



American International University-Bangladesh (AIUB)

**Department of Computer Science Faculty of Science & Technology (FST) Summer
23-24**

Section: A

Software Quality Assurance and Testing

Automation Testing with Selenium

A Report submitted

By

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1. Install Selenium WebDriver and Mocha:

Selenium and Mocha are tools designed for testing purposes:

- **Selenium:** A web testing framework used for automating web browsers. It is commonly used for testing web applications and automating web tasks.
- **Mocha:** A JavaScript test framework that runs on Node.js, designed for testing asynchronous code. It is typically used for unit testing in software development.

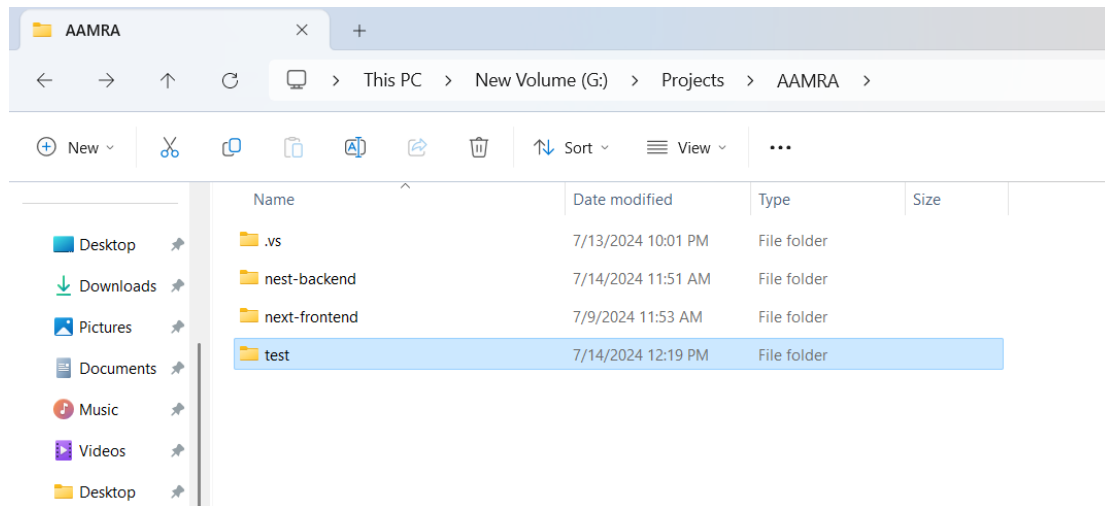


Figure1: create folder called “test”

Step1: Create a new folder in any drive. (the test folder is created inside the project directory)

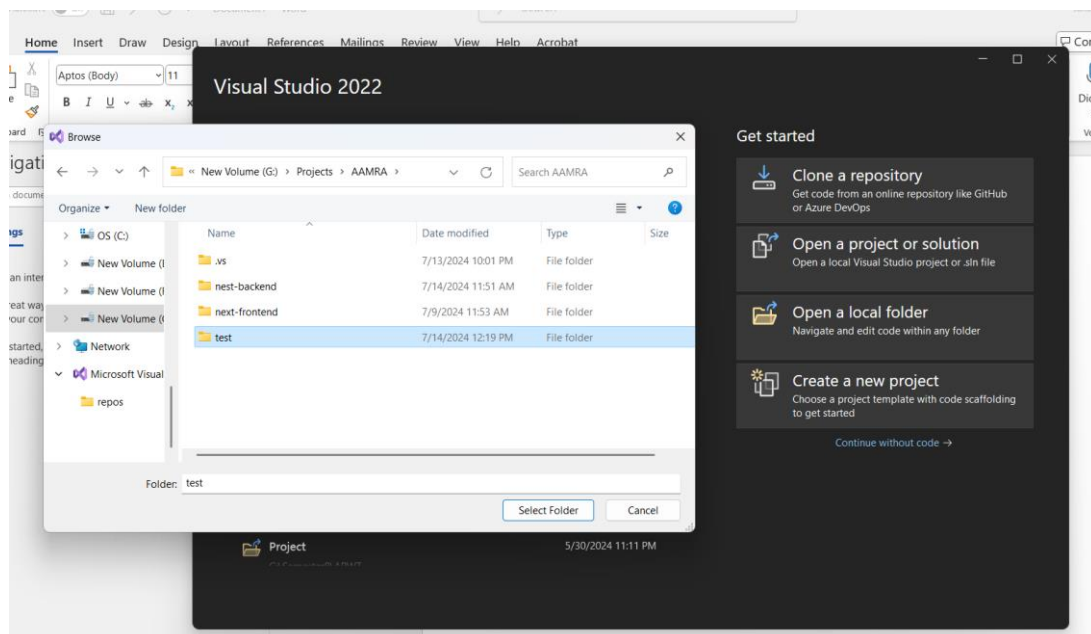


Figure2: test folder is opened in VS code

Step2: Open the folder in VS code

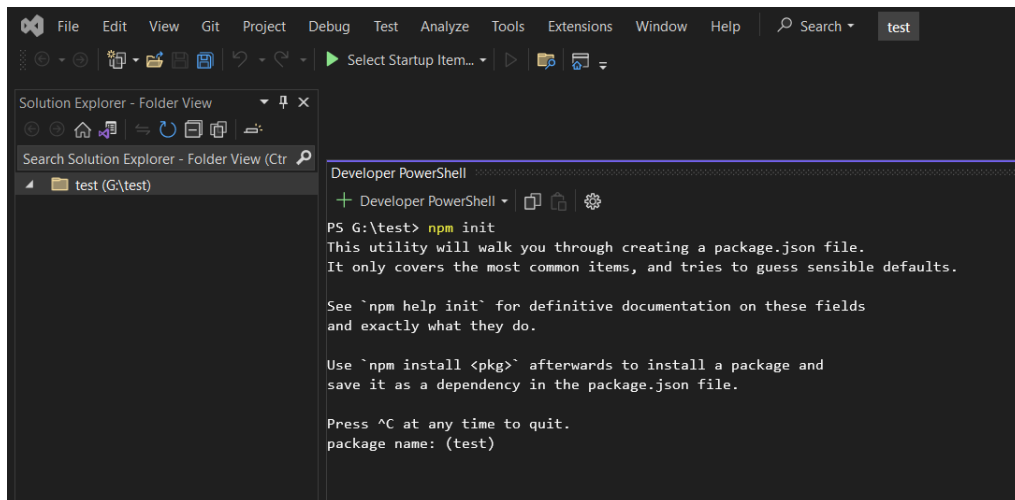


Figure3: initializing the test folder

Step3: Open the folder in the terminal and run “*npm init*” command to initialize the program. There will be some information about authentication and dependencies which it is optional to be filled in. A description and git repository can be assigned there.

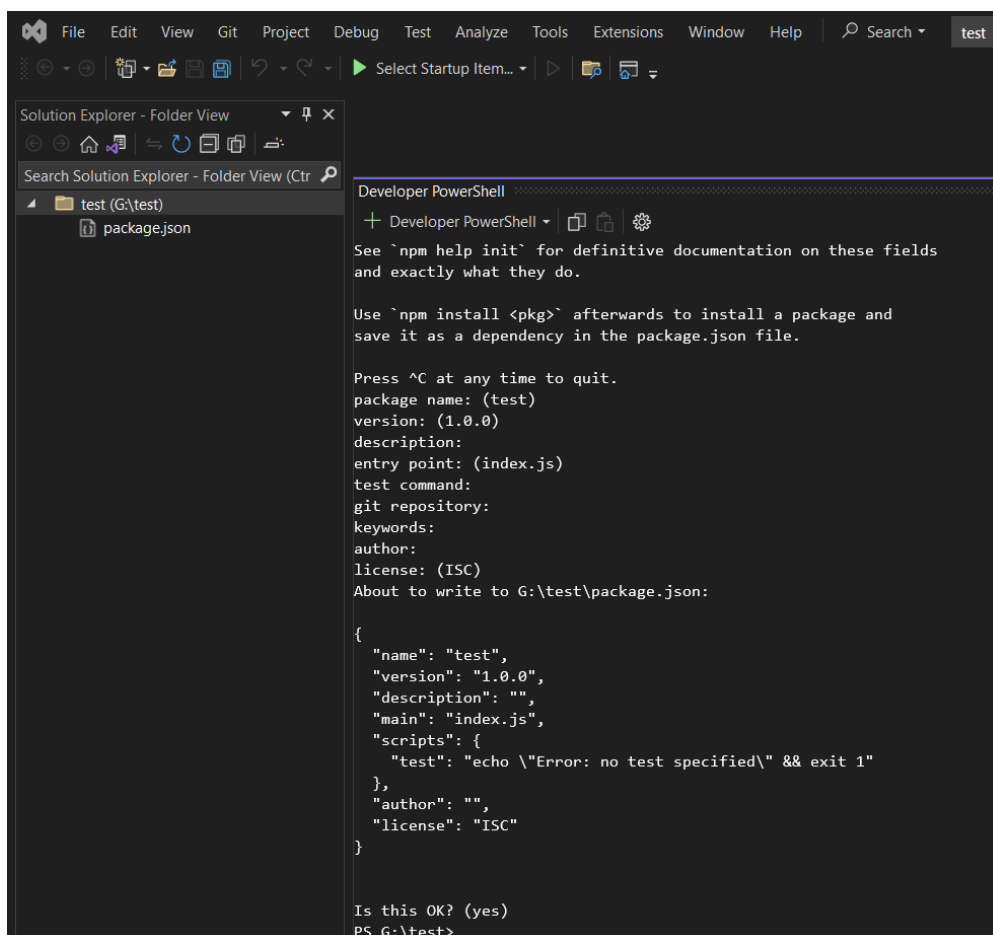


Figure4: package.json file is created

It will create a JSON file after confirming the initialization.

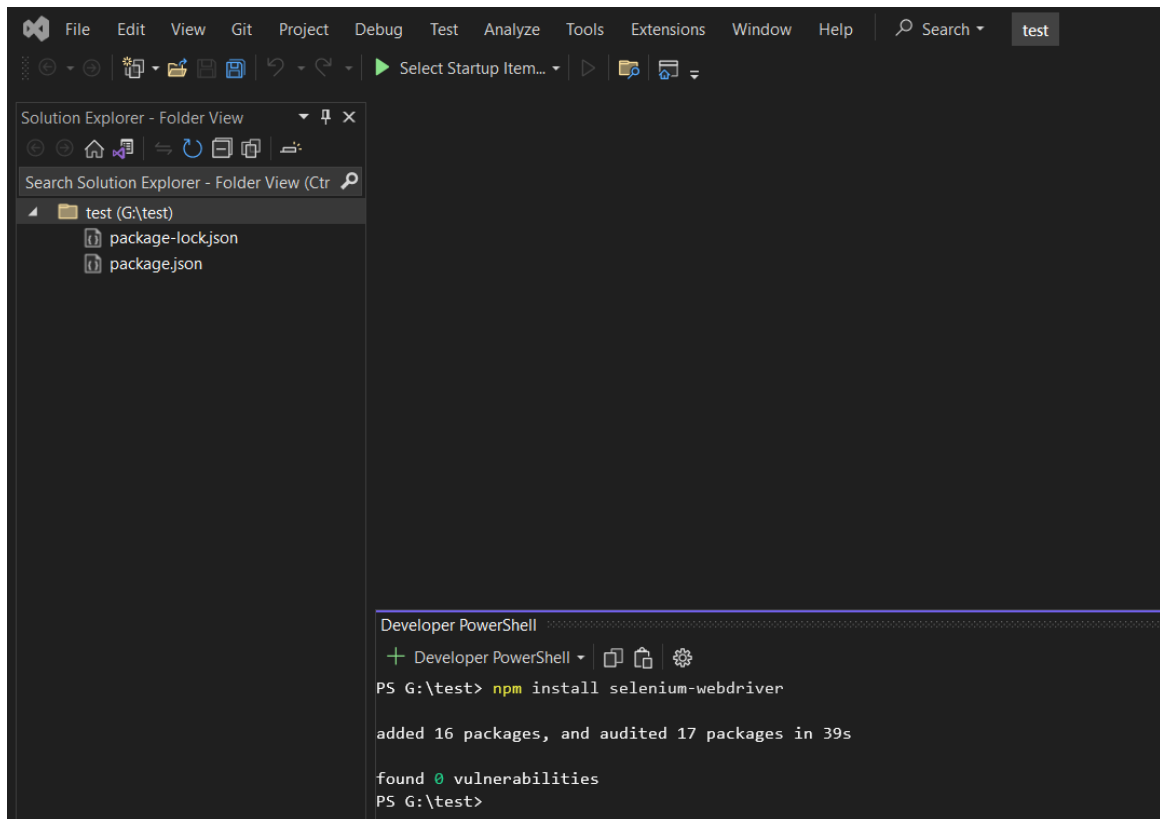


Figure5: installation of selenium web-driver

Step4: Install selenium-webdriver by the command “*npm install selenium-webdriver*”. A detailed documentation for installation can be found at: [selenium-webdriver - npm \(npmjs.com\)](https://npmjs.com/package/selenium-webdriver).

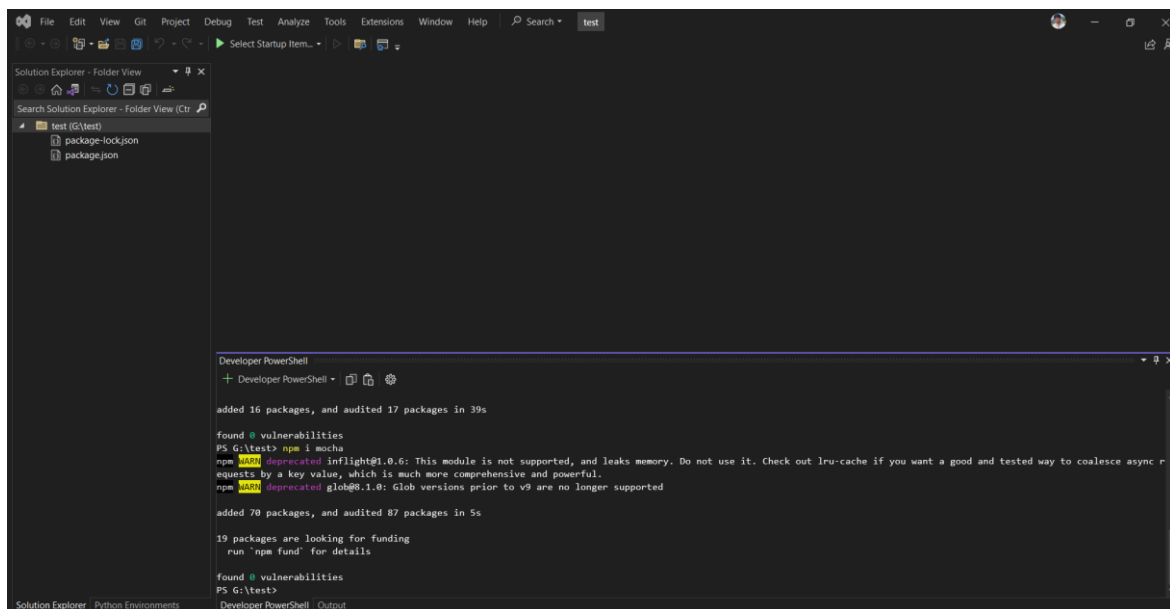


Figure6: installation of mocha

Step5: Install a node package mocha by the command “*npm install mocha*”. A detailed documentation can be found at: [mocha - npm \(npmjs.com\)](https://npmjs.com/package/mocha).

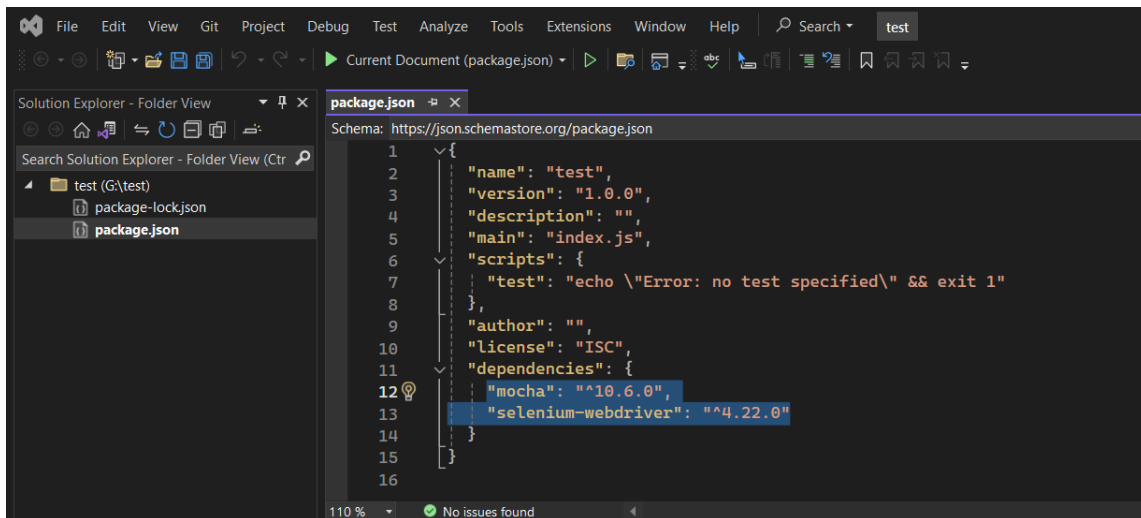


Figure7: dependencies are added after installing

To confirm the installation, check the JSON file and find the dependencies. If the dependencies are added, then both selenium web-driver and mocha are installed successfully.

2. Test NodeJS project:

Step1: select a NodeJS project and start the project.

It can be done by opening the backend and frontend folder in the terminal. In the backend folder terminal write command “***npm run start:dev***” and in the frontend folder write command “***npm run dev***” to start the project.

Step2: Identify all input, button, and other action tag elements by their ids to test.

It can be done by opening the local host in the browser and selecting the action elements in inspect mode.

Step3: Write the code for the elements to be tested.

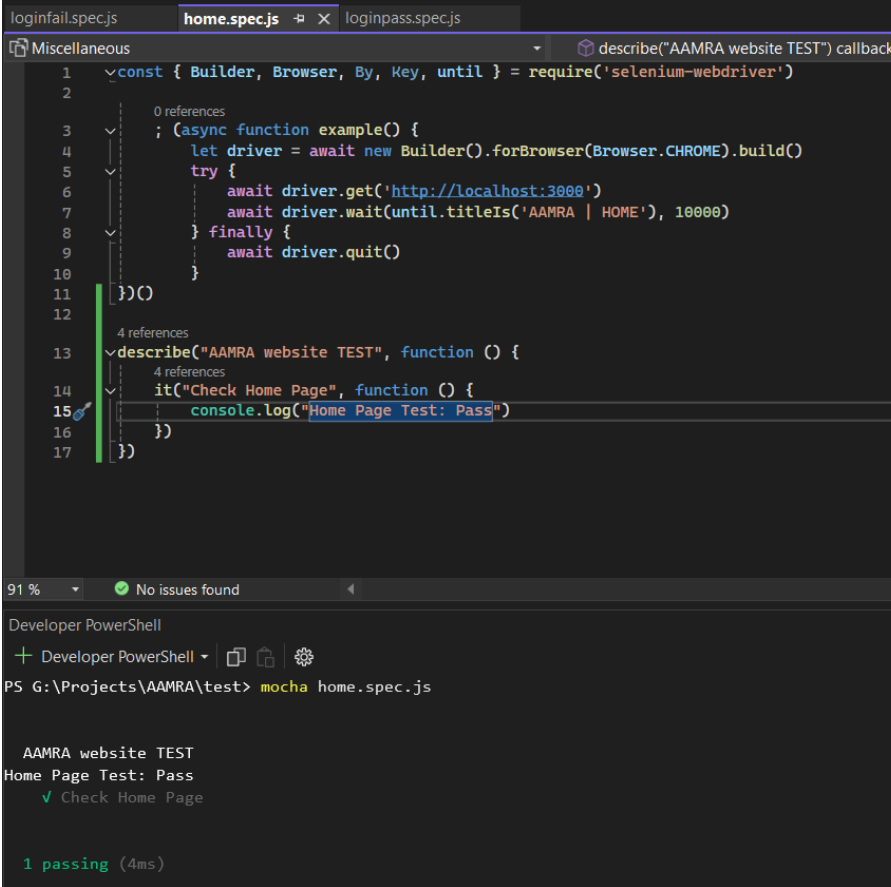
Step4: Open the test folder in the terminal and run command “***npx mocha filename***” or “***mocha filename***”

Write the ***filename*** i.e. [***home.spec.js***](#) individually to test the functionality.

It is to notify that mocha can test any website in different browsers and the process of testing the input and action elements are extremely fast and flexible. In this case of testing, the whole project is not tested at once, rather the pages are tested individually after creating the test cases for some selected functions (unit testing). However, the project's eternity can be tested by combining the code in a single file and running it. As this testing task is divided among the group members, it is simpler to write the code in parts by all the individuals.

3. Test Cases and results:

3.1. Testing the project home page:



```
loginfail.spec.js  home.spec.js  loginpass.spec.js
Miscellaneous describe("AAMRA website TEST") callback
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  0 references
4  ; (async function example() {
5    let driver = await new Builder().forBrowser(Browser.CHROME).build()
6    try {
7      await driver.get('http://localhost:3000')
8      await driver.wait(until.titleIs('AAMRA | HOME'), 10000)
9    } finally {
10     await driver.quit()
11   }
12 }
13 4 references
14 describe("AAMRA website TEST", function () {
15   4 references
16   it("Check Home Page", function () {
17     console.log("Home Page Test: Pass")
18   })
19 })
```

91 % No issues found

Developer PowerShell

PS G:\Projects\AAMRA\test> mocha home.spec.js

AAMRA website TEST
Home Page Test: Pass
✓ Check Home Page

1 passing (4ms)

Figure8: code and result for home page

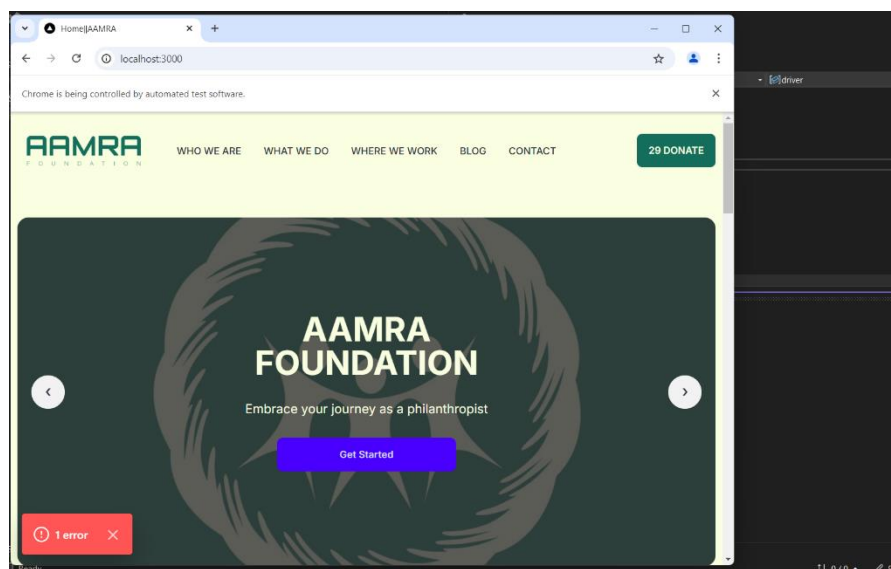


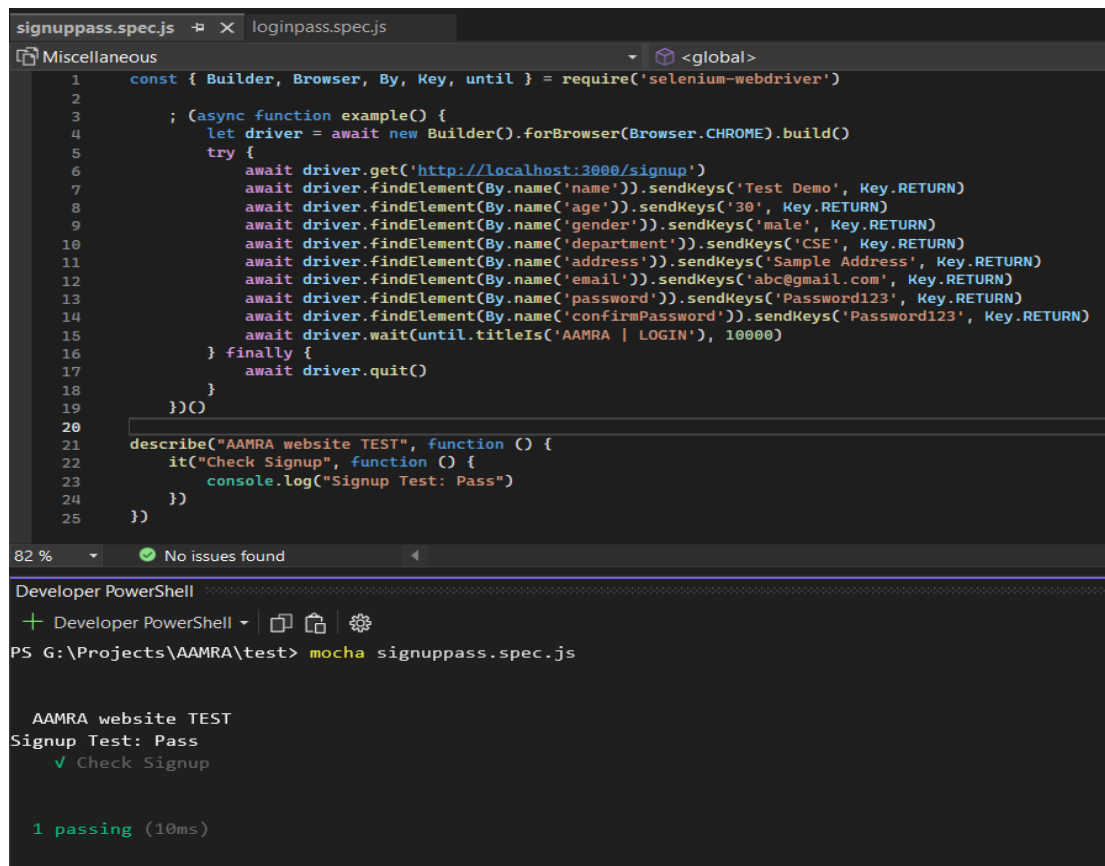
Figure9: output of the test

3.2. Signup

3.2.1. Signup: Pass

Passed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_1		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): High		Test Executed by: Nokibul Arfin Siam		
Module Name: User Registration		Test Execution date: 10/07/24		
Test Title: User Registration- Successful Signup with valid credentials				
Description: To verify users after successful registration				
Precondition: Must not registered before with an existing email address				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter name, age, gender, department, address, email, password, confirm password 3. Click Signup	Name: Test Demo Age: 30 Gender: male Department: CSE Address: Sample Address Email: abc@gmail.com Password: Password123 Confirm Password: Password123	Registration Successful	Registration Successful	Pass
Post Condition: User can login and a profile will be created for the user				



The image shows a screenshot of a development environment with two panels. The top panel is a code editor showing a Selenium test script in `signuppasse.spec.js`. The script uses `selenium-webdriver` to interact with a web browser, filling out a registration form with test data and clicking the 'Signup' button. It includes `describe` and `it` blocks for test organization. The bottom panel is a terminal window showing the command `mocha signuppasse.spec.js` being executed. The output displays the test results: 'AAMRA website TEST', 'Signup Test: Pass', and '1 passing (10ms)'.

```
signuppasse.spec.js  x loginpass.spec.js
Miscellaneous
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  ; (async function example() {
4    let driver = await new Builder().forBrowser(Browser.CHROME).build()
5    try {
6      await driver.get('http://localhost:3000/signup')
7      await driver.findElement(By.name('name')).sendKeys('Test Demo', Key.RETURN)
8      await driver.findElement(By.name('age')).sendKeys('30', Key.RETURN)
9      await driver.findElement(By.name('gender')).sendKeys('male', Key.RETURN)
10     await driver.findElement(By.name('department')).sendKeys('CSE', Key.RETURN)
11     await driver.findElement(By.name('address')).sendKeys('Sample Address', Key.RETURN)
12     await driver.findElement(By.name('email')).sendKeys('abc@gmail.com', Key.RETURN)
13     await driver.findElement(By.name('password')).sendKeys('Password123', Key.RETURN)
14     await driver.findElement(By.name('confirmPassword')).sendKeys('Password123', Key.RETURN)
15     await driver.wait(until.titleIs('AAMRA | LOGIN'), 10000)
16   } finally {
17     await driver.quit()
18   }
19 })()
20
21 describe("AAMRA website TEST", function () {
22   it("Check Signup", function () {
23     console.log("Signup Test: Pass")
24   })
25 })

82 %  No issues found

Developer PowerShell
+ Developer PowerShell
PS G:\Projects\AAMRA\test> mocha signuppasse.spec.js

AAMRA website TEST
Signup Test: Pass
  ✓ Check Signup

1 passing (10ms)
```


Figure10: code and result for Signup page: Passed

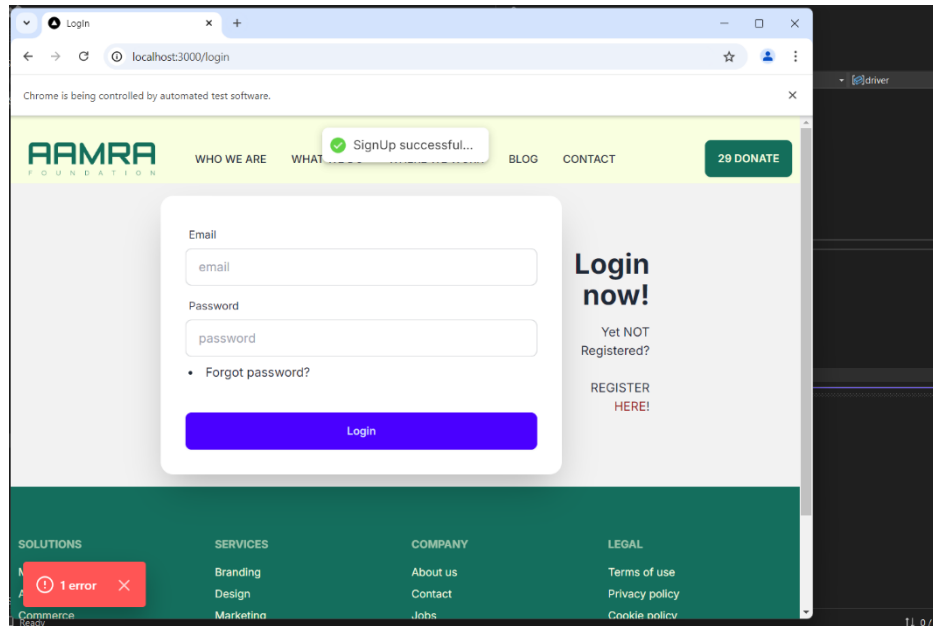


Figure11: output of the test

3.2.2. Signup: Fail

Failed test case (Validation Error):

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_2		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): High		Test Executed by: Nokibul Arfin Siam		
Module Name: User Registration		Test Execution date: 10/07/24		
Test Title: User Registration- Successful Signup with valid credentials				
Description: To verify users after successful registration				
Precondition: Must not registered before with an existing email address				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter name, age, gender, department, address, email, password, confirm password 3. Click Signup	Name: Test Demo Age: -30 Gender: male Department: CSE Address: Sample Address Email: abc2@gmail.com Password: Password123 Confirm Password: Password123	Registration Unsuccessful	Registration Unsuccessful	Fail
Post Condition: Users need to correct the input value and Signup again				

```
loginfail.spec.js  signupfail.spec.js  signuppass.spec.js  loginpass.spec.js
Miscellaneous describe("AAMRA website TEST") callback
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  0 references
4  (async function example() {
5    let driver = await new Builder().forBrowser(Browser.CHROME).build()
6    try {
7      await driver.get('http://localhost:3000/signup')
8      await driver.findElement(By.name('name')).sendKeys('Test Demo', Key.RETURN)
9      await driver.findElement(By.name('age')).sendKeys('-30', Key.RETURN)
10     await driver.findElement(By.name('gender')).sendKeys('male', Key.RETURN)
11     await driver.findElement(By.name('department')).sendKeys('CSE', Key.RETURN)
12     await driver.findElement(By.name('address')).sendKeys('Sample Address', Key.RETURN)
13     await driver.findElement(By.name('email')).sendKeys('abc@gmail.com', Key.RETURN)
14     await driver.findElement(By.name('password')).sendKeys('Password123', Key.RETURN)
15     await driver.findElement(By.name('confirmPassword')).sendKeys('Password123', Key.RETURN)
16     await driver.wait(until.titleIs('AAMRA | LOGIN'), 10000)
17   } finally {
18     await driver.quit()
19   }
20 })()
21 4 references
22 describe("AAMRA website TEST", function () {
23   4 references
24   it("Check Signup", function () {
25     console.log("Signup Test: Fail")
26     throw Error("Test Failed: age can not be negative value!")
27   })
28 })
```

74 % No issues found

Developer PowerShell

+ Developer PowerShell

1 failing

1) AAMRA website TEST

Check Signup:

Error: Test Failed: age can not be negative value!

at Context.<anonymous> (signupfail.spec.js:24:15)

at process.processImmediate (node:internal/timers:478:21)

Figure12: code and result for Signup page: Failed (age validation)

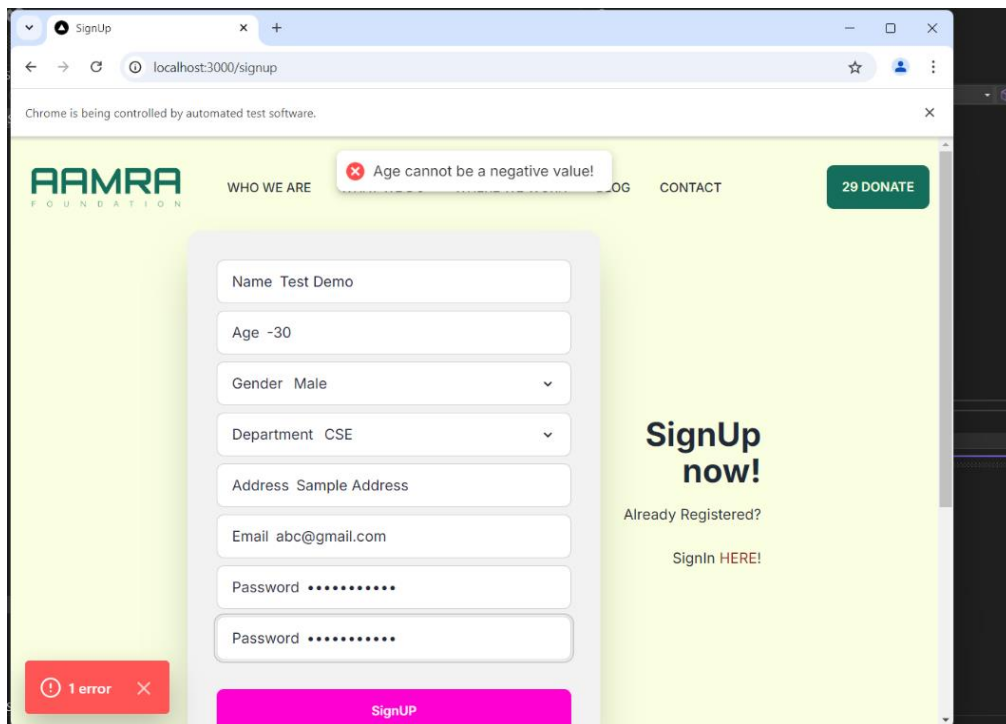


Figure13: output of the test

Failed test case (Already Registered Error):

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_3		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): High		Test Executed by: Nokibul Arfin Siam		
Module Name: User Registration		Test Execution date: 10/07/24		
Test Title: User Registration- Successful Signup with valid credentials				
Description: To verify users after successful registration				
Precondition: Must not registered before with an existing email address				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter name, age, gender, department, address, email, password, confirm password 3. Click Signup	Name: Test Demo Age: 30 Gender: male Department: CSE Address: Sample Address Email: abc@gmail.com Password: Password123 Confirm Password: Password123	Registration Unsuccessful	Registration Unsuccessful	Fail
Post Condition: Users need to provide an unregistered email and signup again				

```

loginfail.spec.js  signupfail.spec.js  signuppasse.spec.js  loginpass.spec.js
Miscellaneous
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  (async function example() {
4    let driver = await new Builder().forBrowser(Browser.CHROME).build()
5    try {
6      await driver.get('http://localhost:3000/signup')
7      await driver.findElement(By.name('name')).sendKeys('Test Demo', Key.RETURN)
8      await driver.findElement(By.name('age')).sendKeys('30', Key.RETURN)
9      await driver.findElement(By.name('gender')).sendKeys('male', Key.RETURN)
10     await driver.findElement(By.name('department')).sendKeys('CSE', Key.RETURN)
11     await driver.findElement(By.name('address')).sendKeys('Sample Address', Key.RETURN)
12     await driver.findElement(By.name('email')).sendKeys('abc@gmail.com', Key.RETURN)
13     await driver.findElement(By.name('password')).sendKeys('Password123', Key.RETURN)
14     await driver.findElement(By.name('confirmPassword')).sendKeys('Password123', Key.RETURN)
15     await driver.wait(until.titleIs('AAMRA | LOGIN'), 10000)
16   } finally {
17     await driver.quit()
18   }
19 })
20
21 describe("AAMRA website TEST", function () {
22   it("Check Signup", function () {
23     console.log("Signup Test: Fail")
24     throw Error("Test Failed: The provided email is already registered!")
25   })
26 })
74 %  No issues found

Developer PowerShell
+ Developer PowerShell
1 failing

1) AAMRA website TEST
  Check Signup:
    Error: Test Failed: The provided email is already registered!
    at Context.<anonymous> (signupfail.spec.js:24:15)
    at process.processImmediate (node:internal/timers:478:21)
  
```

Figure14: code and result for Signup page: Failed (existing mail)

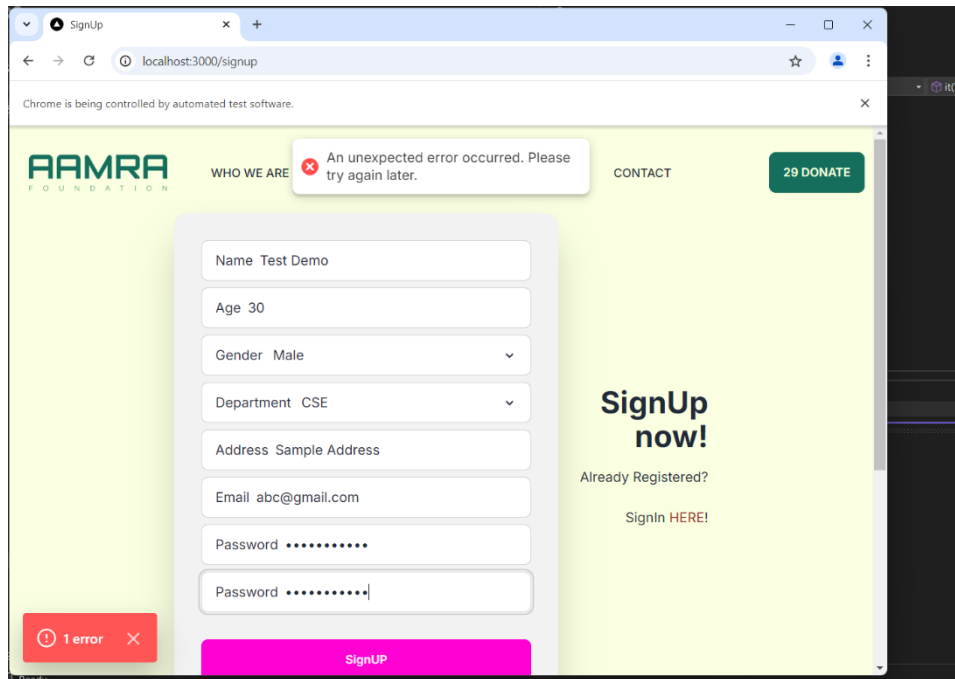


Figure15: output of the test

3.3. Login

3.3.1. Login: Pass

Passed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_4		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Medium		Test Executed by: Mahamoda Akter		
Module Name: User Login		Test Execution date: 12/07/24		
Test Title: Successful user login				
Description: Users should login to the site if the users are valid				
Precondition: Must Register to the site				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Emter email and password 3. Click Login	Email: sahadul80@gmail.com Password: Password123	Login successful	Login successful	Pass
Post Condition: Users should be able to view their profile dashboard				

```
loginfail.spec.js  home.spec.js  loginpass.spec.js  X
Miscellaneous  <global>
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  ; (async function example() {
4    let driver = await new Builder().forBrowser(Browser.CHROME).build()
5    try {
6      await driver.get('http://localhost:3000/login')
7      await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN)
8      await driver.findElement(By.name('password')).sendKeys('Password123', Key.RETURN)
9      await driver.wait(until.titleIs('Index | EducationAssistant'), 10000)
10   } finally {
11     await driver.quit()
12   }
13 })()
14
15 describe("AAMRA website TEST", function () {
16   it("Check Login", function () {
17     console.log("Login Test: Pass")
18   })
19 })
```

91 % No issues found

Developer PowerShell

+ Developer PowerShell Copy Paste Settings

AAMRA website TEST
Login Test: Pass
✓ Check Login

1 passing (5ms)

DevTools listening on ws://127.0.0.1:64831/devtools/browser/ade30743-1af9-4965-8c84-c693851b100b
PS G:\Projects\AAMRA\test>

Developer PowerShell Output

Figure16: code and result for login page: Passed

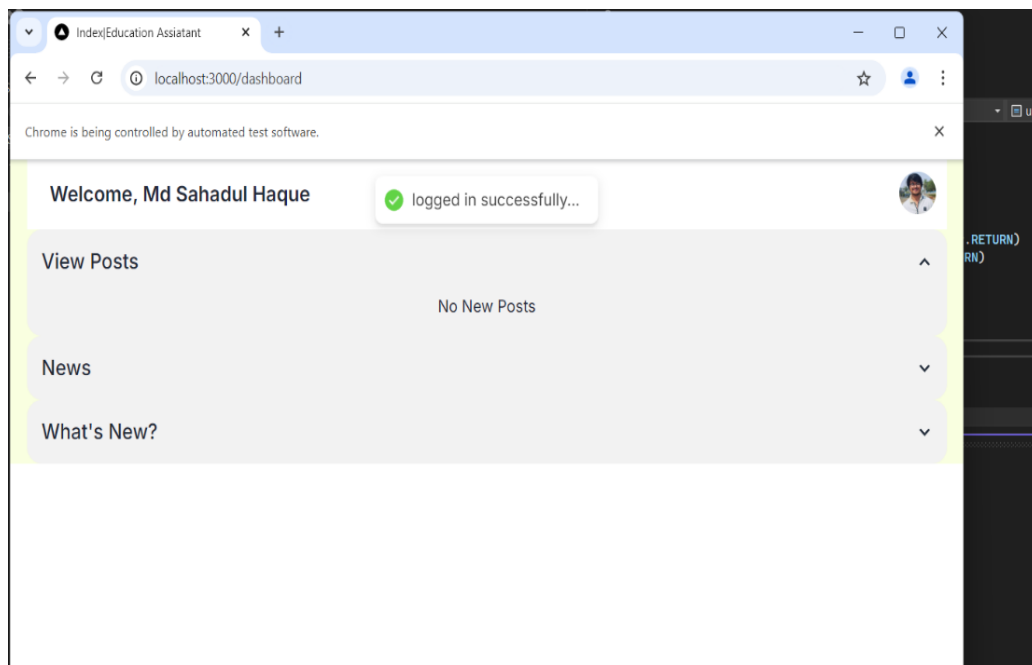


Figure17: output of the test

3.3.2. Login: Fail

Failed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque			
Test Case: FR_5		Test Design date: 01/07/2024			
Test Priority (Low, Medium, High): Medium		Test Executed by: Mahamoda Akter			
Module Name: User Login		Test Execution date: 12/07/24			
Test Title: Successful user login					
Description: Users should login to the site if the users are valid					
Precondition: Must Register to the site					
Dependencies: None					
Test Steps		Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site		Email:	Login unsuccessful	Login unsuccessful	Fail
2. Emter email and password		sahadul80@gmail.com			
3. Click Login		Password: Password125			
Post Condition: Users should not be able to procced and need to login with valid credentials or forget password					

```
loginfail.spec.js  x  home.spec.js  loginpass.spec.js
Miscellaneous
1  const { Builder, Browser, By, Key, until, error } = require('selenium-webdriver')
2
3  0 references
4  ; (async function example() {
5    let driver = await new Builder().forBrowser(Browser.CHROME).build()
6    try {
7      await driver.get('http://localhost:3000/login')
8      await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN)
9      await driver.findElement(By.name('password')).sendKeys('Password125', Key.RETURN)
10     await driver.wait(until.titleIs('Index | EducationAssistant'), 10000)
11   } finally {
12     await driver.quit()
13   }
14 }
15 4 references
16 describe("AAMRA website TEST", function () {
17   4 references
18   it("Check Login", function () {
19     console.log("Login Test: Failed")
20     throw Error("Test Failed!")
21   })
22 })
68 %  No issues found
Developer PowerShell
+ Developer PowerShell
DevTools listening on ws://127.0.0.1:64831/devtools/browser/ade30743-1af9-4965-8c84-c693851b100b
PS G:\Projects\AAMRA\test> mocha loginfail.spec.js

AAMRA website TEST
Login Test: Failed
  1) Check Login

0 passing (9ms)
1 failing

1) AAMRA website TEST
    Check Login:
      Error: Test Failed!
        at Context.<anonymous> (loginfail.spec.js:18:15)
        at process.processImmediate (node:internal/timers:478:21)
```

Figure18: code and result for login page: Failed

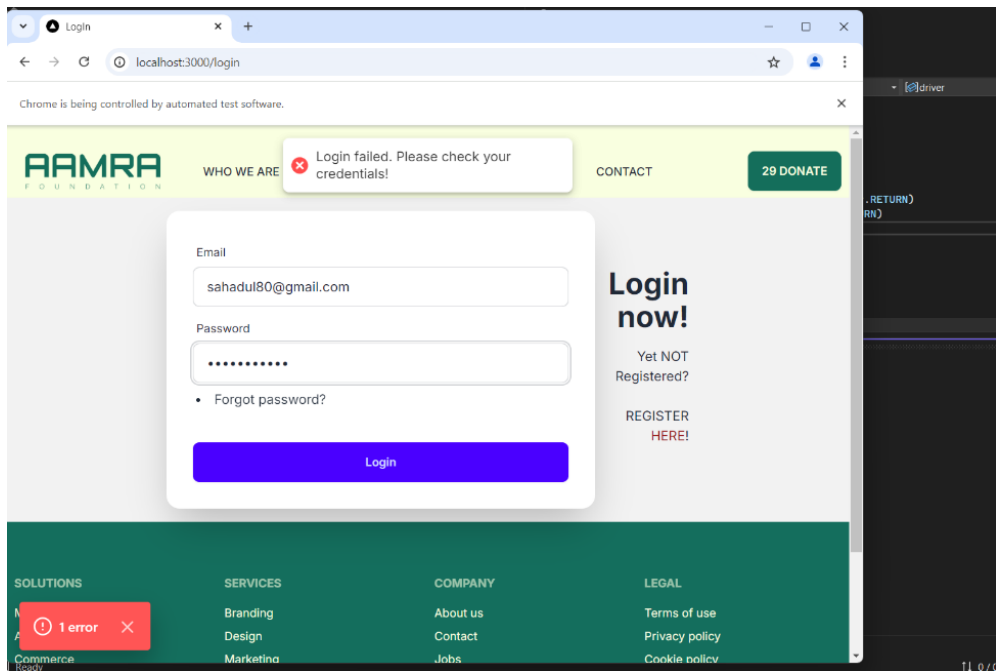


Figure19: output of the test

3.4. Forget Password

3.4.1. Forget Password: Pass

Passed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_6		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Medium		Test Executed by: Jahir Islam		
Module Name: Forget password		Test Execution date: 21/07/2024		
Test Title: recover the user profile				
Description: Request to login after forgetting the password				
Precondition: must be an existing user of the site				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter valid email address 3. Click submit	Email: sahadul80@gmail.com	An email is sent to reset the password.	Email is sent	pass
Post Condition: A reset code with a link will be sent the email to change the old password				

```
fppass.spec.js x loginfail.spec.js signupfail.spec.js signuppss.spec.js loginpass.spec.js
Miscellaneous example
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  ; (async function example() {
4    let driver = await new Builder().forBrowser(Browser.CHROME).build()
5    try {
6      await driver.get('http://localhost:3000/forgetpassword')
7      await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN)
8      await driver.wait(until.titleIs('Login | AAMRA'), 50000)
9    } finally {
10     await driver.quit()
11   }
12 }
13
14 describe("AAMRA website TEST", function () {
15   it("Check Forget Password", function () {
16     console.log("Forget Password: Pass")
17   })
18 })

90 % No issues found

Developer PowerShell
+ Developer PowerShell | |
PS G:\Projects\AAMRA\test> mocha fppass.spec.js

AAMRA website TEST
Forget Password: Pass
  ✓ Check Forget Password

1 passing (4ms)

DevTools listening on ws://127.0.0.1:57912/devtools/browser/c9739037-5054-419b-b6f9-4b5bcae4071a
PS G:\Projects\AAMRA\test>
```

Figure20: code and result for forget password: Pass

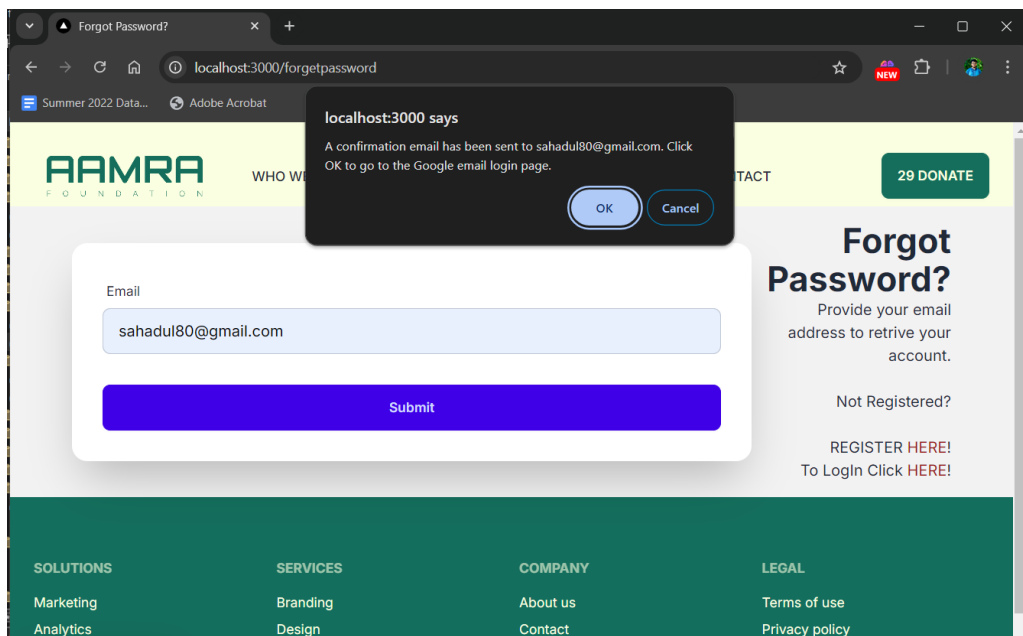


Figure21: output of the test

3.4.2. Forget Password: Fail

Failed test case

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_7		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Medium		Test Executed by: Jahir Islam		
Module Name: Forget password		Test Execution date: 21/07/2024		
Test Title: recover the user profile				
Description: Request to login after forgetting the password				
Precondition: must be an existing user of the site				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter valid email address 3. Click submit	Email: sahadul@gmail.com	Email is not found at the server	Email sending failure	fail
Post Condition: Asking to enter email valid email address				

The screenshot displays a code editor with a test script in `fpfail.spec.js` and a terminal window showing the execution results. The code defines an `example` function and a `describe` block for 'AAMRA website TEST'. Inside the `it` block 'Check Forget Password', it logs 'Forget Password: failed' and throws an `Error('Test Failed!')`. The terminal output shows 'AAMRA website TEST' and 'Forget Password: failed', followed by a summary: '0 passing (5ms)' and '1 failing'. The failing test is detailed as '1) AAMRA website TEST' with the error 'Error: Test Failed!' at the specified line in the code.

```
1 const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3
4 ; (async function example() {
5   let driver = await new Builder().forBrowser(Browser.CHROME).build()
6   try {
7     await driver.get('http://localhost:3000/forgetpassword')
8     await driver.findElement(By.name('email')).sendKeys('sahadul@gmail.com', Key.RETURN)
9     await driver.wait(until.titleIs('Login | AAMRA'), 10000)
10   } finally {
11     await driver.quit()
12   }
13 })()
14
15 describe("AAMRA website TEST", function () {
16   it("Check Forget Password", function () {
17     console.log("Forget Password: failed")
18     throw Error("Test Failed!")
19   })
20 })
```

90 % No issues found

Developer PowerShell

+ Developer PowerShell

AAMRA website TEST

Forget Password: failed

1) Check Forget Password

0 passing (5ms)

1 failing

1) AAMRA website TEST

Check Forget Password:

Error: Test Failed!

at Context.<anonymous> (fpfail.spec.js:17:15)

at process.processImmediate (node:internal/timers:478:21)

Figure22: code and result for forget password: Failed

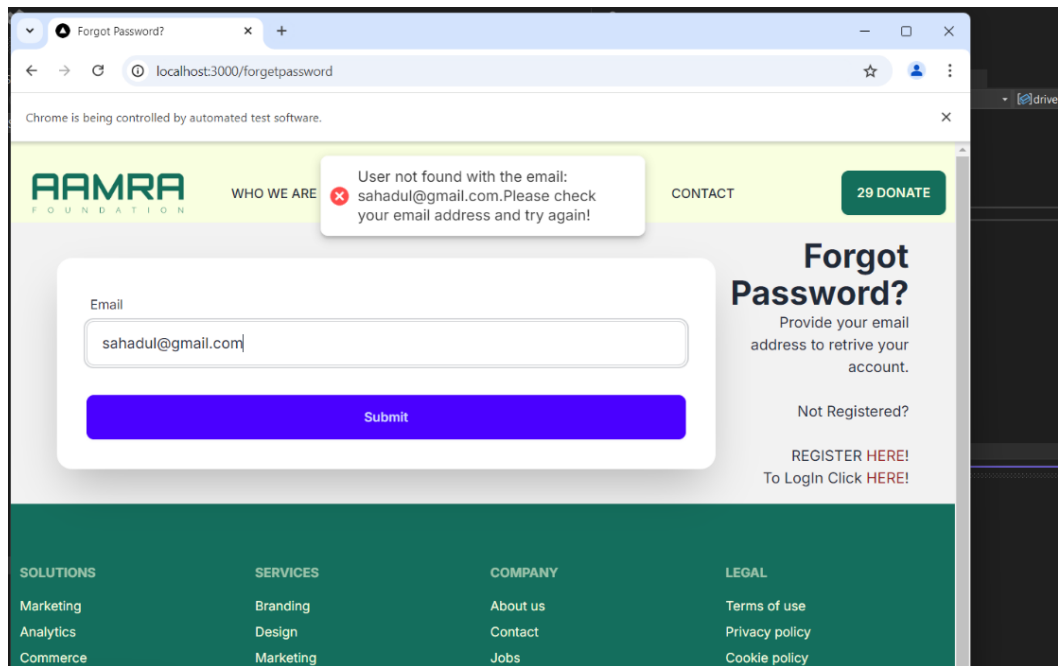


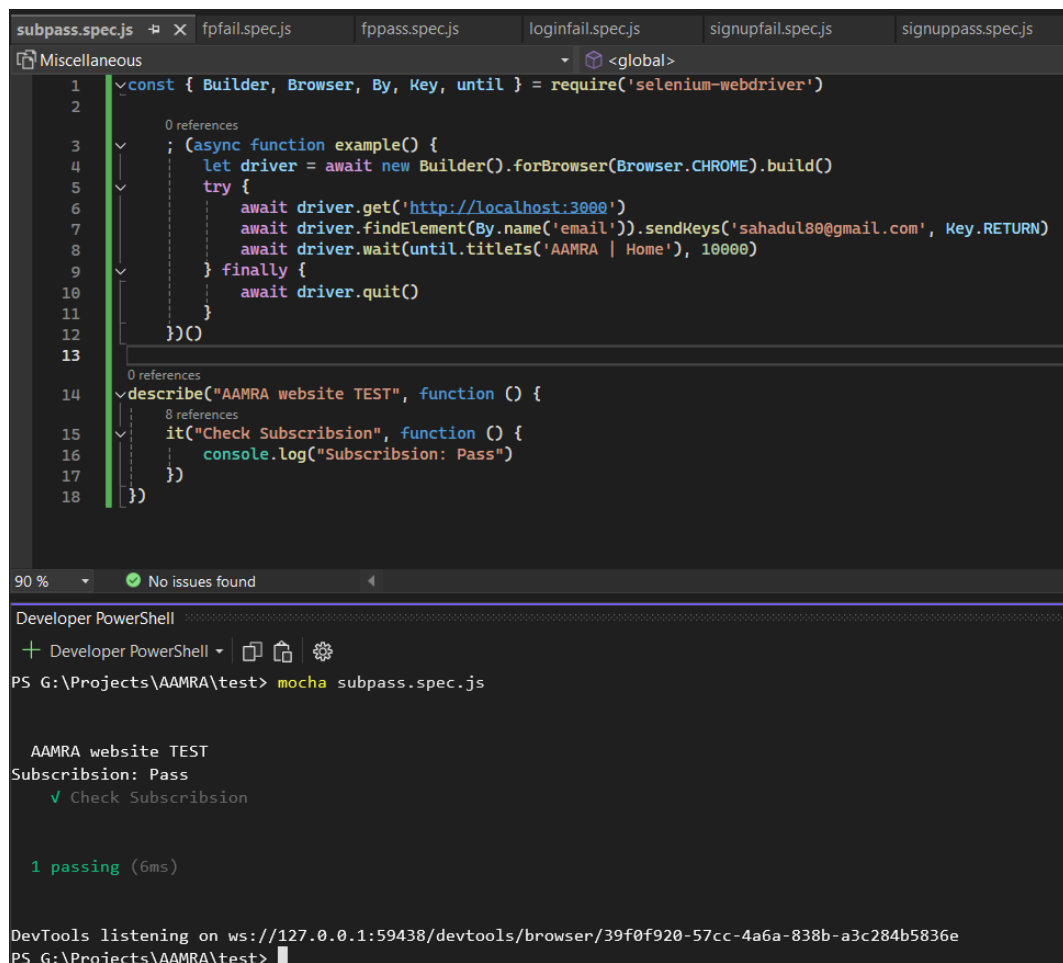
Figure23: output of the test

3.5. Subscribe

3.5.1. Subscribe: Pass

Passed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_8		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Low		Test Executed by: Md Sahadul Haque		
Module Name: Subscribe		Test Execution date: 21/07/2024		
Test Title: subscribe to the site				
Description: user should get push updates from the site				
Precondition: visit the site but not a user				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter valid email address 3. Click submit	Email: sahadul80@gmail.com	An email is sent to confirm subscription	Email is sent	pass
Post Condition: A welcome message will be sent the email to change the old password				



The image shows a VS Code editor with several tabs: `subpass.spec.js`, `fpfail.spec.js`, `fppass.spec.js`, `loginfail.spec.js`, `signupfail.spec.js`, and `signuppass.spec.js`. The `subpass.spec.js` file is open, showing the following code:

```
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  ; (async function example() {
4    let driver = await new Builder().forBrowser(Browser.CHROME).build()
5    try {
6      await driver.get('http://localhost:3000')
7      await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN)
8      await driver.wait(until.titleIs('AAMRA | Home'), 10000)
9    } finally {
10     await driver.quit()
11   }
12 }
13
14 describe("AAMRA website TEST", function () {
15   it("Check Subscripsion", function () {
16     console.log("Subscripsion: Pass")
17   })
18 })
```

Below the editor, a terminal window shows the command `PS G:\Projects\AAMRA\test> mocha subpass.spec.js` and its output:

```
AAMRA website TEST
Subscripsion: Pass
  ✓ Check Subscripsion

1 passing (6ms)
```

At the bottom of the terminal, it says: `DevTools listening on ws://127.0.0.1:59438/devtools/browser/39f0f920-57cc-4a6a-838b-a3c284b5836e` and `PS G:\Projects\AAMRA\test>`

Figure24: code and result for subscribe: Passed

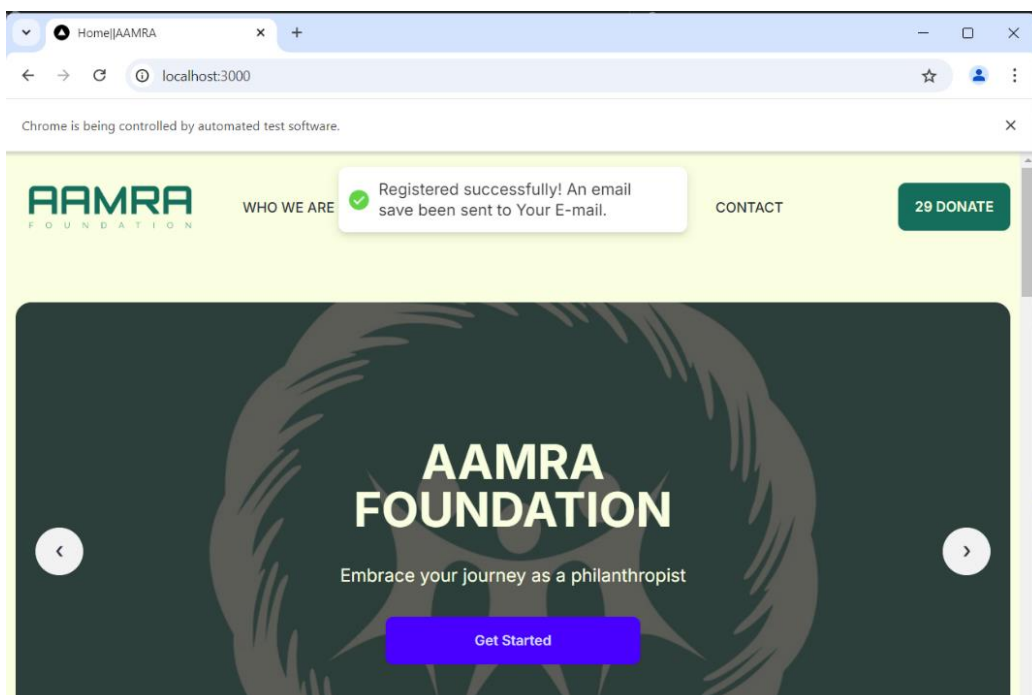
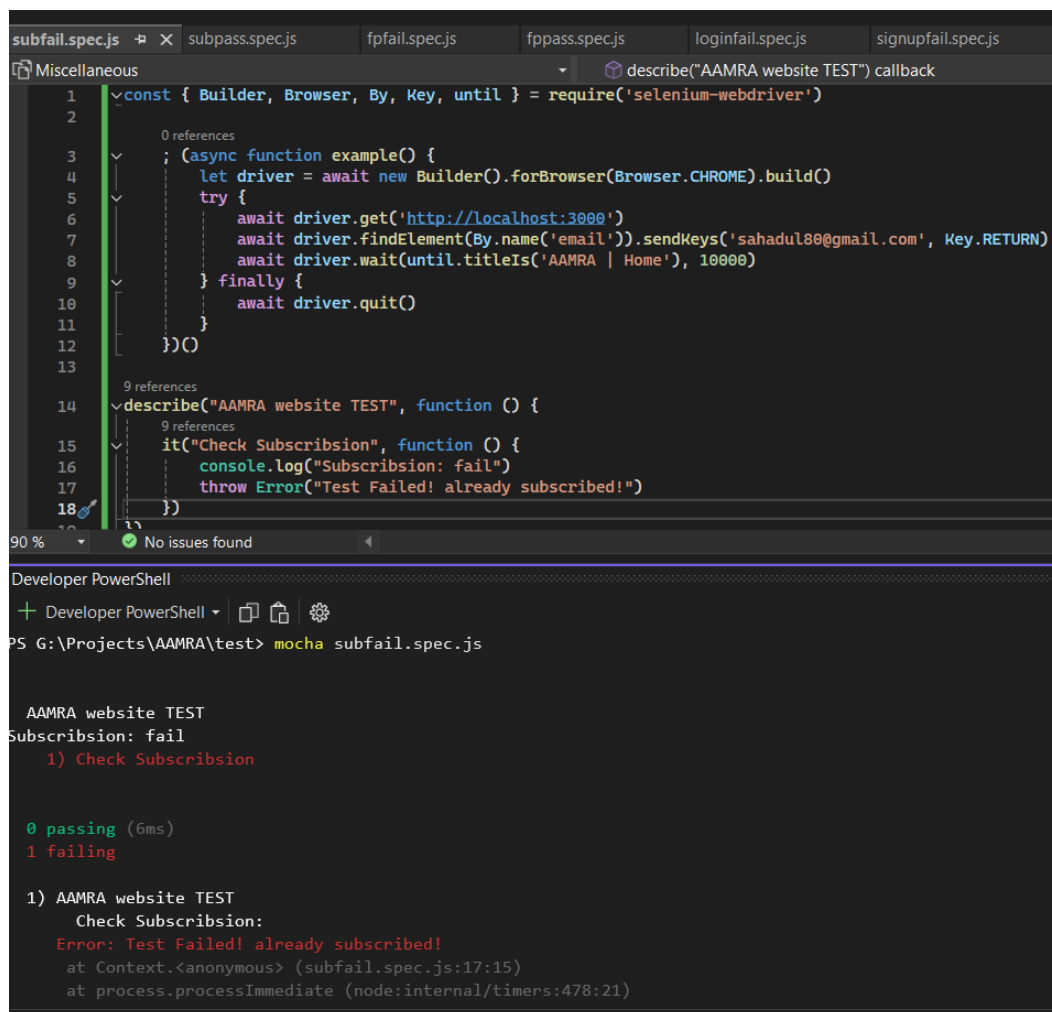


Figure25: output of the test

3.5.2. Subscribe: Fail

Failed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_9		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Low		Test Executed by: Md Sahadul Haque		
Module Name: Subscribe		Test Execution date: 21/07/2024		
Test Title: subscribe to the site				
Description: user should get push updates from the site				
Precondition: visit the site but not a user				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the site 2. Enter valid email address 3. Click submit	Email: sahadul80@gmail.com	An email is sent to confirm subscription already exists.	Email sending failure	fail
Post Condition: stays at homepage with warning				



The screenshot displays a code editor with a JavaScript file named `subfail.spec.js`. The code defines a test suite for 'AAMRA website TEST' using Mocha and Selenium WebDriver. It includes a function `example()` that attempts to perform a subscription. The test suite contains a single test case, 'Check Subscribsion', which is expected to fail. The terminal output shows the test results: 'AAMRA website TEST', 'Subscribsion: fail', '1) Check Subscribsion', '0 passing (6ms)', '1 failing', and a detailed error message: 'Error: Test Failed! already subscribed!'.

```
subfail.spec.js x subpass.spec.js fpfail.spec.js fppass.spec.js loginfail.spec.js signupfail.spec.js
Miscellaneous describe("AAMRA website TEST") callback
1 const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3 ; (async function example() {
4   let driver = await new Builder().forBrowser(Browser.CHROME).build()
5   try {
6     await driver.get('http://localhost:3000')
7     await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN)
8     await driver.wait(until.titleIs('AAMRA | Home'), 10000)
9   } finally {
10    await driver.quit()
11  }
12 })()
13
14 describe("AAMRA website TEST", function () {
15   it("Check Subscribsion", function () {
16     console.log("Subscribsion: fail")
17     throw Error("Test Failed! already subscribed!")
18   })
19 })
```

90 % No issues found

Developer PowerShell

PS G:\Projects\AAMRA\test> mocha subfail.spec.js

AAMRA website TEST
Subscribsion: fail
1) Check Subscribsion

0 passing (6ms)
1 failing

1) AAMRA website TEST
Check Subscribsion:
Error: Test Failed! already subscribed!
at Context.<anonymous> (subfail.spec.js:17:15)
at process.processImmediate (node:internal/timers:478:21)

Figure26: code and result for subscribe Failed

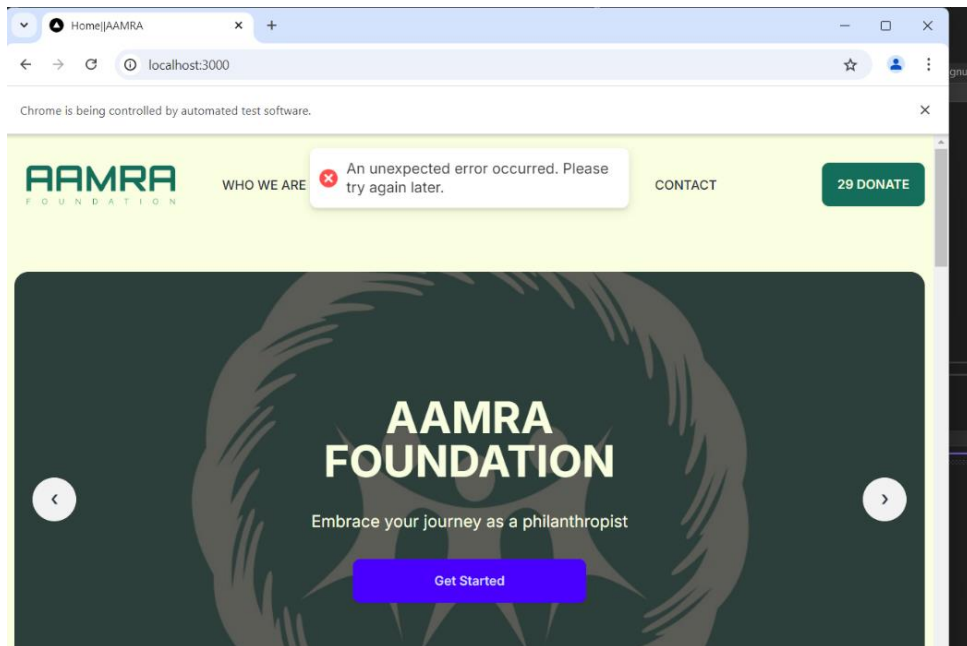


Figure27: output of the test

3.6. Profile

3.6.1. Profile: Pass

Passed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_10		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Low		Test Executed by: Md Sahadul Haque		
Module Name: Profile		Test Execution date: 21/07/2024		
Test Title: view profile after login				
Description: users should see their information				
Precondition: login to the site				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login to the site 2. Click menu (icon) 3. Click profile	Email: sahadul80@gmail.com Password: Password123 Click the profile button	User can see the profile page	Profile is shown	pass
Post Condition: A reset code with a link will be sent the email to change the old password				

```
profilepass.spec.js  subfail.spec.js  subpass.spec.js  fpfail.spec.js  fppass.spec.js  loginfail.sp
Miscellaneous describe("AAMRA website TEST") callback
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  ; (async function example() {
4      let driver = await new Builder().forBrowser(Browser.CHROME).build()
5      try {
6          await driver.get('http://localhost:3000/login')
7          await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN)
8          await driver.findElement(By.name('password')).sendKeys('Password123', Key.RETURN)
9          await driver.get('http://localhost:3000/profile')
10         await driver.wait(until.titleIs('Profile | AAMRA'), 10000)
11     } finally {
12         await driver.quit()
13     }
14 })()
15
16 describe("AAMRA website TEST", function () {
17     it("View Profile", function () {
18         console.log("Profile Test: Pass")
19     })
20 })

82 % No issues found

Developer PowerShell
+ Developer PowerShell
PS G:\Projects\AAMRA\test> mocha profilepass.spec.js

AAMRA website TEST
Profile Test: Pass
  ✓ View Profile

1 passing (5ms)

DevTools listening on ws://127.0.0.1:60562/devtools/browser/aec15cbc-e9b8-471f-9201-566a78c41f15
PS G:\Projects\AAMRA\test>
```

Figure28:

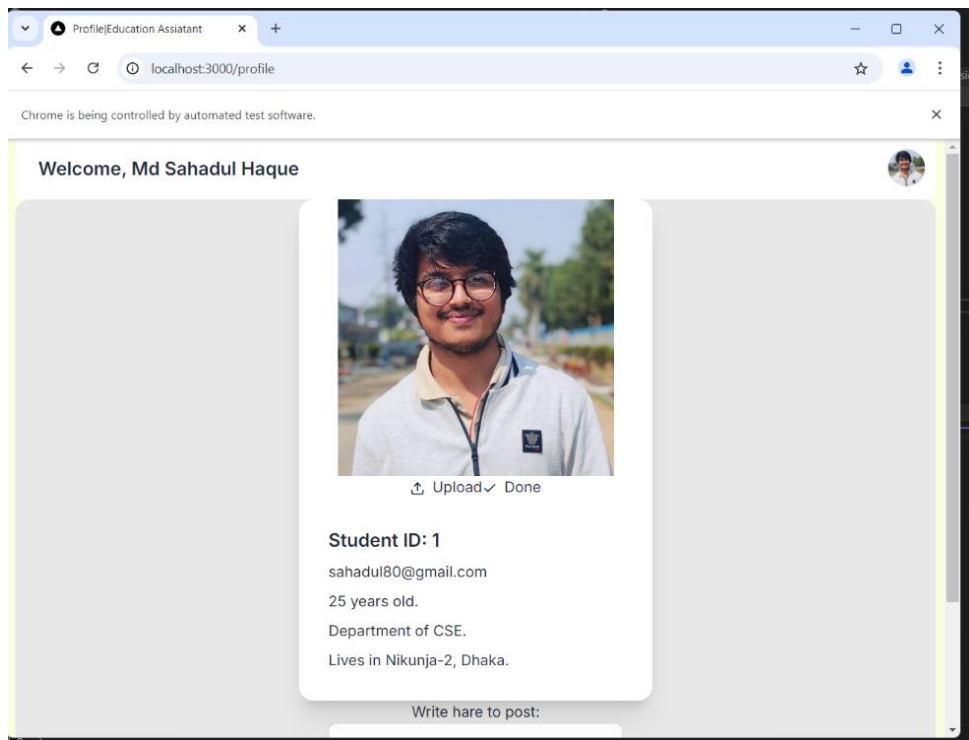


Figure29:

3.6.2. Profile: Fail

Failed test case:

Project Name: AAMRA Foundation		Test Designed by: Md Sahadul Haque		
Test Case: FR_10		Test Design date: 01/07/2024		
Test Priority (Low, Medium, High): Low		Test Executed by: Md Sahadul Haque		
Module Name: Profile		Test Execution date: 21/07/2024		
Test Title: view profile after login				
Description: users should see their information				
Precondition: login to the site				
Dependencies: None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login to the site 2. Click menu (icon) 3. Click profile	Email: sahadul80@gmail.com Password: Password123 Click the profile button	User can see the profile page	Profile is shown	pass
Post Condition: A reset code with a link will be sent the email to change the old password				

```
profilefail.spec.js  profilepass.spec.js  subfail.spec.js  subpass.spec.js  fpfail.spe
Miscellaneous
1  const { Builder, Browser, By, Key, until } = require('selenium-webdriver')
2
3  ; (async function example() {
4    let driver = await new Builder().forBrowser(Browser.CHROME).build()
5    try {
6      await driver.get('http://localhost:3000/profile')
7      await driver.wait(until.titleIs('Profile | AAMRA'), 10000)
8    } finally {
9      await driver.quit()
10   }
11 }
12
13 describe("AAMRA website TEST", function () {
14   it("View Profile", function () {
15     console.log("Profile Test: Fail")
16     throw Error("Test Failed! Missing Pre-requisite LOGIN to view profile!")
17   })
18 })

82 %  No issues found

Developer PowerShell
+ Developer PowerShell
PS G:\Projects\AAMRA\test> mocha profilefail.spec.js

AAMRA website TEST
Profile Test: Fail
  1) View Profile

0 passing (5ms)
1 failing

1) AAMRA website TEST
   View Profile:
     Error: Test Failed! Missing Pre-requisite LOGIN to view profile!
       at Context.<anonymous> (profilefail.spec.js:16:15)
       at process.processImmediate (node:internal/timers:478:21)
```

Figure30:

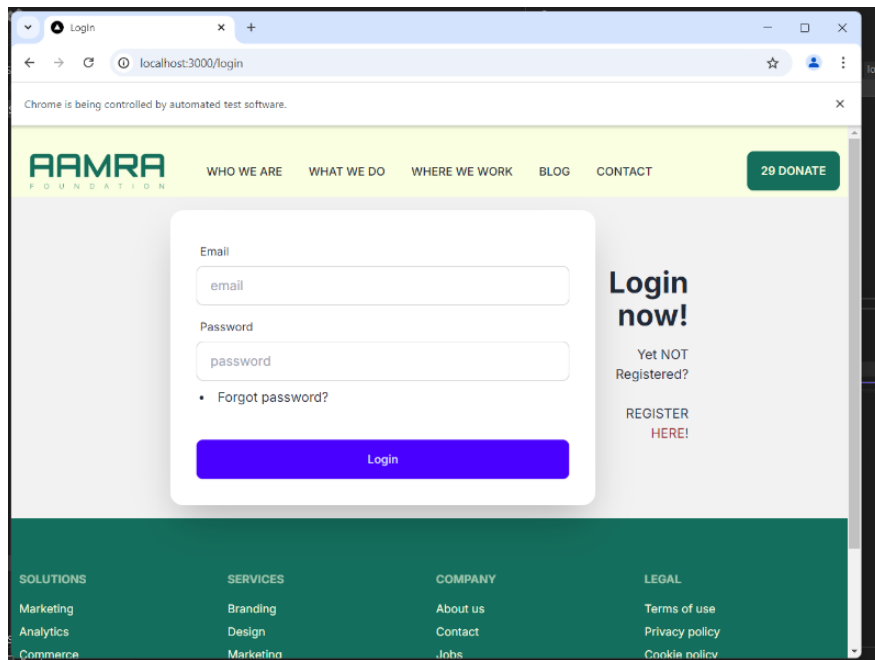


Figure31:

3.7. Logout

```

session.tsx  logout.spec.js  profilefail.spec.js  profilepass.spec.js  subfail.spec.js  subpass.spec.js
Miscellaneous  describe("AAMRA website TEST") callback
1  >const { Builder, Browser, By, Key, until } = require('selenium-webdriver');
2
3  0 references
4  >const function example() {
5    let driver = await new Builder().forBrowser(Browser.CHROME).build();
6    try {
7      await driver.get('http://localhost:3000/login');
8      await driver.findElement(By.name('email')).sendKeys('sahadul80@gmail.com', Key.RETURN);
9      await driver.findElement(By.name('password')).sendKeys('Password123', Key.RETURN);
10     await driver.wait(until.titleIs('Index | EducationAssistant'), 10000);
11     await driver.wait(until.elementLocated(By.css('img[alt="Tailwind CSS Navbar component"]')), 10000);
12     await driver.findElement(By.id('menu')).click();
13     await driver.findElement(By.id('logout')).click();
14     await driver.wait(until.urlIs('http://localhost:3000/login'), 10000);
15   } finally {
16     await driver.quit();
17   }
18 }
19
20 - references
21 >describe("AAMRA website TEST", function () {
22   10 references
23   >it("Check Logout", function () {
24     console.log("Logout Test: Pass");
25   });
26 });
27
82 %  No issues found
Developer PowerShell
+ Developer PowerShell
AAMRA website TEST
Logout Test: Pass
✓ Check Logout
1 passing (5ms)

```

Figure32:

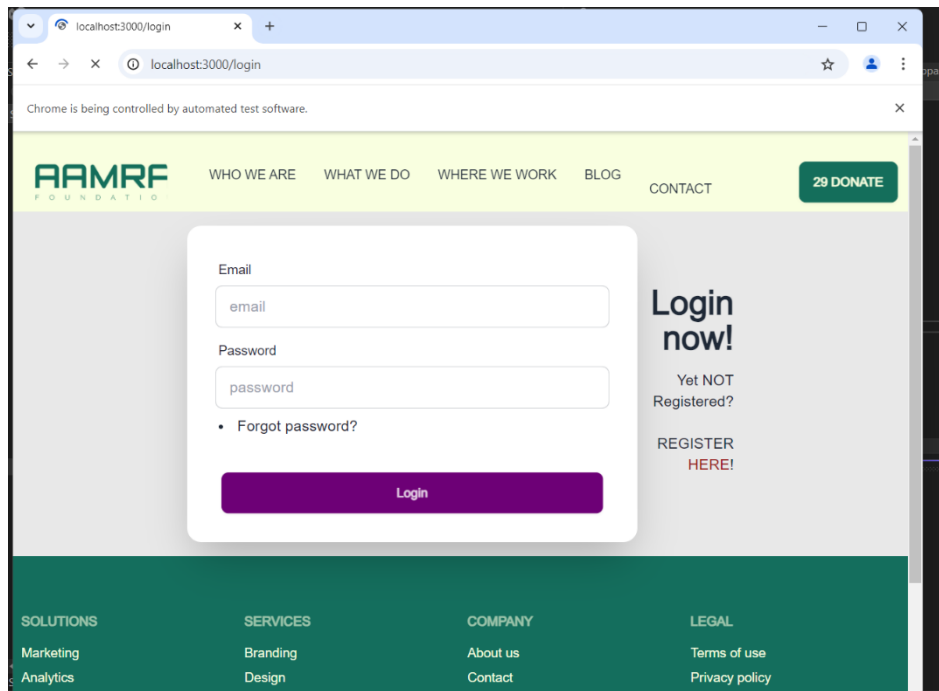


Figure33:

4. Acknowledgement

This is to verify that the tool selenium accompanied with JavaScript framework mocha are only used for testing a portion of the project “AAMRA” which is not deployed yet and still in its developing stages. These testing tools can be used to perform Distributed Denial of Service (DDos) attacks my modifying the codes in any website which is not using DDos prevention systems i.e., Completely Automated Public Turing test to tell Computers and Humans Apart (CAPTCHA). Performing DDoS attacks is illegal and unethical, and it can cause significant harm to websites, servers, and other internet infrastructure. Engaging in such activities can lead to severe legal consequences, including criminal charges. Using these tools for malicious activities violates their intended purpose and is against the law.