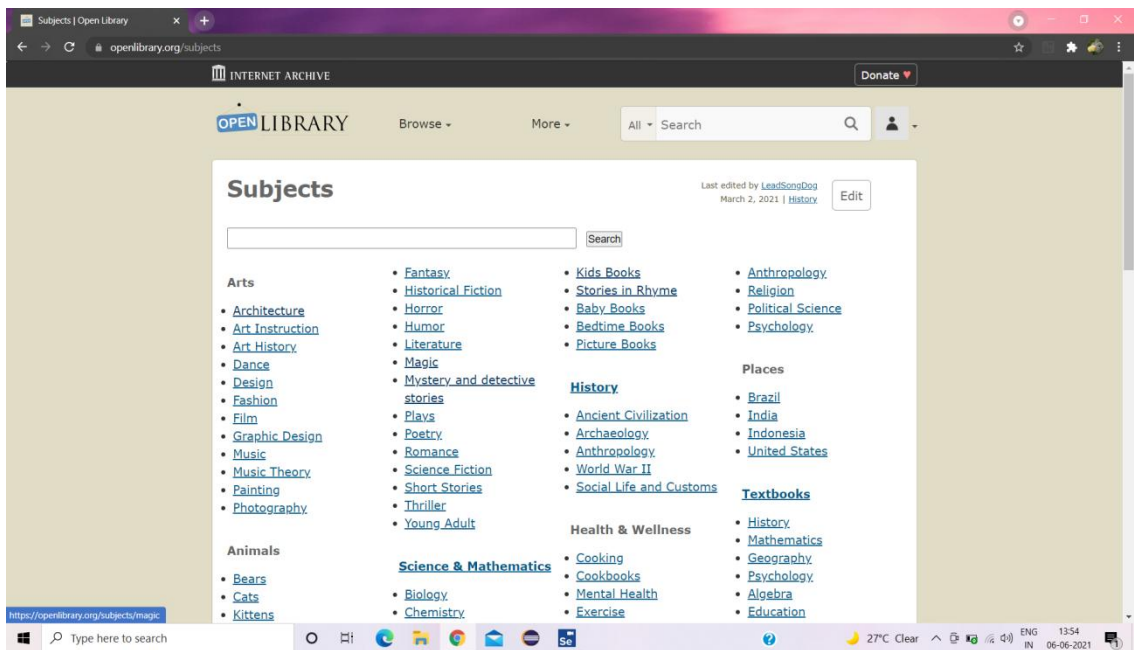
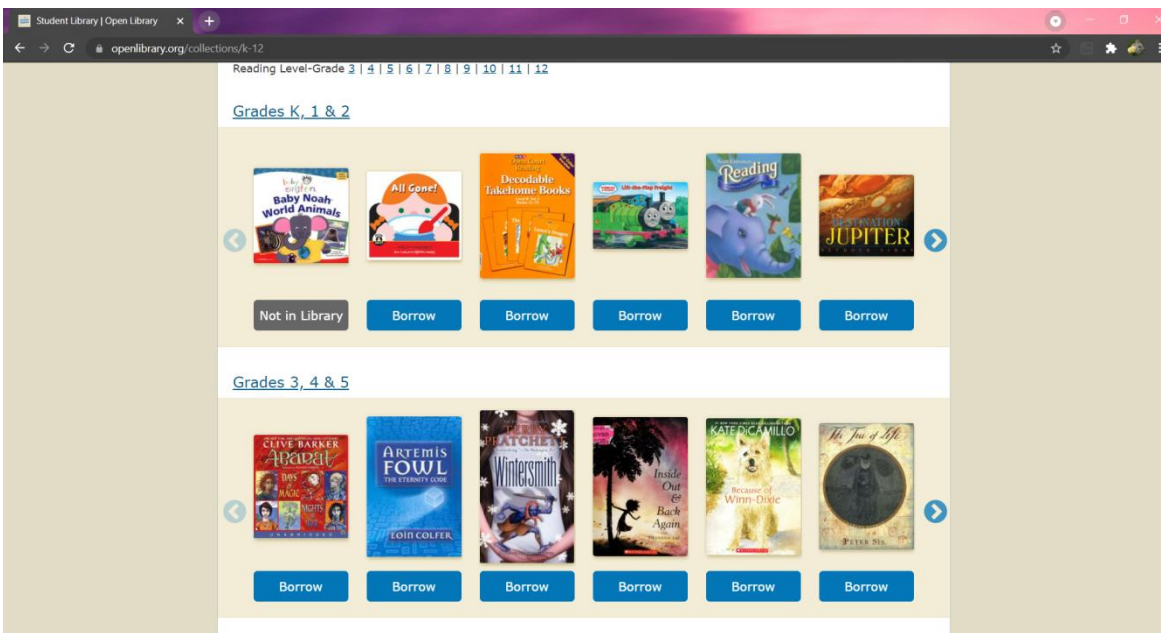
The screenshot shows the Open Library login page. The browser address bar displays 'openlibrary.org/account/login'. The page features the Open Library logo and navigation links. The 'Log In' section prompts the user to enter their Internet Archive email and password. The email field contains 'yariagaddalaasya7902@gmail.com' and the password field is masked with dots. There is a 'Remember me' checkbox and a 'Log In' button. Links for 'Forgot your Internet Archive email?' and 'Forgot your Password?' are provided, along with a 'Sign up now' link for new members. A footer menu includes links for Open Library, Discover, Develop, Help, and Change Website Language.

2. **Sign -Up:** This module enables the user to create account in the website by filling the required details. Once the user has an account he/she can access the website freely.

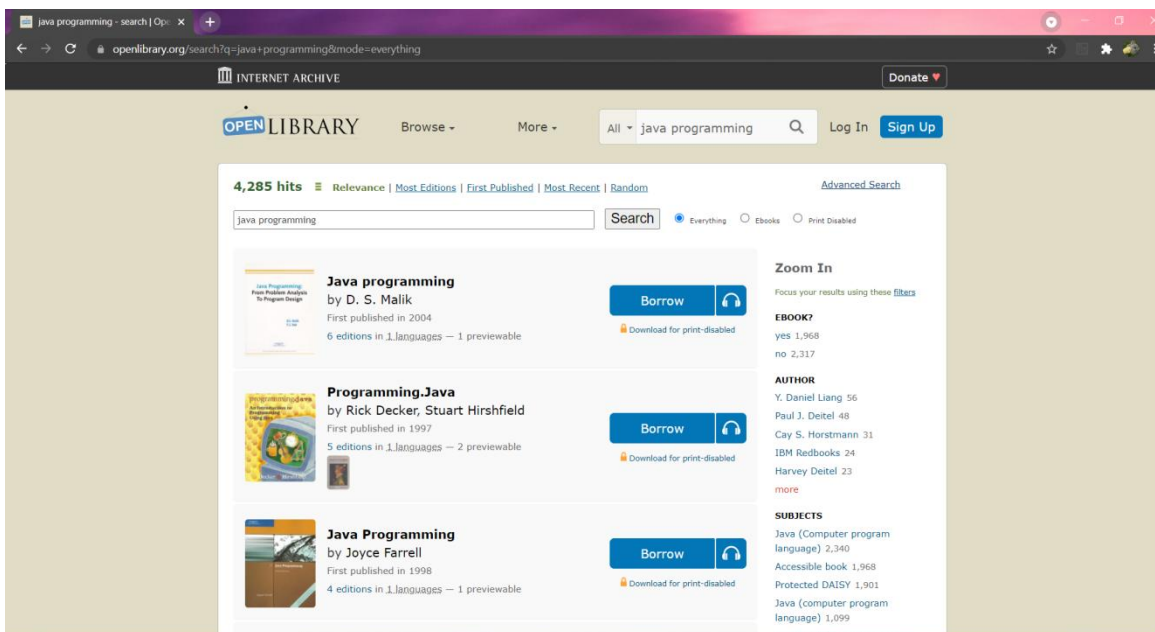


The screenshot shows the Open Library sign-up page. The browser address bar displays 'openlibrary.org/account/create'. The page prompts the user to complete the form to create a new Internet Archive account. The form includes fields for 'Your email address', 'Choose a screen name' (with a note that it should be letters and numbers only, at least 3 characters), 'Choose a password', and 'Confirm password'. The email field contains 'yariagaddalaasya7902@gmail.com' and the URL field shows 'https://openlibrary.org/people/screenname'. There is a checkbox for 'I want to receive news, announcements, and resources from the Internet Archive, the non-profit that runs Open Library.' and a reCAPTCHA widget at the bottom.

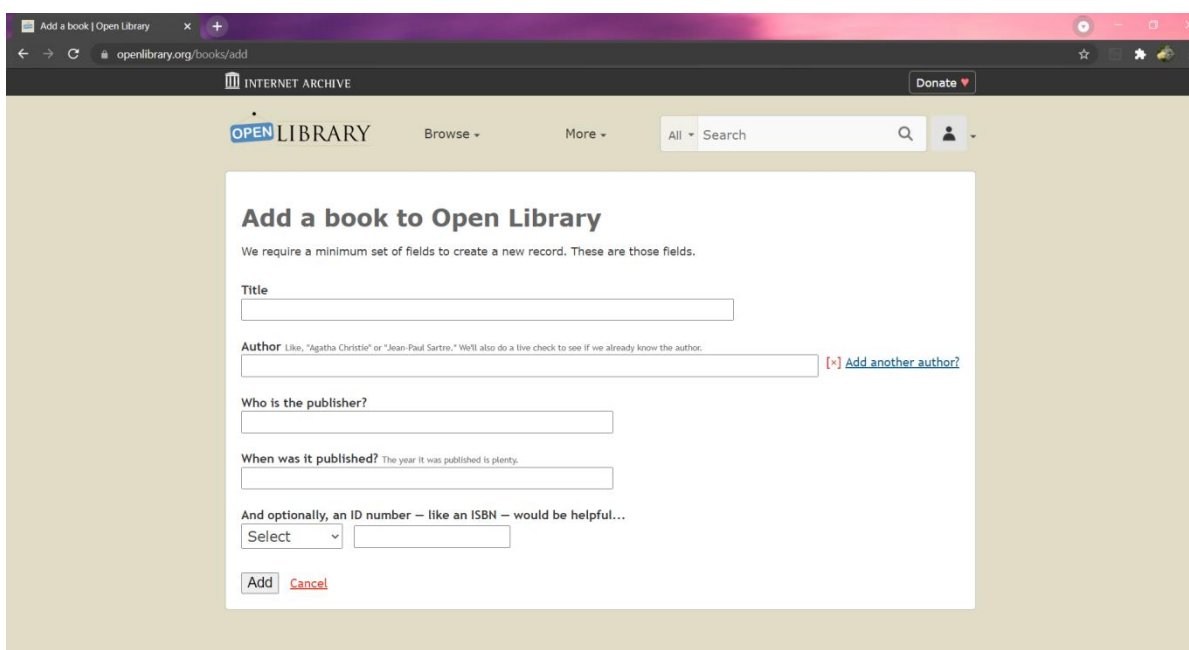
3. **Browse:** This module has many options like subjects, lists, K-12 Student library which is used for selecting our desired category. Once the category is chosen the main page shows books related to it.



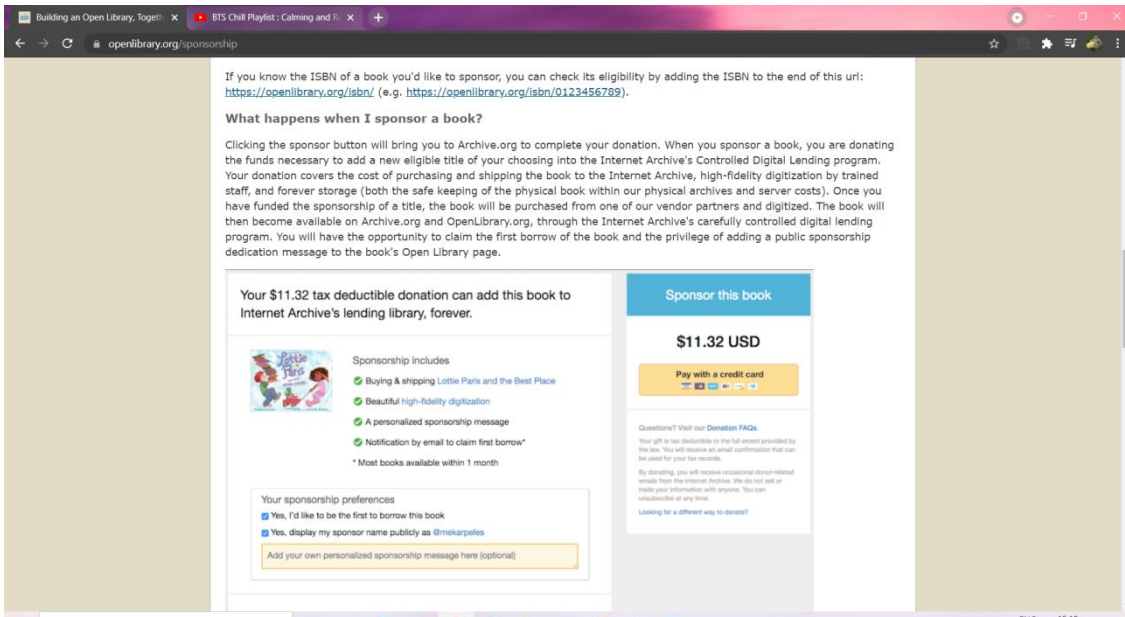
4. **Search:** Search is similar to Browse but in search one can search by title, author, lists etc. Once the option is chosen it shows books related it.



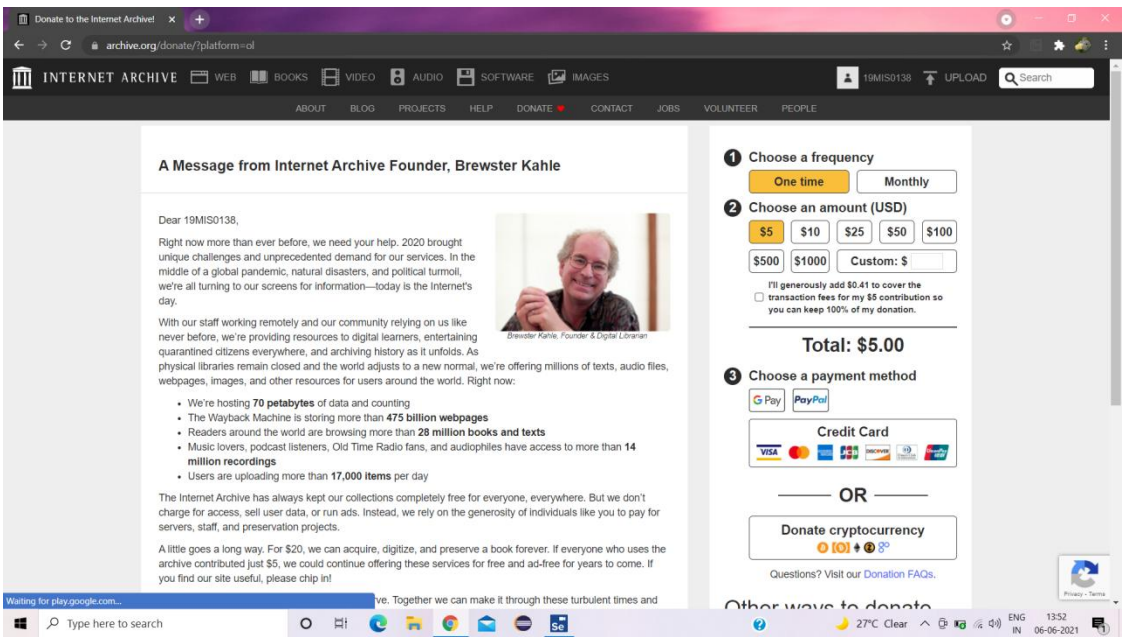
5. **Add Book:** This module allows the user to add a book to the website following the company guidelines and the genre specified. For this, the user should have an account in the website.



6. **Sponsor Book:** This module is used to sponsor a book to the website. It's mainly done for charity. All the terms and conditions have to be followed before sponsoring.



7. **Donate:** Since this is like an NGO, people can donate some money which in turn is used for charity.



## **ABOUT THE TOOL: SELENIUM**

### **What's Selenium?**

- ✓ Selenium is an open-source tool that is used for automating the tests carried out on web browsers.
- ✓ Only testing of web applications is possible with Selenium. We can neither test any desktop (software) application nor test any mobile application using Selenium.

### **Features:**

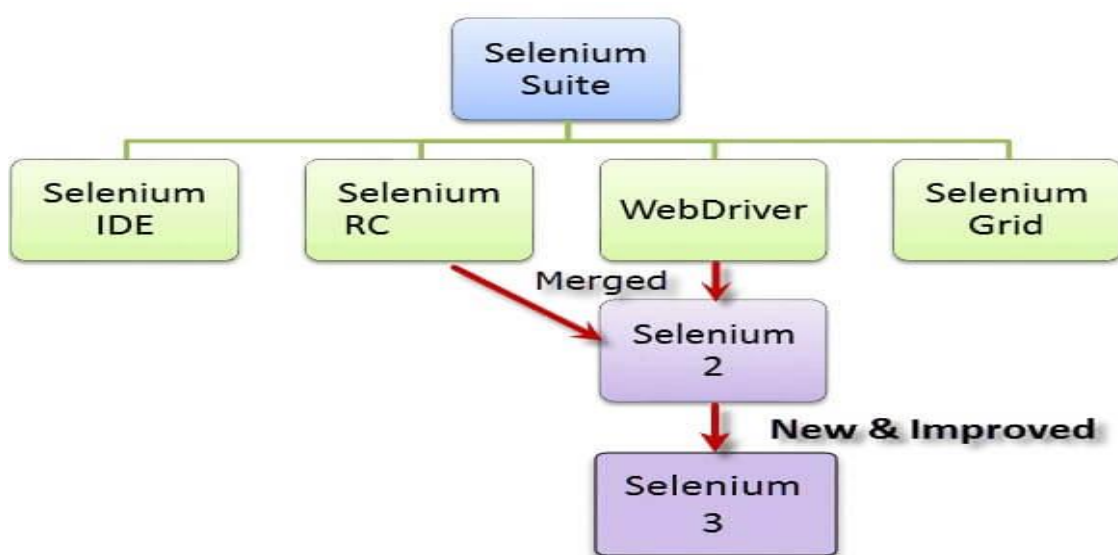
- ✓ Selenium is not just a single tool, as it is a collection of softwares, and each tool has different cases of testing.
- ✓ It can be very useful even for load testing as it allows users to re-use existing functional tests and run them with virtual concurrent users.
- ✓ Selenium is a very powerful open-source testing tool mainly used for automated functional testing via interacting with browser level objects.
- ✓ Selenium in stark contrast with its competitors is very easy to use. The UI of the tool is designed in a way to help the users understand it easily with features like 'click of a button' and 'type words in any of the field boxes'.
- ✓ Selenium can automate the test process with a basic set of instructions. In other words, you do not need a much of programming knowledge to use this tool.

### **TOOLS LISTED IN SELENIUM:**

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



Selenium IDE	>>	Used for playback, record, debugging and editing Selenium scripts
Selenium Grid	>>	Used for minimizing test execution times by facilitating distribution of tests across different browsers and machines, for parallel execution of the tests to be carried out
Selenium Remote Control	>>	Utilized for running tests on various systems and browsers.
Selenium WebDriver	>>	This is the latest version of Selenium and contains a number of Selenium APIs.



At the moment, Selenium RC and WebDriver are merged into a single framework to form **Selenium 2**. Selenium 1, by the way, refers to Selenium RC.

#### ADVANTAGES:

- ✓ It is open source
- ✓ Selenium supports a range of languages, including Java, Perl, Python, C#, Ruby, Groovy, Java Script, etc.
- ✓ Selenium can operate and support across multiple Operating Systems (OS) like Windows, Mac, Linux, UNIX, etc.
- ✓ Selenium provides support across multiple browsers, namely, Internet Explorer, Chrome, Firefox, Opera, Safari, etc.
- ✓ Selenium integrates with programming languages and various frameworks.

- ✓ Selenium Test Automation can be implemented for Mobile web application automation on Android, iPhone, and Blackberry. This can help in generating necessary results and address issues on a continuous basis.
- ✓ Selenium support is community based and an active community support enables constant updates and upgrades. These upgrades are readily available and do not require specific training.
- ✓ Tests run directly across browsers and the users can watch while the tests are being executed.
- ✓ Selenium Test Automation Framework uses scripts that can be across multiple browsers.

## **SELENIUM IDE**

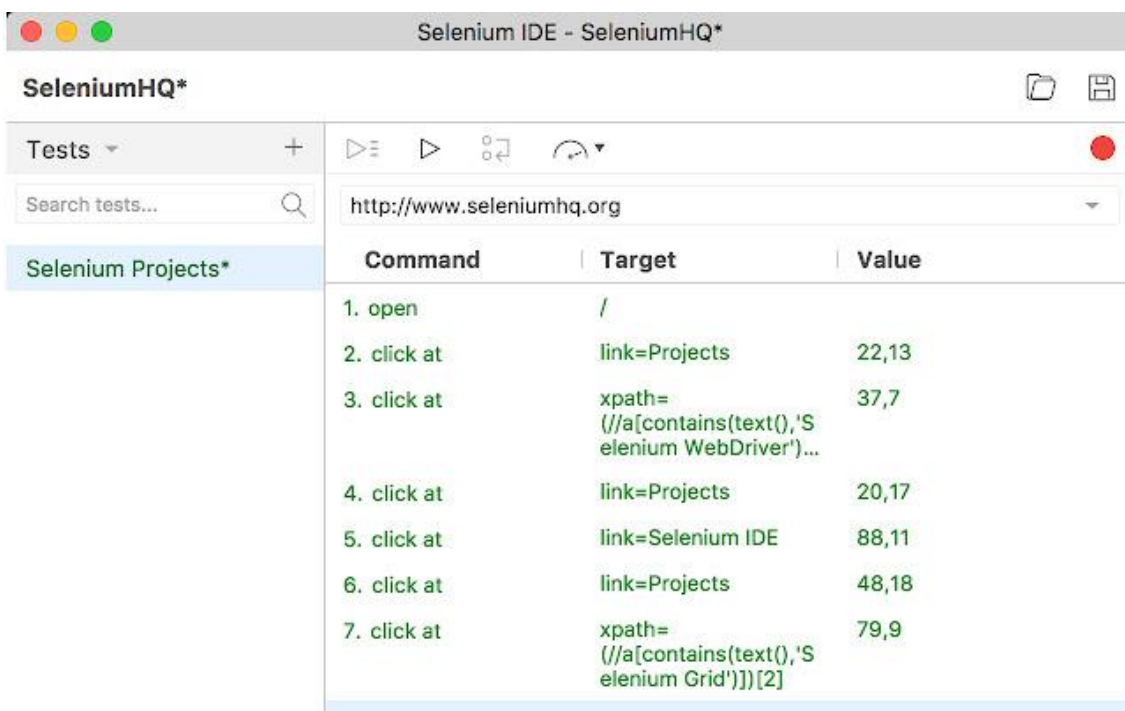
- ✓ **Selenium Integrated Development Environment (IDE)** is the simplest framework in the Selenium suite and is the easiest one to learn.
- ✓ It is a browser plugin that you can install as easily as you can with other plugins.
- ✓ Selenium IDE has a recording feature, that provides an easy-to-use interface for developing automated tests.
- ✓ However, because of its simplicity, Selenium IDE should only be used as a prototyping tool.
- ✓ If you want to create more advanced test cases, you will need to use either Selenium RC or WebDriver.

## Advantages

- ✓ Selenium IDE is very easy to use.
- ✓ It has the capability to convert the test to different programming languages such as html, java etc
- ✓ Programming language experience is not required for Selenium IDE
- ✓ Selenium IDE provides Logging capabilities using file login plug-in.
- ✓ In Selenium IDE, user can debug and set breakpoints
- ✓ Selenium IDE is flexible for the users.

## Disadvantages

- ✓ It will not support iteration and conditional statement
- ✓ Selenium IDE doesn't support error handling
- ✓ Doesn't support test script grouping
- ✓ Selenium IDE do not support Database testing



## **SELENIUM WEBDRIVER**

- ✓ 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.
- ✓ The supported languages are the same as those in Selenium RC.

Java

C#

PHP

Python

Perl

Ruby

### **Advantages**

- ✓ Support for 7 programming languages: JAVA, C#, PHP, Ruby, Perl, Python and .Net.
- ✓ Supports testing on various browsers like: Firefox, Chrome, IE, Safari
- ✓ Tests can be performed on different operating systems like: Windows, Mac, Linux, Android, iOS
- ✓ Overcomes limitations of Selenium v1 like file upload, download, pop-ups & dialogs barrier

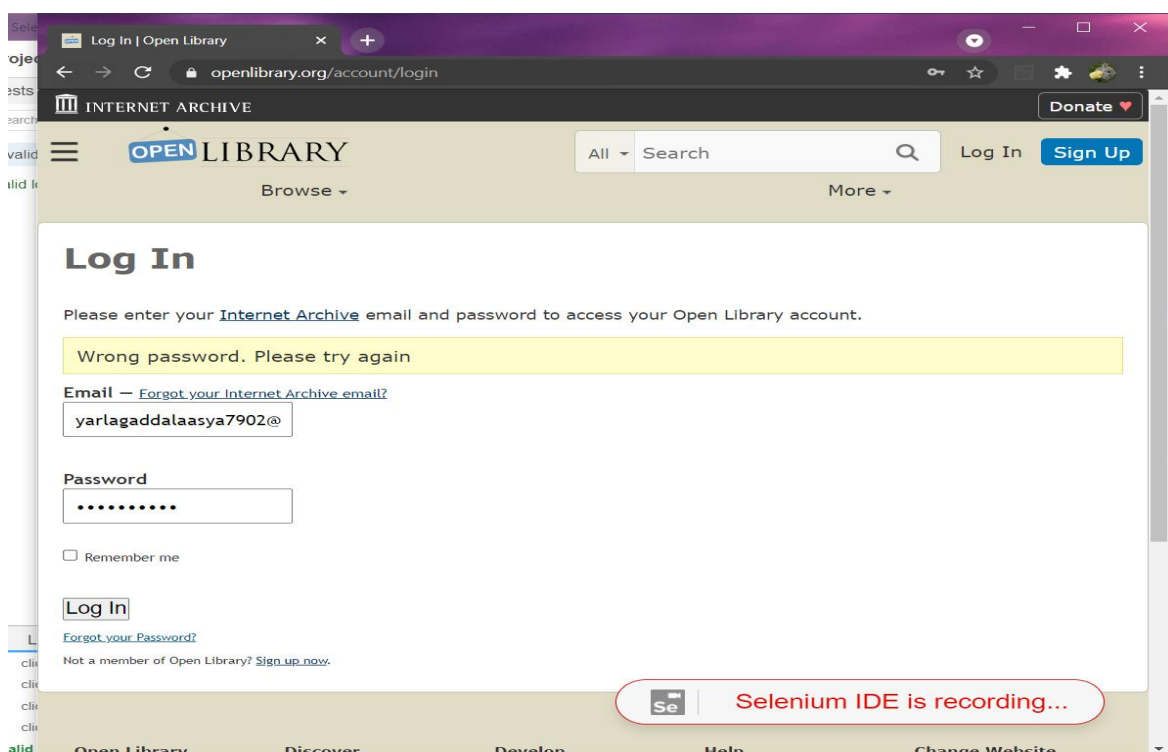
### **Disadvantages**

- ✓ Detailed test reports cannot be generated
- ✓ Testing images is not possible

```
*First.java
1 import org.openqa.selenium.By;
2 import org.openqa.selenium.WebDriver;
3 import org.openqa.selenium.chrome.ChromeDriver;
4
5 public class First {
6
7     public static void main(String[] args) {
8
9         // declaration and instantiation of objects/variables
10        System.setProperty("webdriver.chrome.driver", "D:\\\\ChromeDriver\\\\chromedriver.exe");
11        WebDriver driver=new ChromeDriver();
12
13        // Launch Website
14        driver.navigate().to("http://www.google.com/");
15
16        // Click on the search text box and send value
17        driver.findElement(By.id("lst-ib")).sendKeys("javatpoint tutorials");
18
19        // Click on the search button
20        driver.findElement(By.name("btnK")).click();|
21
22    }
23
24 }
25
```

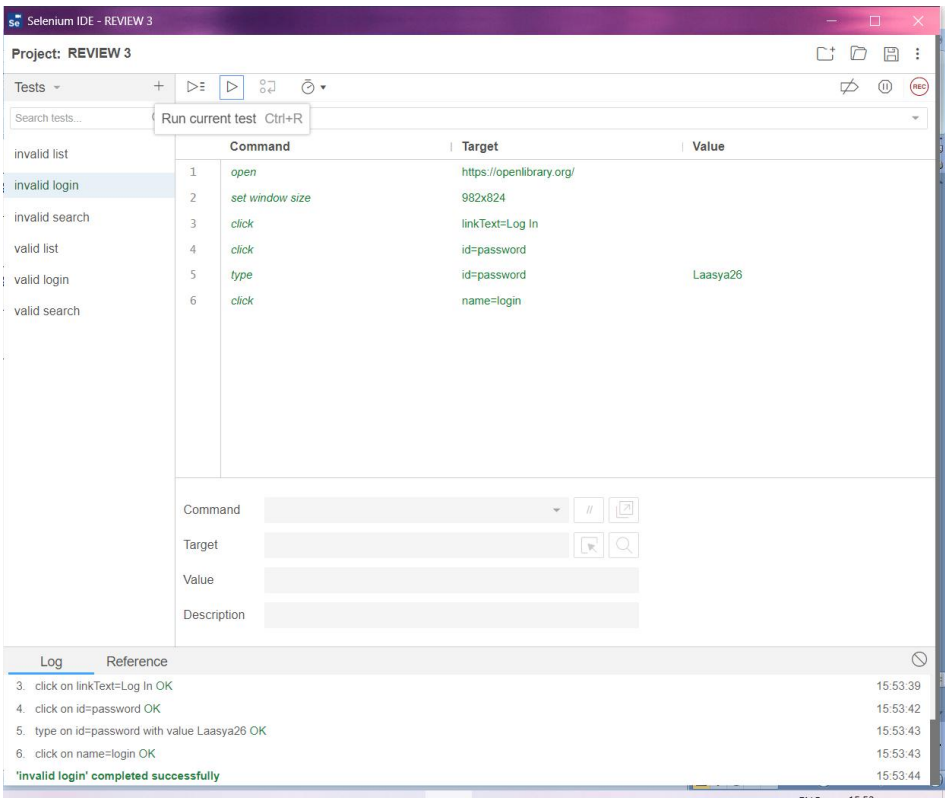
## TESTING OF THE WEBSITE:

### Using Selenium IDE:



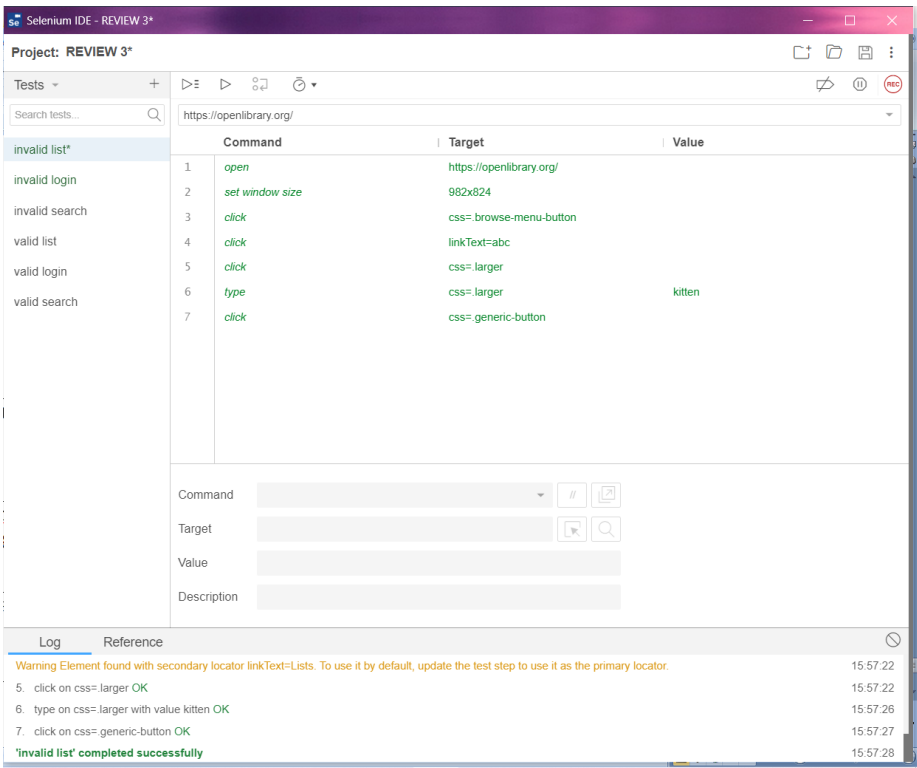
LOGIN:

Test Case ID	Testing Inputs	Expected Outputs	Actual Outputs	Status
1	yarlagaddalaasya7902@gmail.com,Laasya262001	Login successful	Login successful	Pass
2	yarlagaddalaasya7902@gmail.com,Laasya26	Login unsuccessful	Login unsuccessful	Pass



LIST:

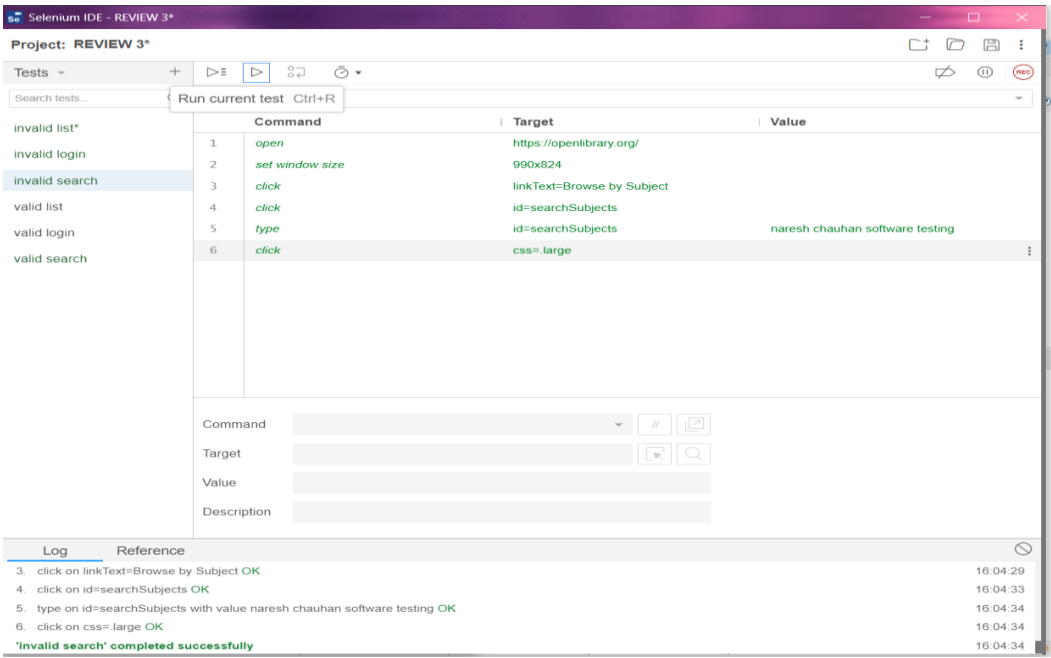
Test Case ID	Testing Inputs	Expected Outputs	Actual Outputs	Status
1	Kitten	No results found	No results found	Pass
2	Architecture	Results Displayed	Results Displayed	Pass



**Note:** Warning here shows that linkTest ”abc” is not found because there is no such element in the given command so it takes “List” as the element and shows successful.

SEARCH:

Test Case ID	Testing Inputs	Expected Outputs	Actual Outputs	Status
1	Naresh Chauhan Software Testing	No results found	No results found	Pass
2	Software Testing	Results Displayed	Results Displayed	Pass



## USING WEBDRIVER:

```
package testing;

import java.util.concurrent.TimeUnit;
import org.openqa.selenium.By;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;

public class OpenLibrary {
    WebDriver driver;
    JavascriptExecutor js;
    public void invokeBrowser() {
        try {

            System.setProperty("webdriver.chrome.driver", "D:\\chromedriver_win32\\chromedriver.exe");
            driver = new ChromeDriver();
            driver.manage().deleteAllCookies();
            driver.manage().window().maximize();
            driver.manage().timeouts().implicitlyWait(30, TimeUnit.SECONDS);
            driver.manage().timeouts().pageLoadTimeout(30, TimeUnit.SECONDS);
            driver.get("http://www.openlibrary.org");
            dropdown();
            //searchBook();
            Browse();
            SponsorBook();
            Donate();
        }
        catch (Exception e) {
            e.printStackTrace();
        }
    }
    //dropdown listcode
    public void dropdown() {
        try {

            Thread.sleep(10000);
        }
        catch (InterruptedException e)
        {
            e.printStackTrace();
        }
        driver.findElement(By.className("search-facet")).click();
        //search
        int i;
        try {
            js=(JavascriptExecutor)driver;
```



```

for(i=0;i<5;i++)
{
try {
Thread.sleep(3000);
} catch (InterruptedException e) {

e.printStackTrace();
}

js.executeScript("window.scrollTo(0,250)", "");
}
js=(JavascriptExecutor)driver;
for(i=0;i<5;i++)
{
try {
Thread.sleep(3000);
} catch (InterruptedException e) {

e.printStackTrace();
}

js.executeScript("window.scrollTo(0,-500)", "");
}

driver.findElement(By.xpath("/html/body/div[3]/div[2]/div[1]/div[1]/h2/a"))
.click();
Thread.sleep(7000);
driver.findElement(By.xpath("/html/body/div[3]/div[3]/div[1]/ul[6]/li[2]/a
")).click();
Thread.sleep(7000);
driver.findElement(By.id("searchSubjects")).sendKeys("baby noah");

}
catch(InterruptedException e)
{
e.printStackTrace();
}
//java search
try {
driver.findElement(By.name("q")).sendKeys("Java Programming");
Thread.sleep(10000);
driver.findElement(By.className("search-bar-submit")).click();
Thread.sleep(7000);
driver.findElement(By.xpath("/html/body/div[3]/div[2]/div[2]/div[3]/div[1]
/ul/li[2]/div[2]/div/div[1]/a[1]")).click();
}
catch(InterruptedException e)
{
e.printStackTrace();
}

}
//k-12 library
public void Browse() {
try
{
Thread.sleep(7000);
}
catch(InterruptedException e)
{

```

```

e.printStackTrace();
}
driver.findElement(By.className("browse-menu-button")).click();
try
{
Thread.sleep(10000);
}
catch(InterruptedException e)
{
e.printStackTrace();
}

driver.findElement(By.xpath("/html/body/header/ul[1]/li[1]/div/ul/li[3]/a"
)).click();
}
public void SponsorBook() {
try
{
Thread.sleep(3000);
}
catch(InterruptedException e) {
e.printStackTrace();
}
driver.findElement(By.className("more-menu-button")).click();
try {
Thread.sleep(7000);
}
catch(InterruptedException e)
{
e.printStackTrace();
}
driver.findElement(By.xpath("/html/body/header/ul[1]/li[2]/div/ul/li[2]/a"
)).click();
}
public void Donate()
{
try
{
Thread.sleep(7000);
}
catch(InterruptedException e) {
e.printStackTrace();
}
driver.findElement(By.xpath("/html/body/div[2]/div/div/div[2]/a")).click()
;

}

public static void main(String[] args) {
OpenLibrary myObj =new OpenLibrary();
myObj.invokeBrowser();
}
}

```

## REFERENCES:

Website : <https://openlibrary.org/>

Selenium tools suite: <https://www.selenium.dev/downloads/>

Chrome Driver: <https://chromedriver.chromium.org/downloads>

For code:

- <https://stackoverflow.com/questions/12293158/page-scroll-up-or-down-in-selenium-webdriver-selenium-2-using-java>

- <https://www.edureka.co/blog/automation-testing-tutorial/>

- <https://www.browserstack.com/guide/wait-commands-in-selenium-webdriver#:~:text=Explicit%20Wait%20in%20Selenium,take%20more%20time%20to%20load.>

- <https://www.browserstack.com/guide/understanding-selenium-timeouts>

- <https://www.edureka.co/community/54232/descriptor-selenium-selenium-standalone-provider-bsfmanager>