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Testing Assignment

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1. Introduction

1.1. Overview of the Web Application Developed

The web application developed is an Intern Management System (IMS) that streamlines the onboarding and management process for interns within an organization. It provides essential functionalities including intern registration with validation, secure intern login, and a separate admin login for authorized personnel. In addition to basic authentication features, the system supports key administrative operations such as adding new CVs submitted by interns, scheduling and recording interviews, and managing induction sessions for onboarding. The platform incorporates role-based access control, ensuring that admins and interns access only their respective features. The application is built using React for the frontend, Node.js for the backend, and MongoDB for data storage, with Axios facilitating API communication between the frontend and backend.

1.2. Purpose and Scope of Testing

The purpose of testing the Intern Management System (IMS) is to ensure that all core functionalities of the application work as expected, are free of major defects, and deliver a smooth and secure user experience. Testing aims to identify any functional, UI, or validation issues in features such as intern registration, login, admin login, CV submission, interview scheduling, and induction management. The scope of testing includes verifying both successful and unsuccessful user interactions, ensuring proper form validation, and confirming that role-based access controls are correctly enforced. The testing process covers both intern and admin functionalities across multiple scenarios, including valid operations and edge cases such as missing inputs or incorrect credentials.

1.3. Test Plan

The testing approach for the Intern Management System (IMS) follows a structured plan that includes both manual and automated testing techniques to ensure the reliability and quality of the application. Manual testing is used to explore a variety of functional scenarios, UI validations, and edge cases by executing detailed test cases that cover all user-facing and administrative functionalities. Automated testing is implemented using Cypress to repeatedly verify critical workflows such as intern registration and login. The test plan involves preparing test cases with defined inputs, expected outcomes, and actual results; executing those test

cases; documenting findings; and tracking defects. Automation scripts are designed to run against the live frontend and backend integration to simulate real-user interactions. This test plan ensures comprehensive coverage of the application's behavior under various conditions.

1.4. Objectives of testing

The main objective of testing the Intern Management System is to validate the accuracy, reliability, and security of the system's functionalities. It ensures that users can register, log in, and interact with the system without encountering critical issues. Specific goals include verifying correct data validation during registration, proper login authentication for both interns and admins, successful submission of CVs, accurate interview scheduling, and seamless induction session management. Additionally, testing aims to confirm that the application handles invalid or unexpected inputs gracefully and maintains consistent behavior across different use cases. These objectives help ensure the system meets user requirements and maintains a high level of software quality.

1.5. Testing methodologies used (manual and automated)

This project employs a combination of manual and automated testing methodologies. Manual testing is used to validate the user interface, test various functional scenarios, and explore edge cases that might be missed by automation. Each functionality is tested through a series of carefully written test cases with expected and actual outcomes. Automated testing is carried out using Cypress, a modern JavaScript-based testing framework, to verify critical workflows such as user registration and login. Automation allows for faster regression testing, consistent execution, and greater coverage of core features. The combination of both approaches ensures a thorough and efficient quality assurance process.

1.6. Tools and technologies used

The Intern Management System is built using a modern technology stack. The frontend is developed using React.js, while the backend is powered by Node.js Boot (Java). MongoDB is used as the primary database for storing user and admin information. API communication between the frontend and backend is handled using Axios. For testing, Cypress is used for end-to-end automation, and manual test cases are documented and executed based on functional and UI specifications. This tech stack ensures scalability, modularity, and ease of maintenance across all parts of the application.

2. Manual Testing Documentation

2.1. Register function/Page - (Dhananjaya A.K.G.S)

Introduction

The **Register Form** in the Intern Management System (IMS) is designed to allow new users to securely create an account and gain access to the platform's features. This form collects essential user information such as username, email, full name, initials, address, contact number, and NIC to ensure accurate identification and communication. It also includes field-level validations to prevent issues such as duplicate email registrations, ensuring each account is unique. The form is structured for user convenience and data accuracy, making the onboarding process simple, intuitive, and secure. By completing this form, users can efficiently register and begin using the IMS for managing their internship-related activities.

Manual Testing

Manual Testing Test Case Document: Register function/Page

Test case ID	Test scenario	Test steps	Expected results	Actual results	Status (Pass/Fail)
TR01	User Registration	Click “Register” button.	Redirect to login page with a success message.	Redirect to Login page with a success message	Pass
TR02	Register with an already registered email.	Register with email used before.	Display error message “User with this email already exists”	Display error message “User with this email already exists”	Pass
TR03	Invalid Email Format	Use invalid email.	Display error message “ Invalid email format ”	Redirect to Login page with a success message.	Fail
TR04	Empty Required Fields	Leave username, email, password empty.	Registration should not submit.	Display “Please fill out this	Pass

			Display validation errors.	field” message.	
TR05	Weak password without numbers	Set password “testpsword”.	Warning message “Password must include at least one number.”	Warning message “Password must include at least one number.”	Pass

Automation Testing

Automation Testing Test Case Document: Register function/Page

Test Case ID	Test Scenario	Test Steps	Expected Results	Status	Figure
A001	Intern Registration Success	Visit /register page.	Registration modal appears Redirects to login.	Pass	Figure 1
A002	Register with empty required fields	Leave username, email, full name & and name with initials empty.	Error messages shown for each empty required field.	Pass	Figure 2
A003	Register with invalid email format	Enter email as "invalidemail".	Error: "Please enter a valid email".	Pass	Figure 3
A004	Register with weak password	Enter password for 12345.	Error: "Password is too weak".	Pass	Figure 4
A005	Register with already registered email	Use an email that already exists in DB.	Error: "Email already in use".	Pass	Figure 5
A006	Validate NIC number format	Enter invalid NIC (ex: 123).	Error: "Invalid NIC format".	Pass	Figure 6
A007	Validate phone number format	Enter contact number as abc123.	Error: "Invalid contact number".	Pass	Figure 7
A008	Successful form submission shows a modal.	Fill all correct info.	"Registration Successful" modal appears.	Pass	Figure 7

2.2. Add New CV Page (Jayasiri K.B.S.R)

Introduction

This report focuses on the quality assurance (QA) testing of the "Add New CV" form within the Intern Management System developed for SLIIT. The form allows users to input and submit detailed personal, academic, and emergency contact information, as well as upload supporting documents. This functionality plays a critical role in streamlining the internship application and management process by ensuring that all required data is collected efficiently and accurately.

The form is divided into key sections: About User, Type of Internship and Qualifications, In Case of Emergency, and Upload Documents. Each section contains multiple fields designed to validate essential data such as user identity, educational background, internship preferences, and emergency contact details. This report evaluates the form's functionality, field validations, UI/UX compliance, and data submission flow to ensure the system's reliability and user-friendliness.

Manual Testing

Manual Testing Test Case Document: Add New CV Page

The screenshot shows a web browser window with the URL localhost:3000/add-new-cv. The page title is "Add New CV". The left sidebar has a dark theme with the SLIMOBTEL logo at the top. Below it are several menu items: Home, Manage CV, Intern Status, Interviews, Assign to schemes, Induction, life cycle, Schemes, Requests, certificate Requests, Manage Institute, My interns pending, My interns placement, and Rotational. The main content area is titled "New CV" and contains a sub-section "ABOUT USER". It includes fields for Full Name, Name with Initials, NIC Number, Email, Postal Address, District, Date of Birth (with a date picker), Mobile Number, Landline Number (optional), Higher Education Institute, and a dropdown for Select Gender. At the bottom, there is a section titled "Type Of Internship and Qualifications" with a small icon.

The screenshot shows a web-based form titled "Add New CV". At the top, there's a dropdown menu set to "Internship". Below it are three input fields: "Higher Educational Qualifications", "Internship Category", and a section for "In case of Emergency" which includes fields for "Emergency Contact Name 1", "Emergency Contact Name 2", "Emergency Mobile Number 1", and "Emergency Mobile Number 2". There's also a section for "Upload Documents" with fields for "Upload CV (PDF only)" and "Additional Files (optional)". Both sections have "Choose File" buttons. At the bottom is a large blue "Submit CV" button.

Test Case ID	Test Scenario	Test Steps	Expected Results	Actual Results	Status
TC001	Open Add New CV page	Navigate to the Add New CV page	Page loads with all input fields and dropdowns visible	Page loaded successfully	Pass
TC002	Submit empty form	Click "Submit CV" without entering any data	Validation errors should appear for required fields	Validation errors shown	Pass
TC003	Enter valid data and submit	Fill all fields with valid data and click "Submit CV"	Data should be saved and success message displayed	Form submitted and success message shown	Pass
TC004	Enter invalid NIC	Enter invalid NIC format and submit	Error message for invalid NIC format	Error shown for NIC	Pass
TC005	Email format validation	Enter incorrect email (e.g. no '@')	Error message should appear	Error shown for email format	Pass
TC006	Upload invalid file type	Try uploading a file that is not PDF	System should reject the file and show error	Non-PDF rejected with error message	Pass
TC007	Upload valid PDF	Upload a valid PDF file	File should be accepted	PDF uploaded successfully	Pass
TC008	Gender dropdown functionality	Try selecting different gender options	Dropdown should work and values selectable	Dropdown works properly	Pass
TC009	Date of birth	Enter future date	Error should be	Future date	Fail

	field validation	as DOB	shown	accepted (validation missing)	
TC010	Mobile number validation	Enter alphabetic characters in mobile number field	Should not accept non-numeric input	Accepts non-numeric input	Fail
TC011	Emergency contact mobile number validation	Enter incorrect phone format in emergency contact	Validation error should be shown	No error displayed	Fail
TC012	Select internship type	Select a valid internship type from the dropdown	Type should be selectable	Works as expected	Pass
TC013	Form reset functionality	Refresh or revisit the form	Form should reset to blank	Form resets properly	Pass
TC014	Duplicate NIC entry	Enter a NIC that already exists	System should prevent duplicate entry or warn user	No warning for duplicate NIC	Fail
TC015	Optional field behavior	Leave optional fields empty	Should still allow form submission	Works correctly	Pass

Automated Testing

Automated Testing Test Case Document: Add New CV Page

Test Case ID	Test Scenario	Test Steps	Expected Results	Status	Figure
TC001	Open Add New CV page	Navigate to the Add New CV page	Page loads with all input fields and dropdowns visible	Pass	Figure 10
TC002	Submit empty form	Click "Submit CV" without entering any data	Validation errors should appear for required fields	Pass	Figure 11
TC003	Enter valid data and submit	Fill all fields with valid data and click "Submit CV"	Data should be saved and success message displayed	Pass	Figure 8
TC004	Enter invalid NIC	Enter invalid NIC format and submit	Error message for invalid NIC format	Pass	Figure 12

TC005	Email format validation	Enter incorrect email (e.g. no '@')	Error message should appear	Pass	Figure 13
TC006	Upload invalid file type	Try uploading a file that is not PDF	System should reject the file and show error	Pass	Figure 14
TC007	Upload valid PDF	Upload a valid PDF file	File should be accepted	Pass	Figure 14
TC008	Gender dropdown functionality	Try selecting different gender options	Dropdown should work and values selectable	Pass	Figure 15
TC009	Date of birth field validation	Enter future date as DOB	Error should be shown	Fail	Figure 16
TC010	Mobile number validation	Enter alphabetic characters in mobile number field	Should not accept non-numeric input	Fail	Figure 17
TC011	Select internship type	Select a valid internship type from the dropdown	Type should be selectable	Pass	Figure 18
TC012	Optional field behavior	Leave optional fields empty	Should still allow form submission	Pass	Figure 19

2.3. Add new interview function (Nimsarani A.B.G.)

Introduction

The **Add New Interview** module is a key feature of the Interview Management System that enables administrators or HR personnel to efficiently schedule new interviews. This page provides a structured form where users can input all necessary interview-related information, such as the interview label or title, date, time, location, and an optional description. The purpose of this module is to streamline the process of creating interview appointments while ensuring that no critical details are missed. Built-in form validations help maintain data accuracy by preventing incomplete or invalid entries. Once submitted, the information is saved to the system and becomes accessible through other modules for tracking and further actions. This feature plays a vital role in organizing and managing the interview scheduling process in a consistent and reliable manner.

Manual Testing

Manual Testing Test Case Document: Add New Interview

The screenshot shows a web browser window with the URL `localhost:3000/interview-add`. The page title is "Add New Interview". On the left, there is a dark sidebar menu with the SLTMOBITEL logo at the top. The menu items include Home, Manage CV, Intern Status, Interviews, Assign to schemes, Induction, life cycle, Schemes, Requests, certificate Requests, and Manage Institute. The main content area contains five input fields: "Interview Label" (placeholder: "Enter interview label"), "Date" (placeholder: "mm/dd/yyyy"), "Time" (placeholder: "--:-- --"), "Location" (placeholder: "Enter location"), and "Description" (placeholder: "Enter a brief description"). At the bottom right of the form are "Cancel" and "Submit" buttons. The browser's address bar and various tabs are visible at the top.

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Status
TC001	Check if form loads properly	Navigate to /interview-add	Form should load with all required fields	Form loaded correctly with all fields visible	Pass
TC002	Submit with all valid inputs	Fill in all fields with valid data and click Submit	Interview is added successfully	Form submitted, success message shown	Pass
TC003	Submit with empty fields	Leave all fields blank and click Submit	Validation errors shown for all fields	Errors displayed: "This field is required"	Pass
TC004	Submit with invalid date format	Enter 29-04-2025 in the date field	Error message for invalid date format	Error shown: "Invalid date format"	Pass
TC005	Submit with past date	Enter a date like 01/01/2020	Error message: "Date must be in the future"	No validation for past date	Fail
TC006	Submit with invalid time format	Enter 25:00 in time field	Validation error shown	Error message shown: "Invalid time"	Fail
TC007	Submit with special characters in label	Enter !@#\$\$% in Interview Label	Either accepted or validation message shown	Accepted without issue	Fail
TC008	Submit with very long location input	Enter 200+ characters	Field may limit input or wrap text	Field accepts long input, wraps text	Fail
TC009	Submit with empty description	Leave description blank	Should be accepted if optional	Interview submitted successfully	Pass
TC010	Cancel button functionality	Click Cancel	Form should reset or redirect user	Redirected to previous page	Fail
TC011	Field placeholder text check	Look at each input field	Placeholders are shown for guidance	Placeholders displayed correctly	Fail

Automated Testing

Automated Testing Test Case Document: Add New Interview

Test Case ID	Test Scenario	Test Steps	Expected Result	Status	Figure
TC001	Check if form loads properly	Navigate to /interview-add	Form should load with all required fields	Pass	<u>Figure 20</u>
TC002	Submit with all valid inputs	Fill in all fields with valid data and click Submit	Interview is added successfully	Pass	<u>Figure 20</u>
TC003	Submit with empty fields	Leave all fields blank and click Submit	Validation errors shown for all fields	Pass	<u>Figure 21</u>
TC004	Submit with invalid date format	Enter 29-04-2025 in the date field	Error message for invalid date format	Pass	<u>Figure 22</u>
TC005	Submit with past date	Enter a date like 01/01/2020	Error message: "Date must be in the future"	Fail	<u>Figure 23</u>
TC006	Submit with invalid time format	Enter 25:00 in time field	Validation error shown	Fail	<u>Figure 24</u>
TC007	Submit with special characters in label	Enter !@#\$% in Interview Label	Either accepted or validation message shown	Fail	<u>Figure 25</u>
TC008	Submit with very long location input	Enter 200+ characters	Field may limit input or wrap text	Fail	<u>Figure 26</u> <u>Figure 34</u>
TC009	Submit with empty description	Leave description blank	Should be accepted if optional	Pass	<u>Figure 27</u>

TC010	Cancel button functionality	Click Cancel	Form should reset or redirect user	Fail	<u>Figure 28</u>
TC011	Field placeholder text check	Look at each input field	Placeholders are shown for guidance	Fail	<u>Figure 29</u>
TC012	Valid form submission	Fill all fields with valid inputs and click Submit	Label: HR Round Date: 04/30/2025 Time: 10:00 AM Location: Colombo Description: Final interview	Pass	<u>Figure 29</u>

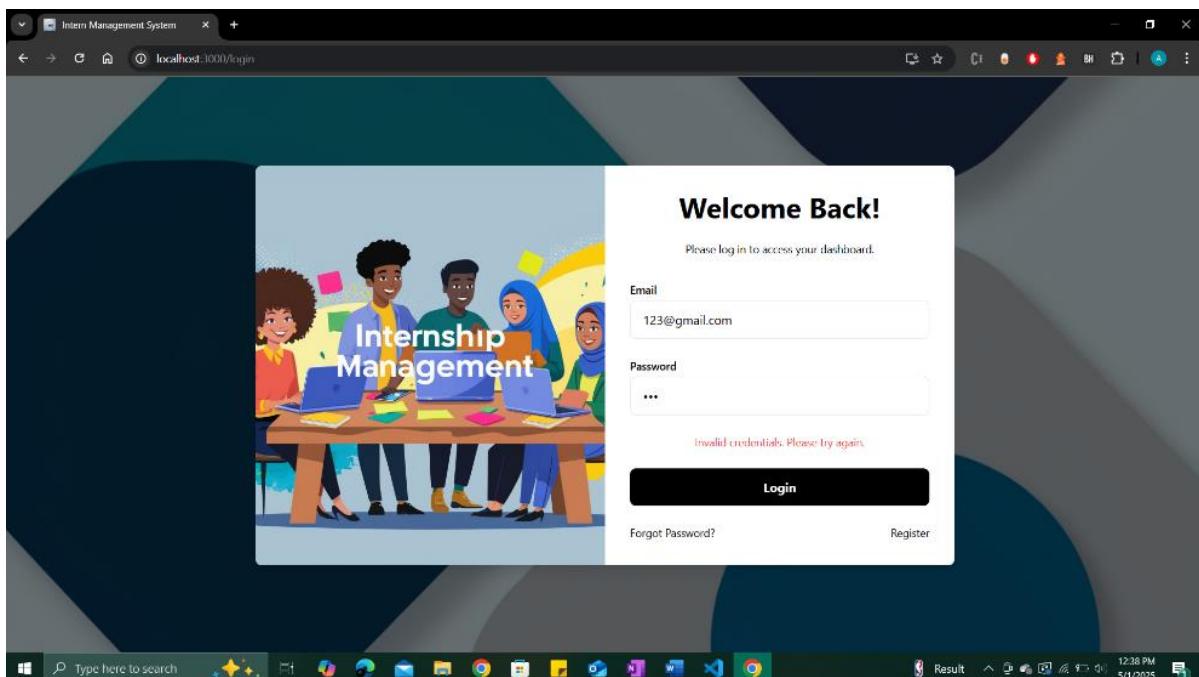
2.4. Login function (Jayaweera J.M.A.U.)

Introduction

The Internship Management System is a user-friendly web-based platform developed to facilitate the management of internships for students, administrators, and affiliated organizations. Upon visiting the login page, users are greeted with a welcoming interface that emphasizes simplicity and accessibility. The design includes a visually appealing illustration alongside a login form, where users can securely enter their email and password to access their personalized dashboards. Additional features such as a “Forgot Password?” link and a “Register” option provide users with convenient account recovery and sign-up functionality. The clear structure and modern design of the interface enhance the overall user experience, reflecting the platform’s commitment to efficient and inclusive internship management.

Manual Testing

Manual Testing Test Case Document: Login function/page



Test case ID	Test scenario	Test steps	Expected results	Actual results	Status (Pass/Fail)
TR01	User Login	Fill in all fields with valid data.	Redirect to home page.	Redirect to home page.	Pass
TR02	Admin Login button	Click “admin login” button.	Redirect to Admin Login page.	Redirect to Admin Login page.	Pass
TR03	Invalid Email Format	Use invalid email.	Display error message “Invalid email format ”	Display “Please include @ in this field” message.	Pass
TR04	Invalid Password	Fill invalid password.	Registration should not submit. Display validation errors.	Display “Invalid credentials” message.	Pass
TR05	Empty Required Fields	Leave email, password empty.	User Login should not submit. Display validation errors.	Display “Please fill out this field” message.	Pass

Automated Testing

Automated Testing Test Case Document: Login function/page

Test Case ID	Test Scenario	Test Steps	Expected Results	Status	Figure
A009	User Login (Valid Credentials)	Navigate to /login. Enter valid email & password. Click "Login".	Redirects to home page.	Pass	<u>Figure 30</u>
A010	Admin Login Button	Click "Admin Login" button.	Redirects to /admin-login	Pass	<u>Figure 31</u>
A011	Invalid Email Format	Enter invalid email (e.g., invalidemail). Submit form.	Error: "Please enter a valid email".	Pass	<u>Figure 32</u>
A012	Invalid Password	Enter valid email + wrong password. Click Login.	Error: " <i>Invalid credentials</i> ".	Pass	<u>Figure 33</u>
A013	Empty Required Fields	Leave email & password empty. Click Login.	Error: " <i>Please fill out this field</i> ".	Pass	<u>Figure 33</u>

3. Appendix

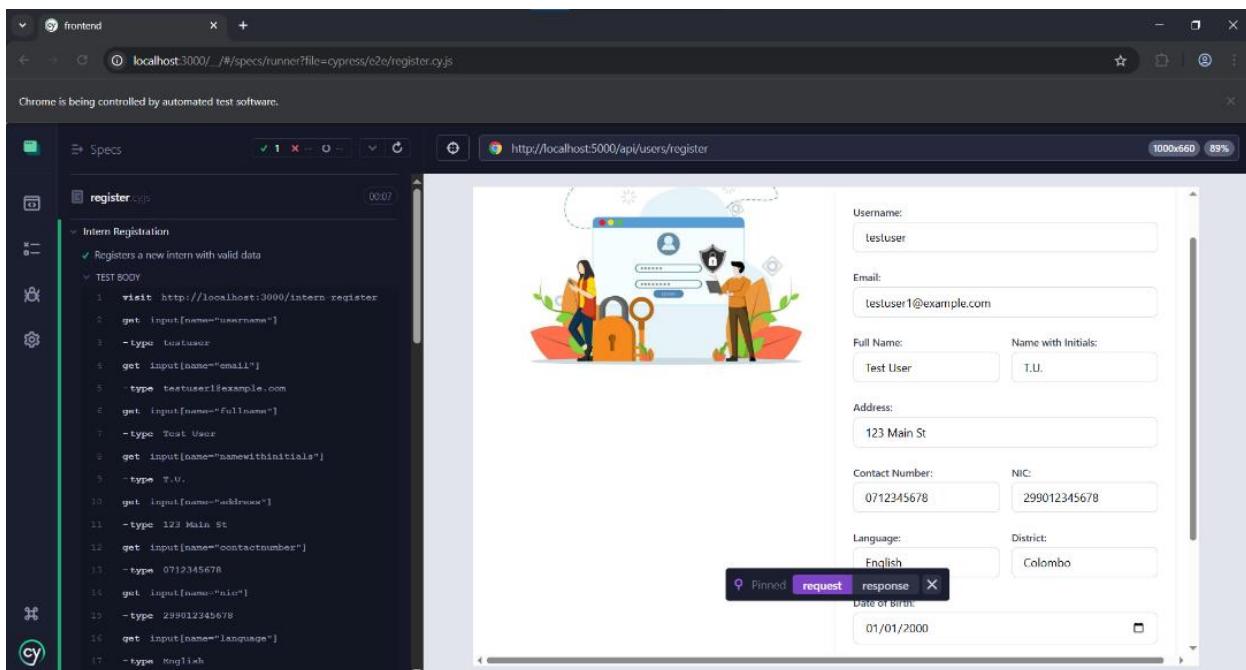
3.1. Dhananjaya A.K.G.S (IT21387494)



The screenshot shows a registration form titled "Create Account in IMS". A validation message "User with this email already exists" is displayed above the input fields. The form includes fields for Username, Email, Full Name, Name with Initials, Address, Contact Number, NIC, Language, and District. To the left of the form is a decorative illustration featuring two people interacting with a laptop and a shield, surrounded by leaves and a lock.

Create Account in IMS	
User with this email already exists	
Username:	InspireMonaUI
Email:	dhananjayasamitha68@gmail.com
Full Name:	dhananjaya
Name with Initials:	Samitha
Address:	1600 Fake Street
Contact Number:	6019521328
NIC:	200023400999
Language:	English
District:	Colombo

Figure 1



The screenshot shows a browser window with a Cypress test runner interface on the left and a registration form on the right. The test runner displays a test for "Intern Registration" with several assertions. The registration form is identical to the one shown in Figure 1, with the same fields and validation message. The browser address bar shows "localhost:3000/_/#/specs/runner?file=cypress/e2e/register.cy.js".

```
visit http://localhost:3000/intern register
    get input[name="username"]
    -type testuser
    get input[name="email"]
    type testuser@example.com
    get input[name="fullname"]
    -type Test User
    get input[name="namewithinitials"]
    -type T.U.
    get input[name="address"]
    -type 123 Main St
    get input[name="contactnumber"]
    -type 0712345678
    get input[name="nic"]
    -type 299012345678
    get input[name="language"]
    -type English
```

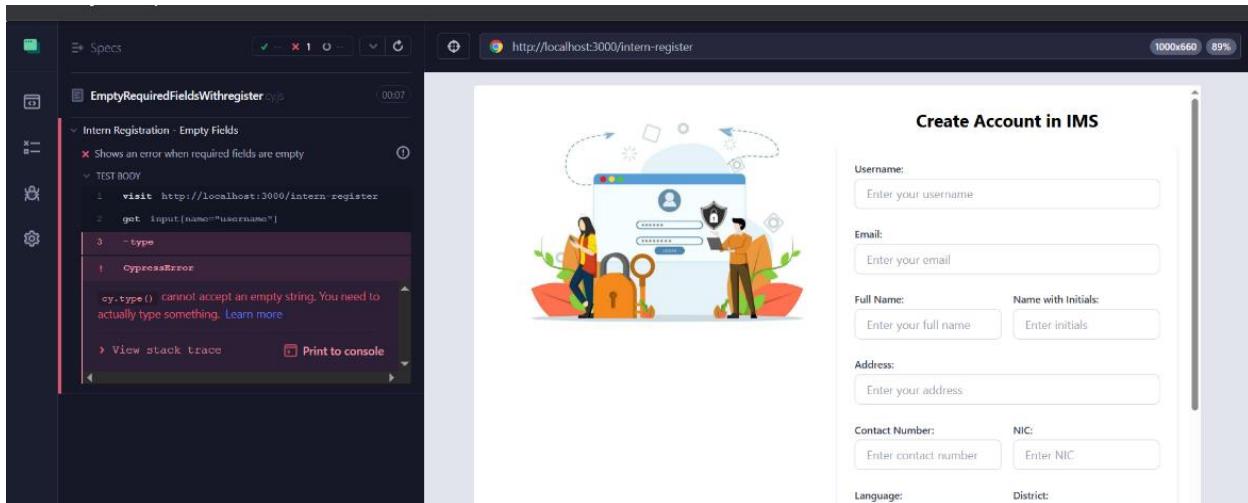


Figure 3

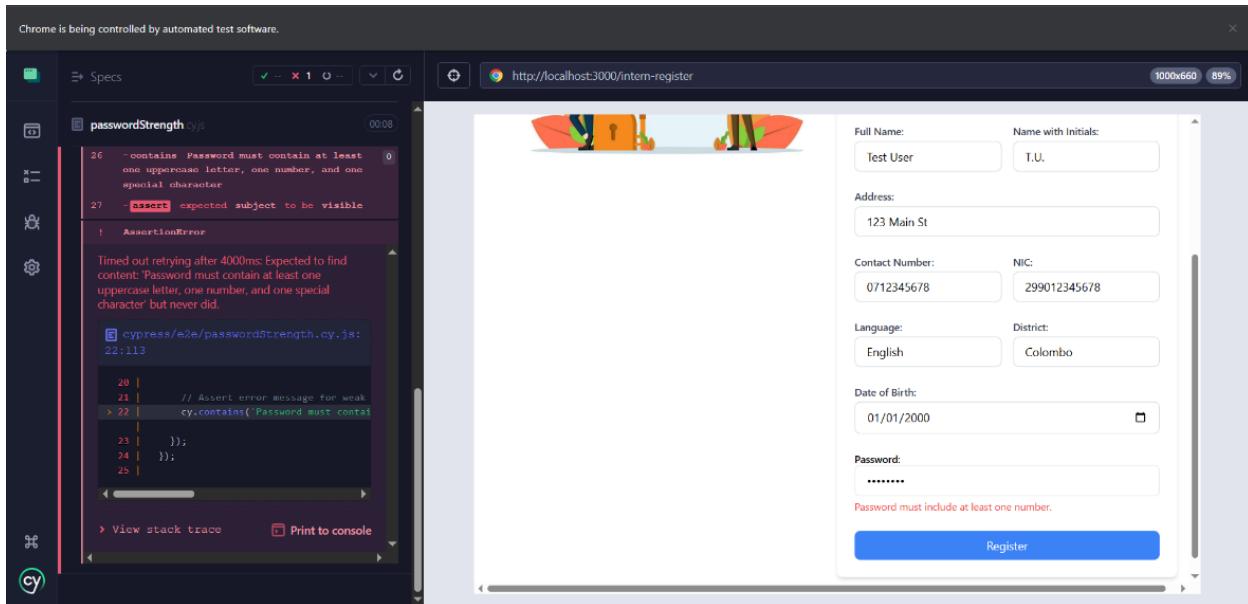


Figure 4

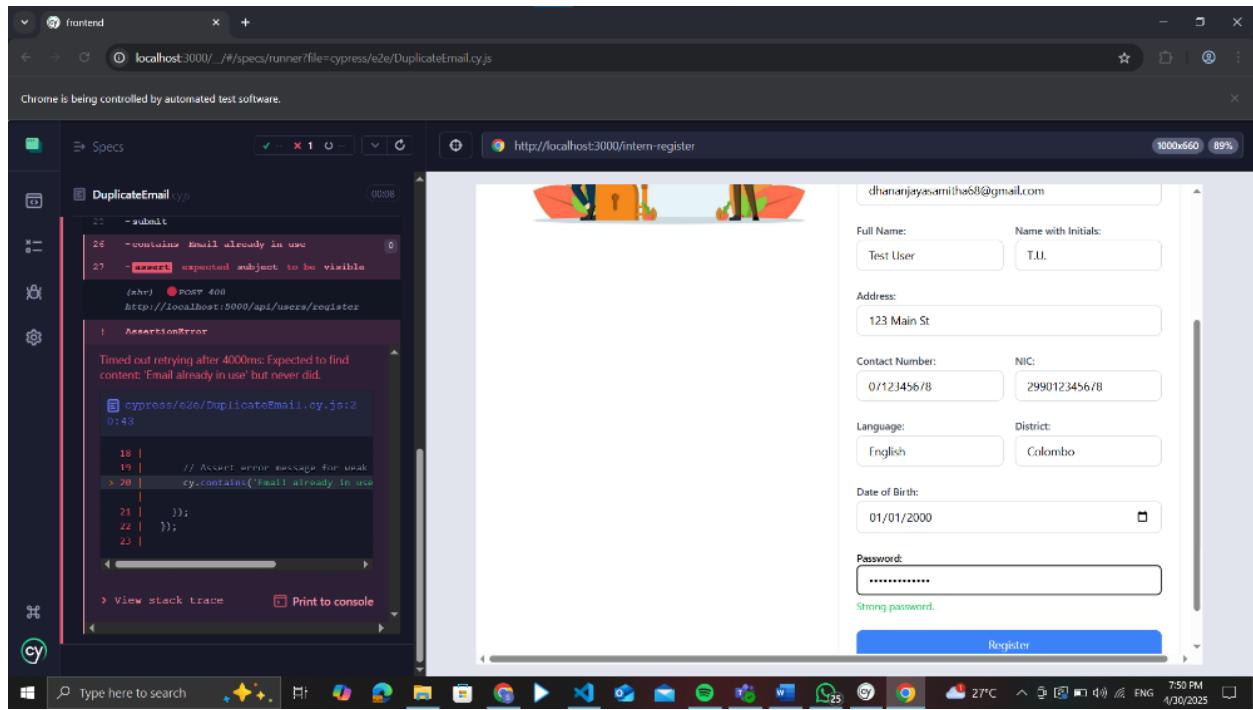


Figure 5

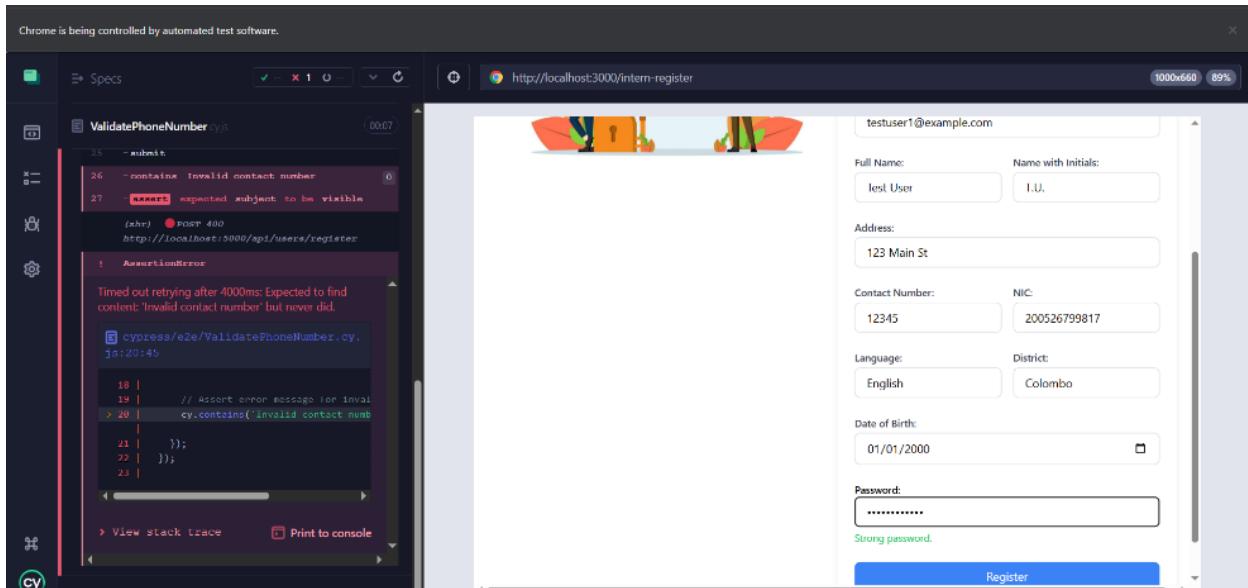


Figure 6

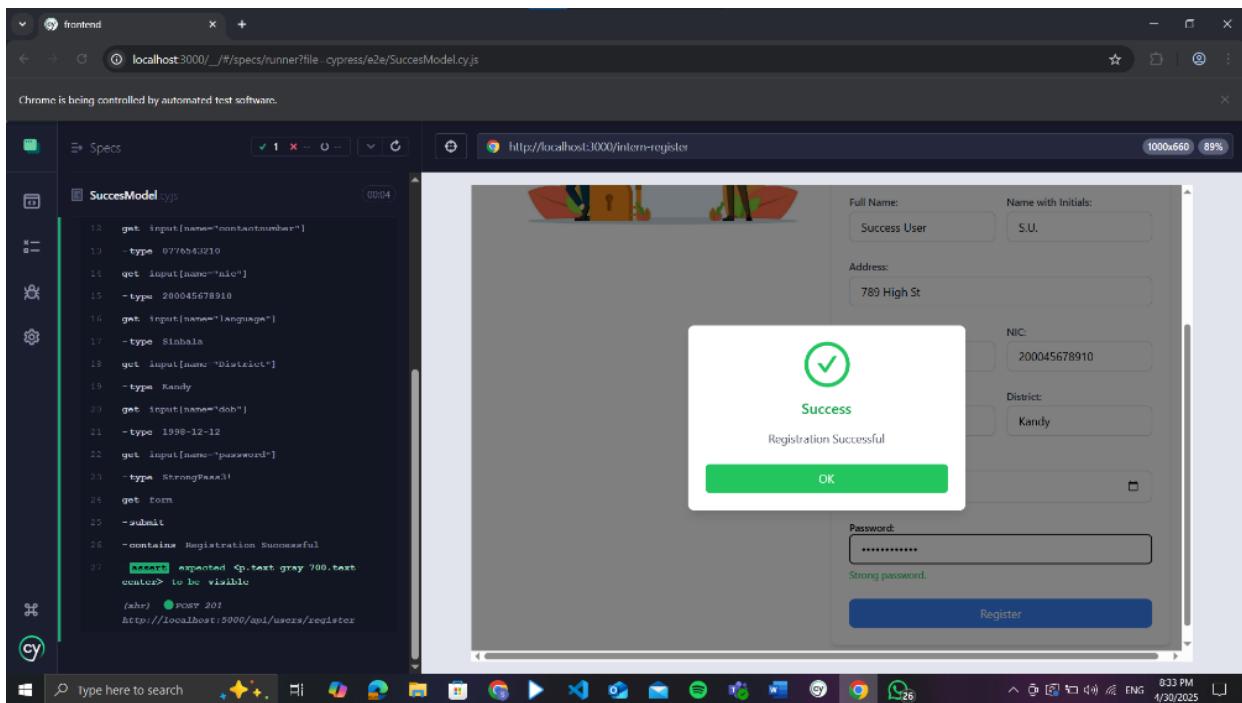


Figure 7

3.2. Jayasiri K.B.S.R (IT21206696)

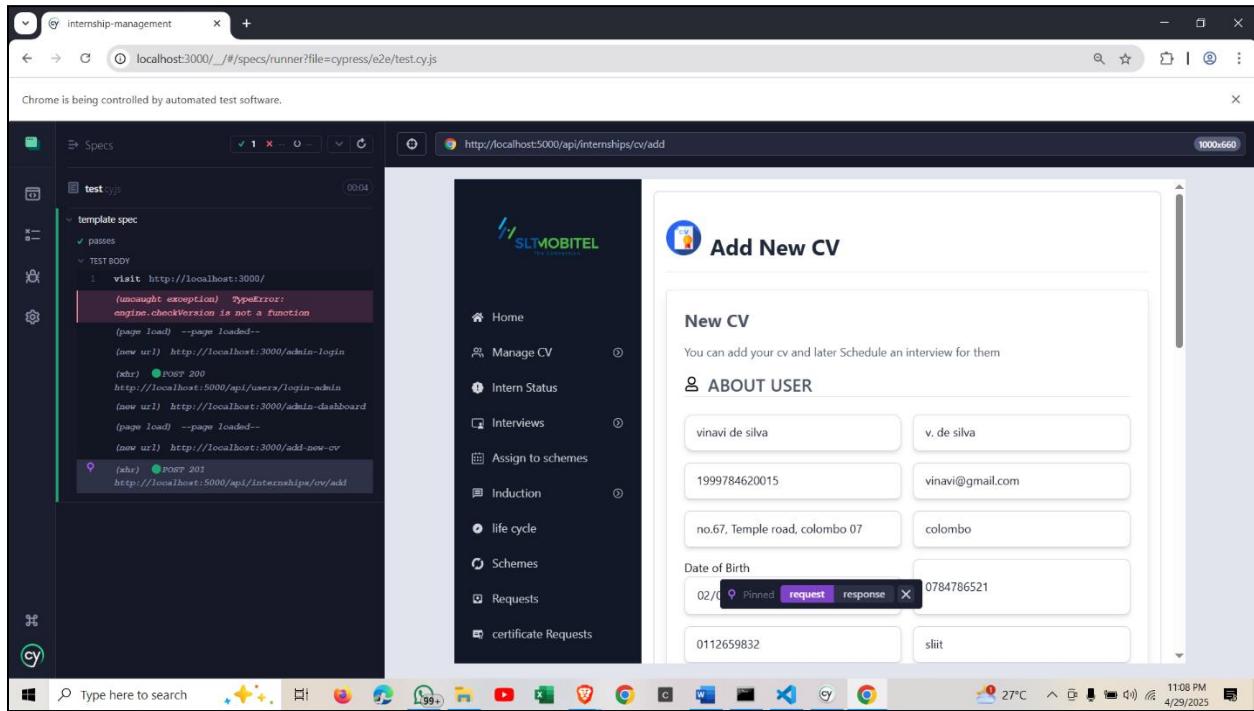


Figure 8

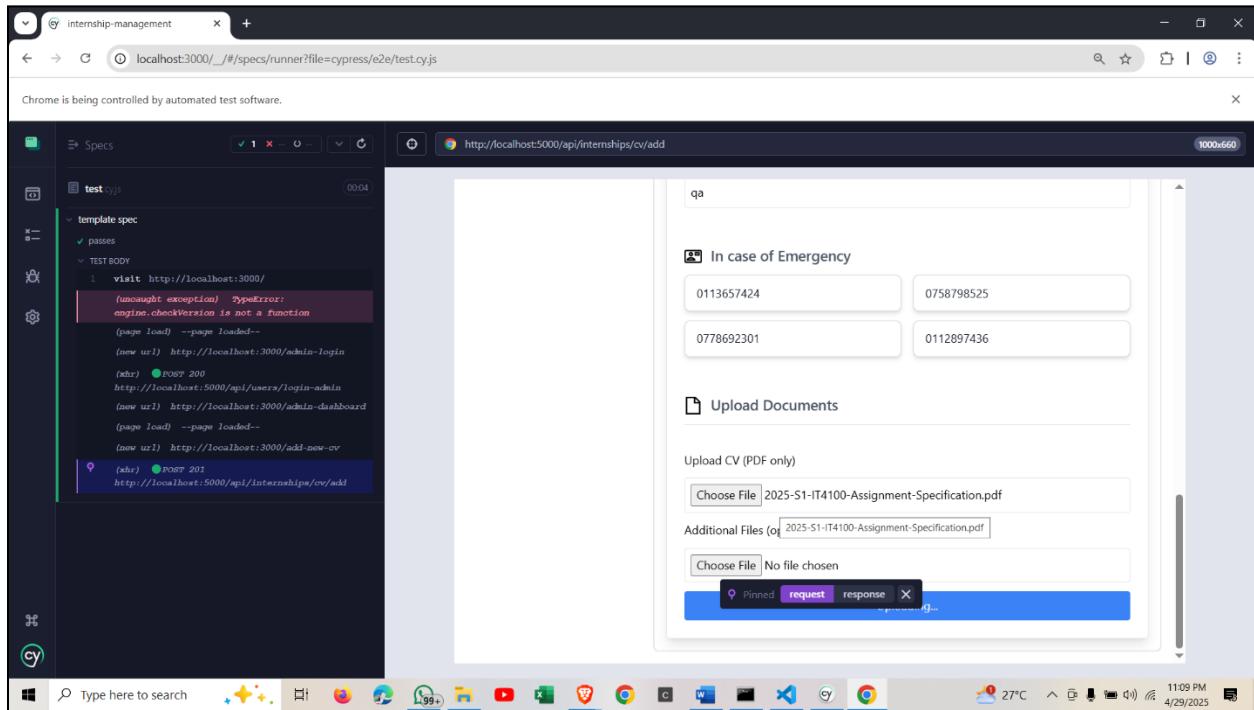


Figure 9

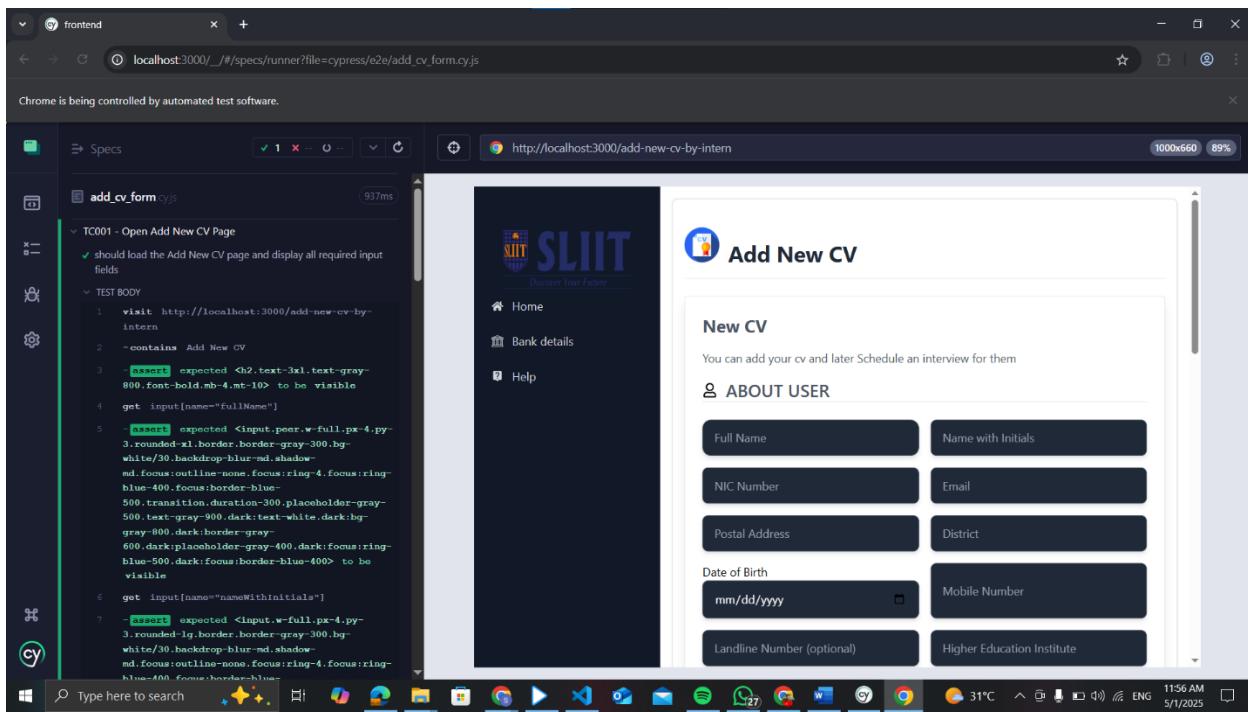


Figure 10

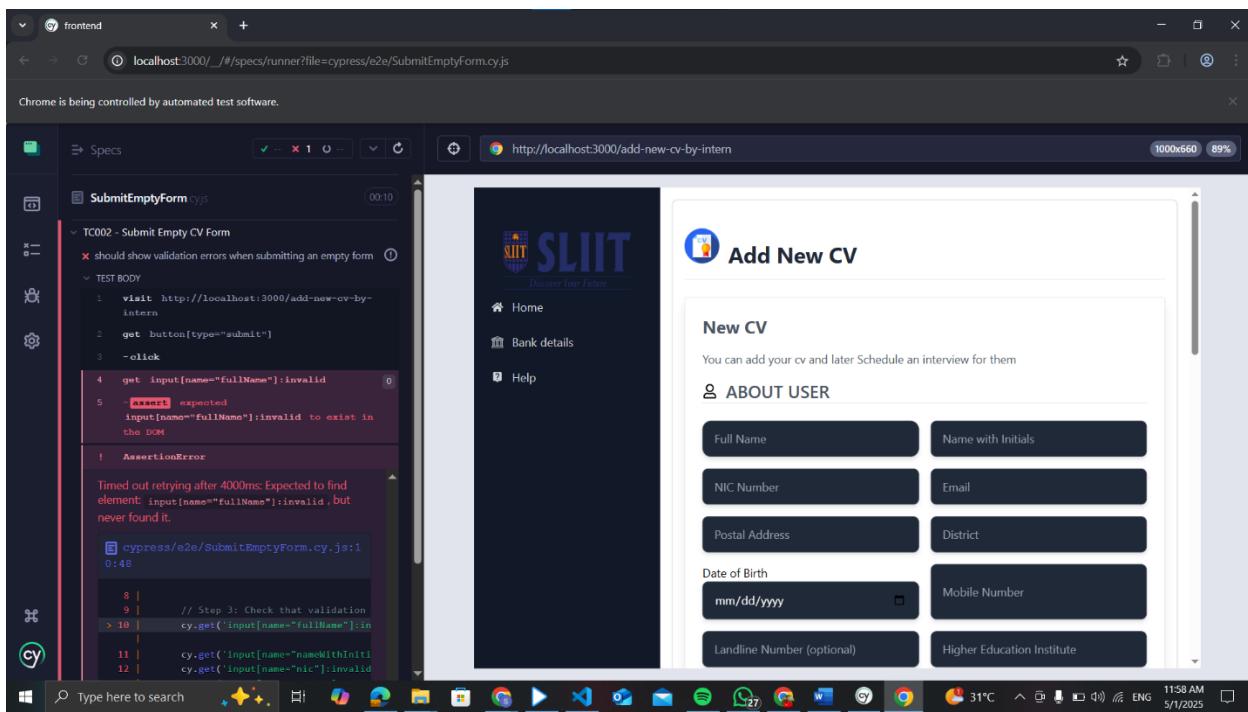


Figure 11

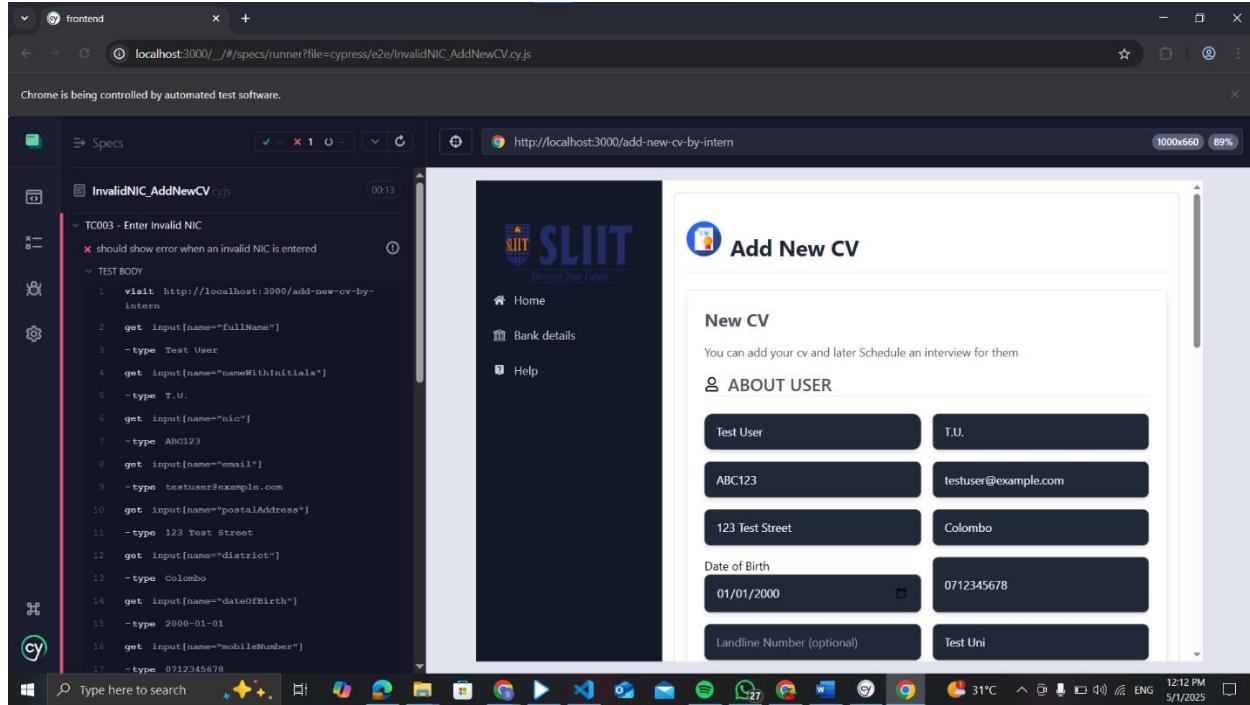


Figure 12

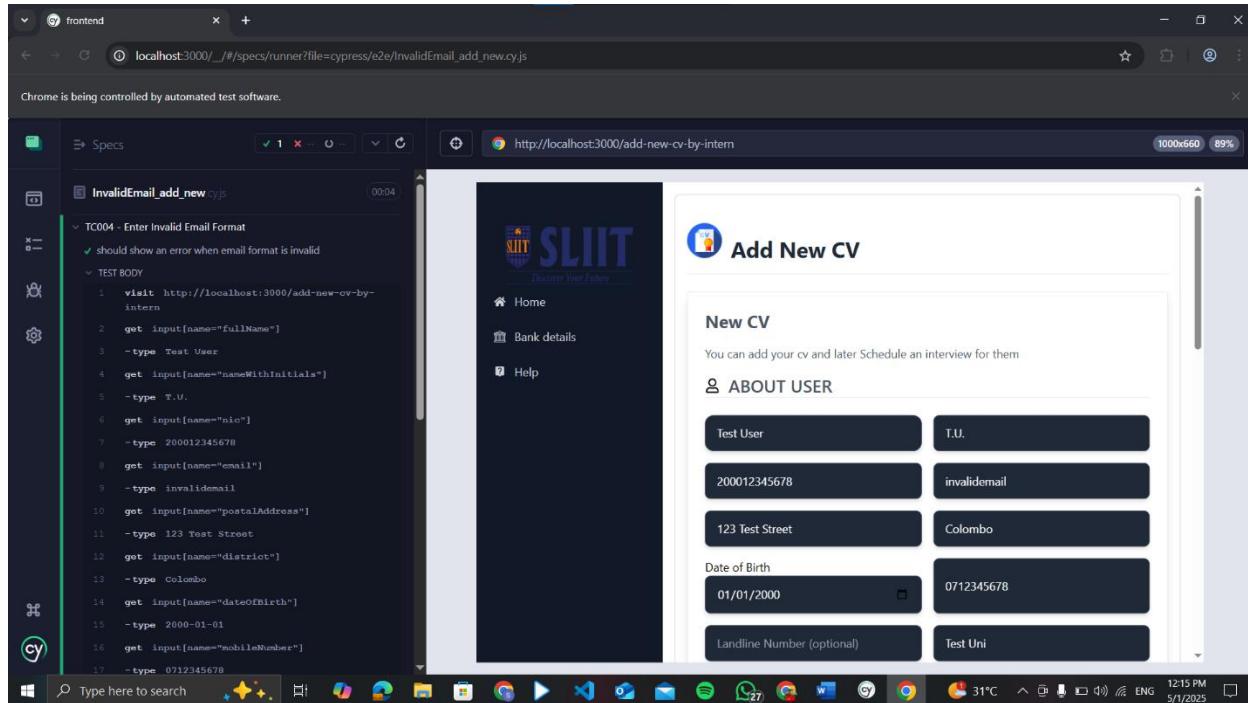


Figure 13

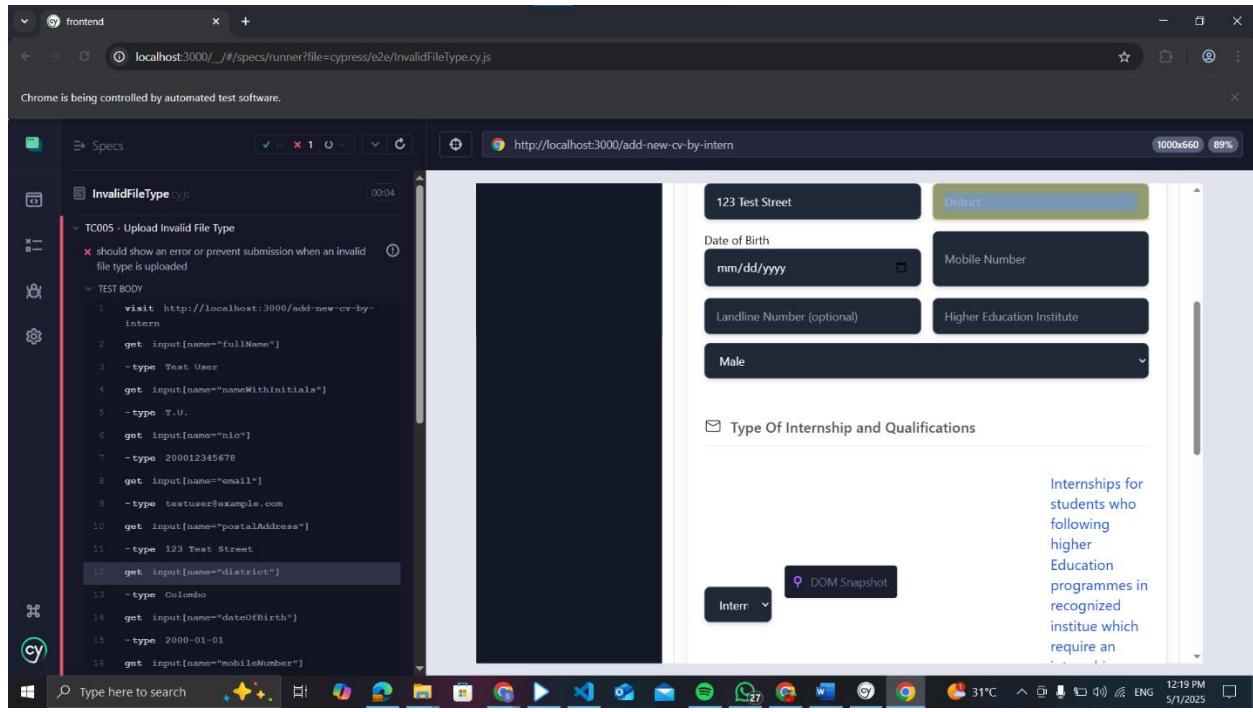


Figure 14

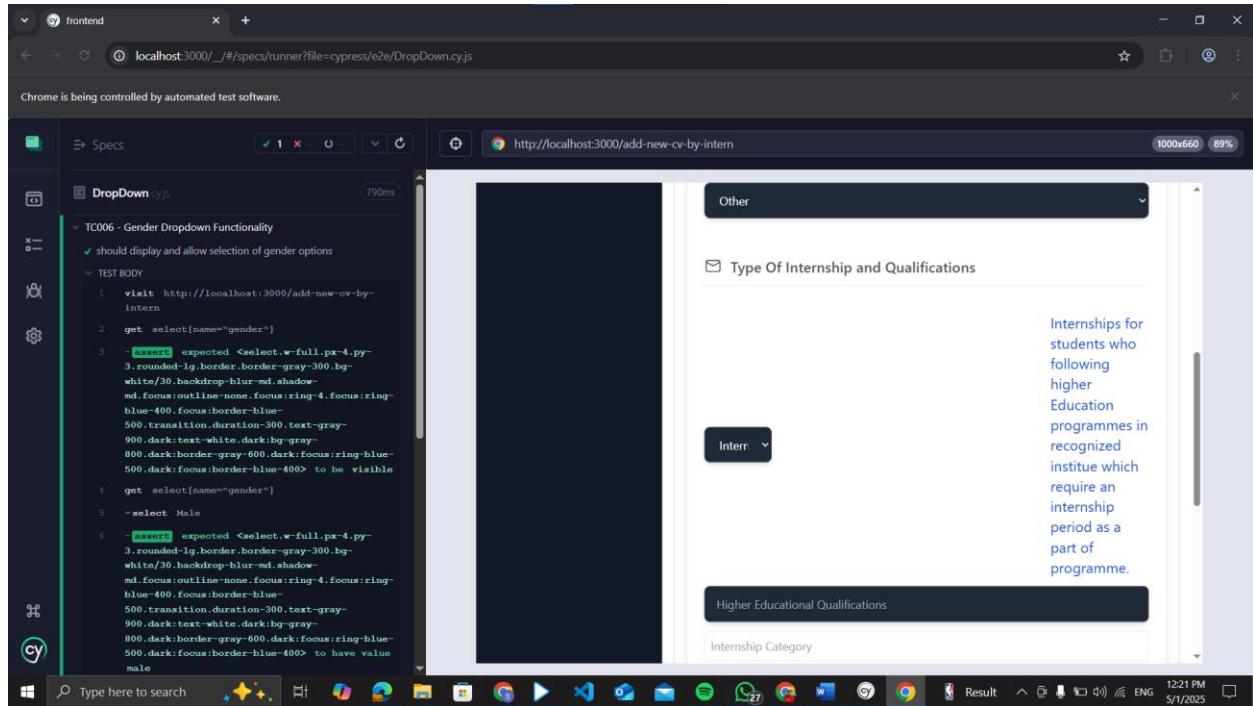


Figure 15

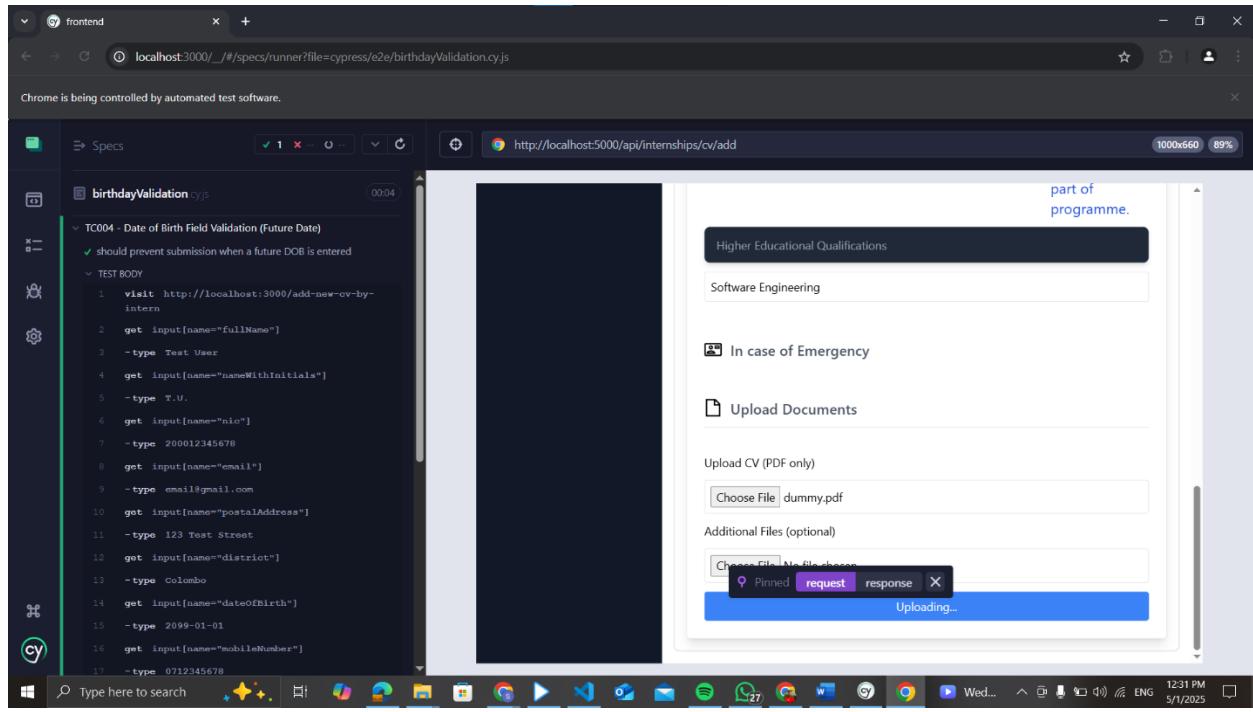


Figure 16

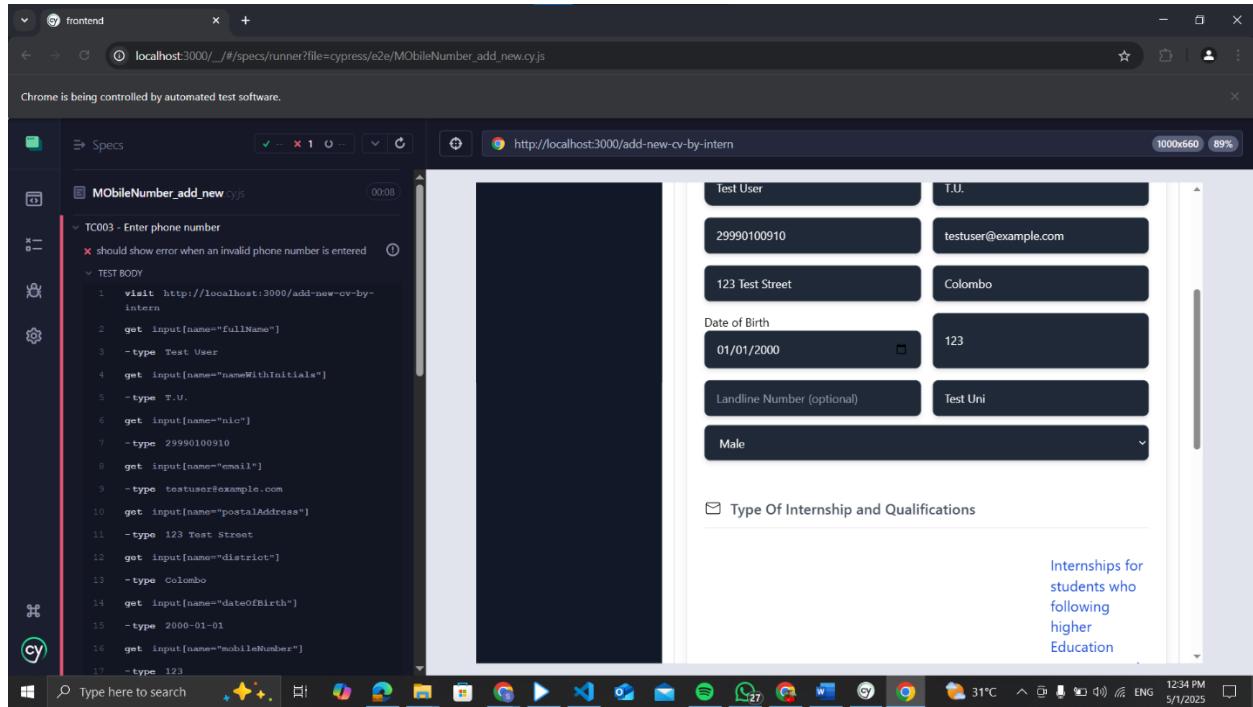


Figure 17

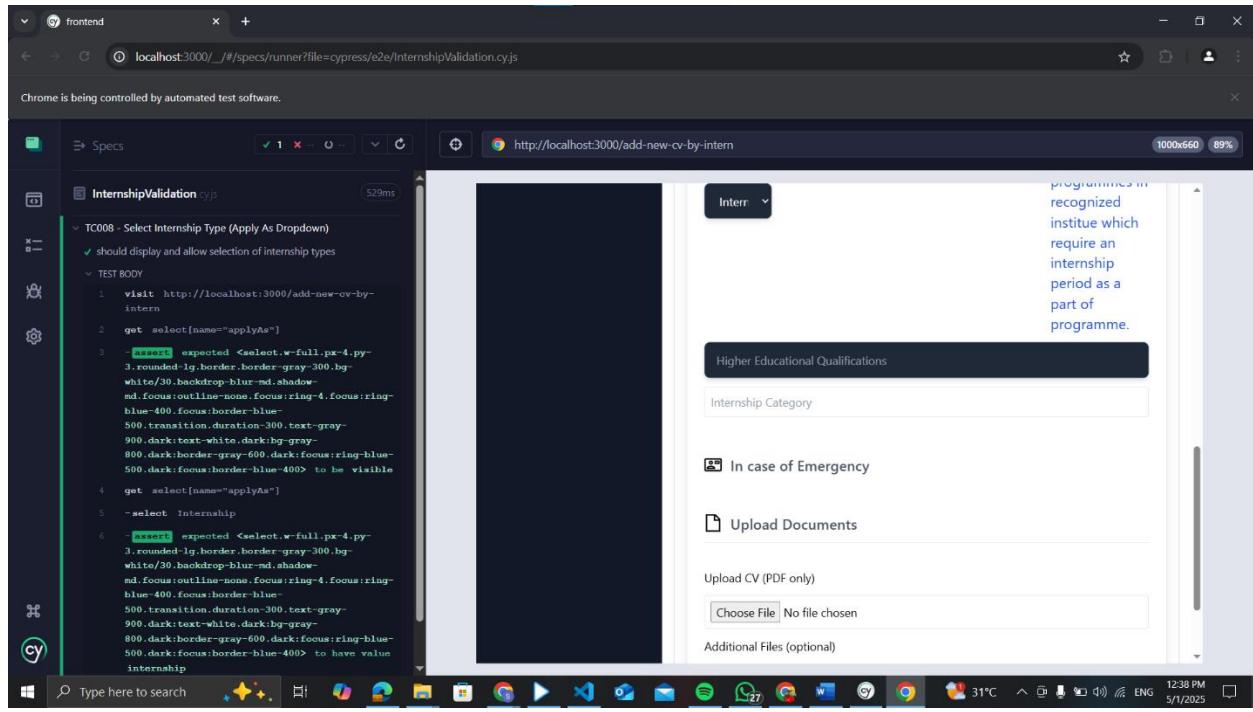


Figure 18

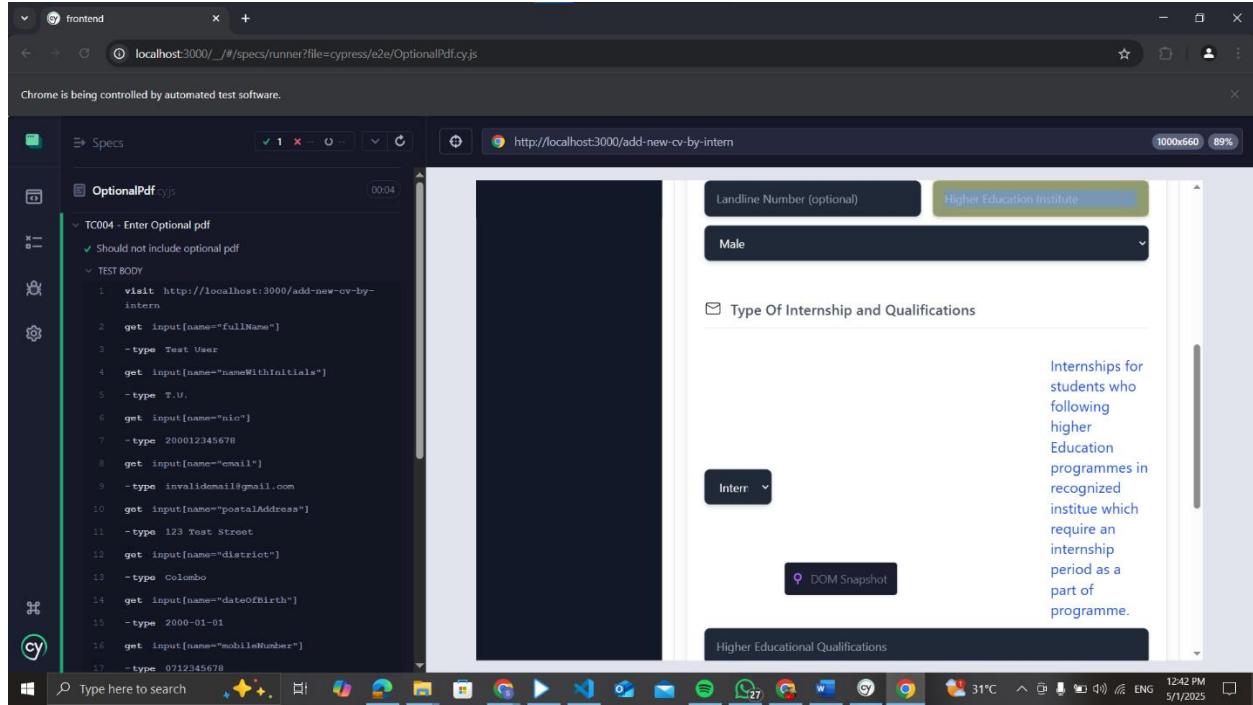


Figure 19

3.3. Nimsarani A.B.G (IT21235610)

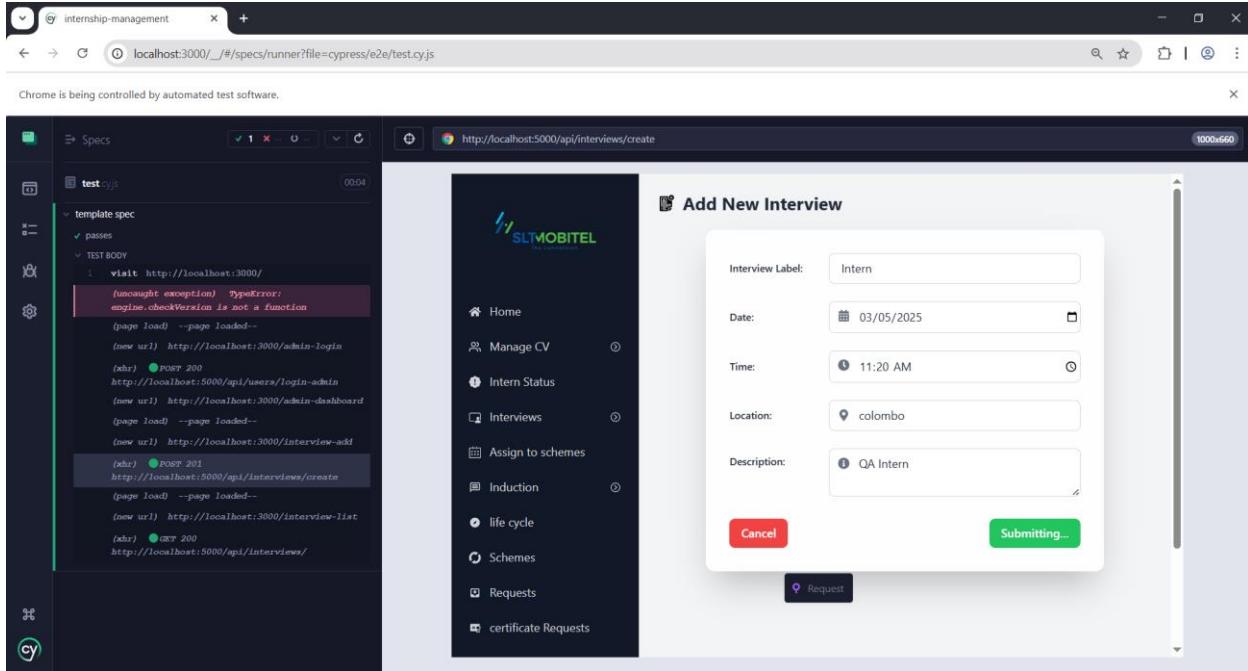


Figure 20

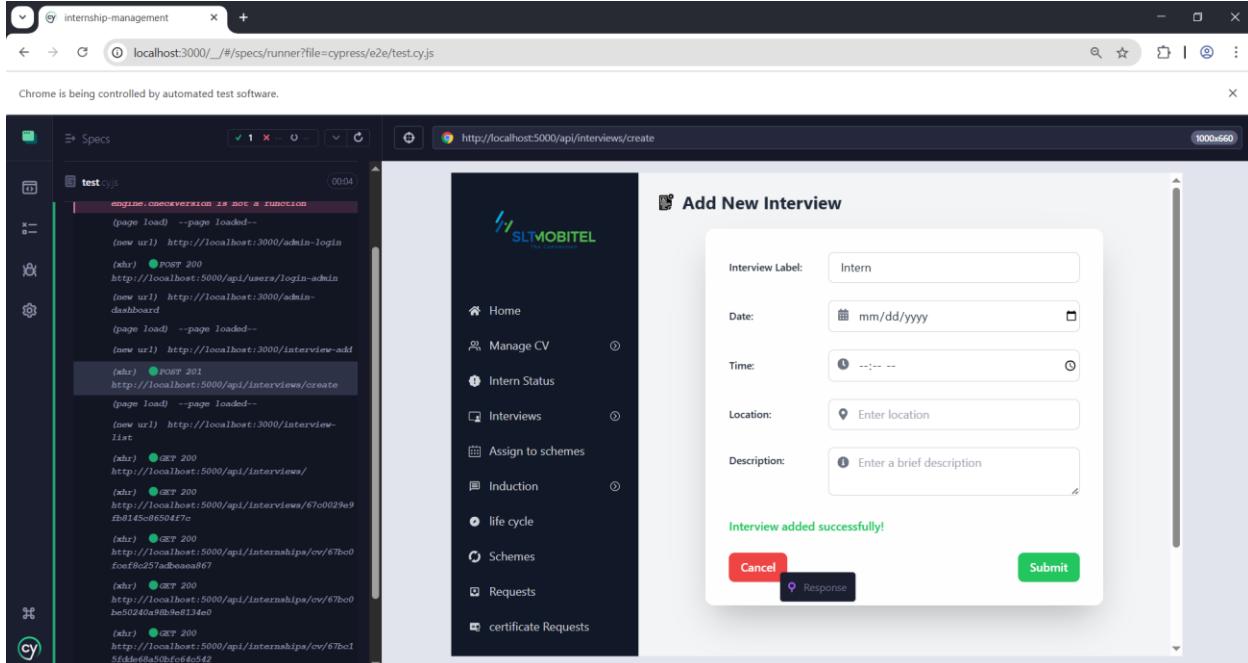


Figure 21

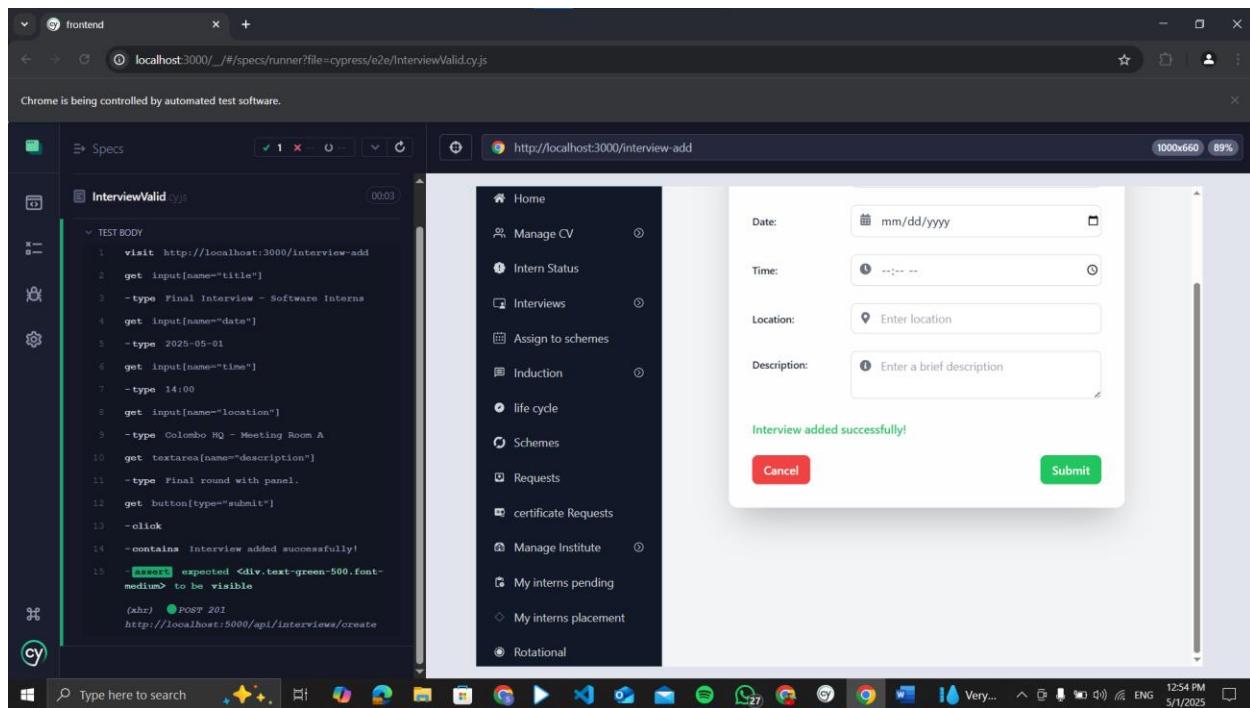


Figure 22

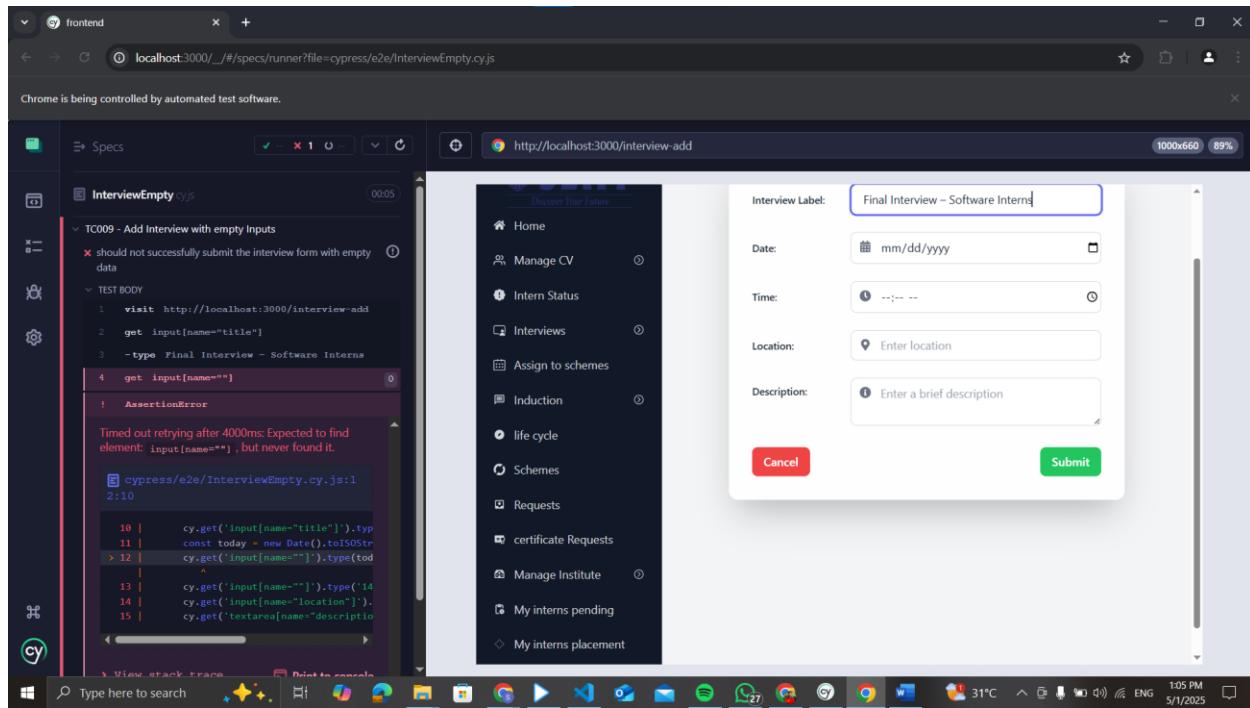


Figure 23

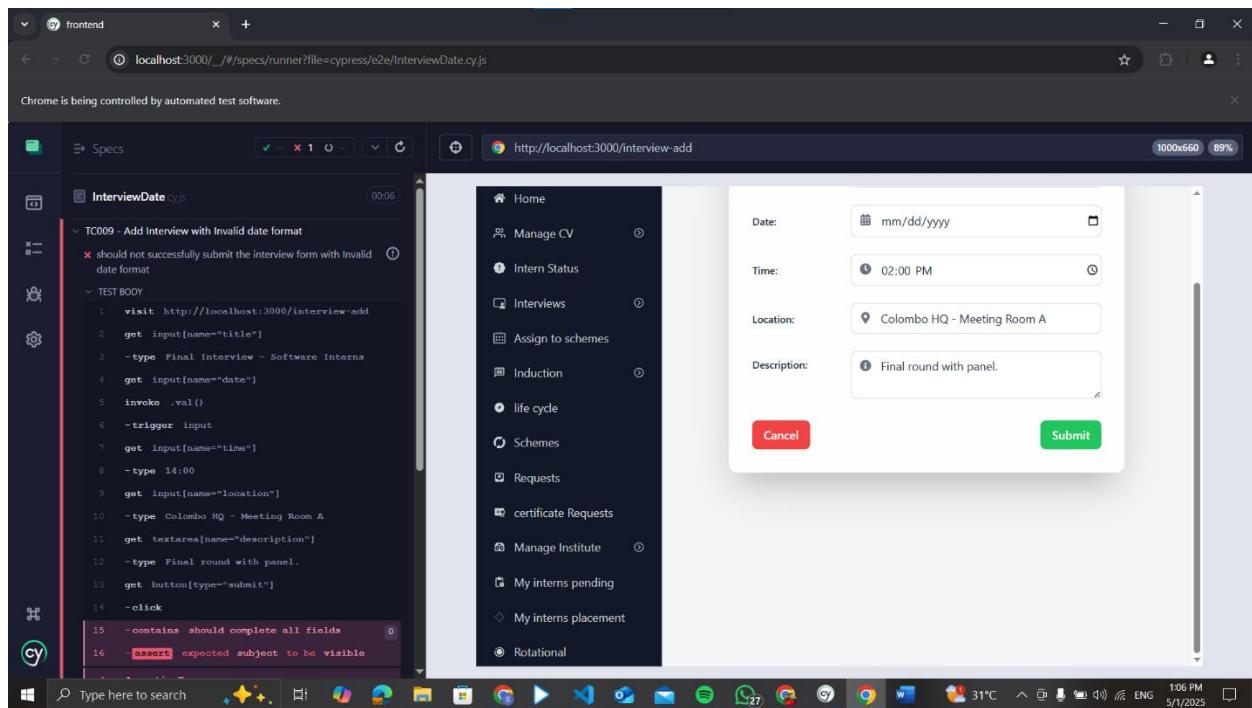


Figure 24

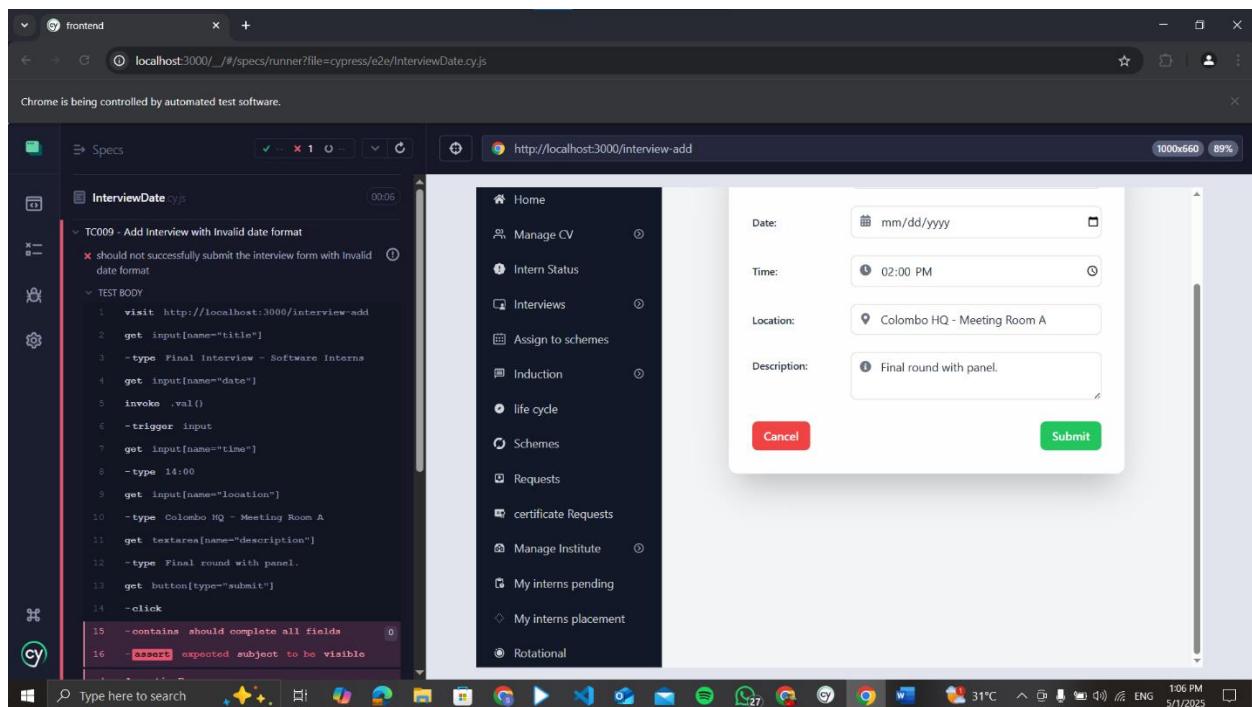


Figure 25

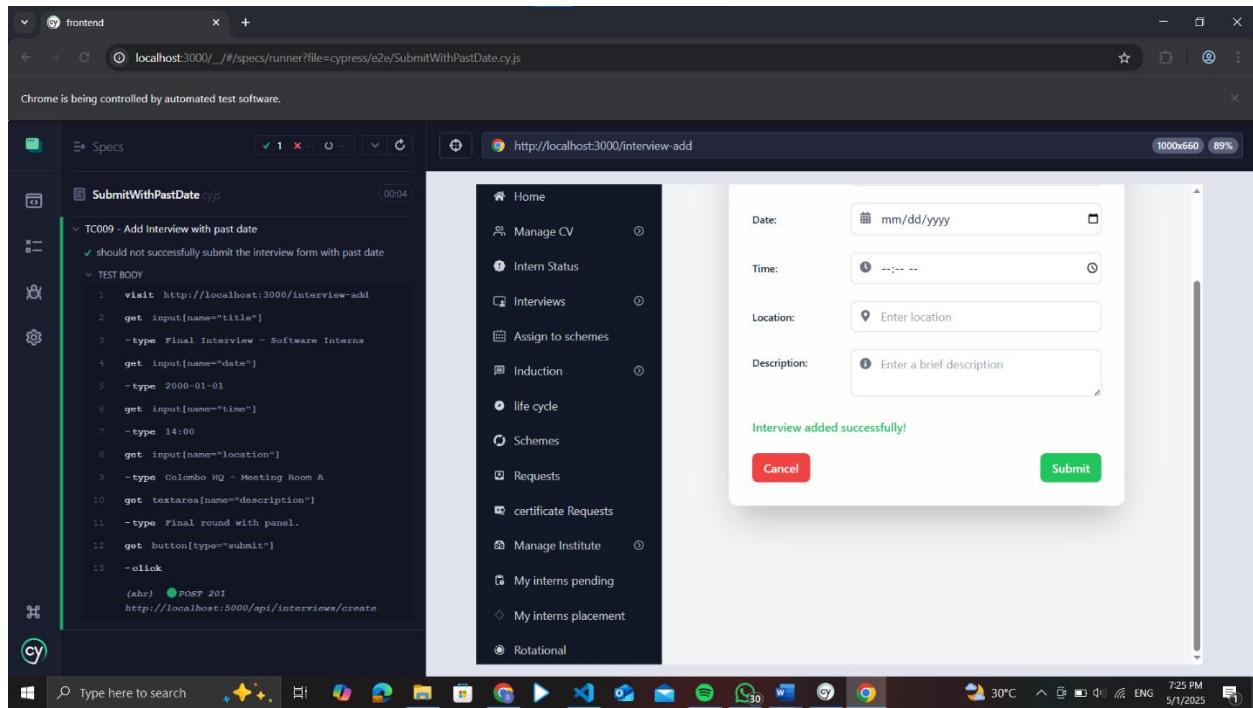


Figure 26

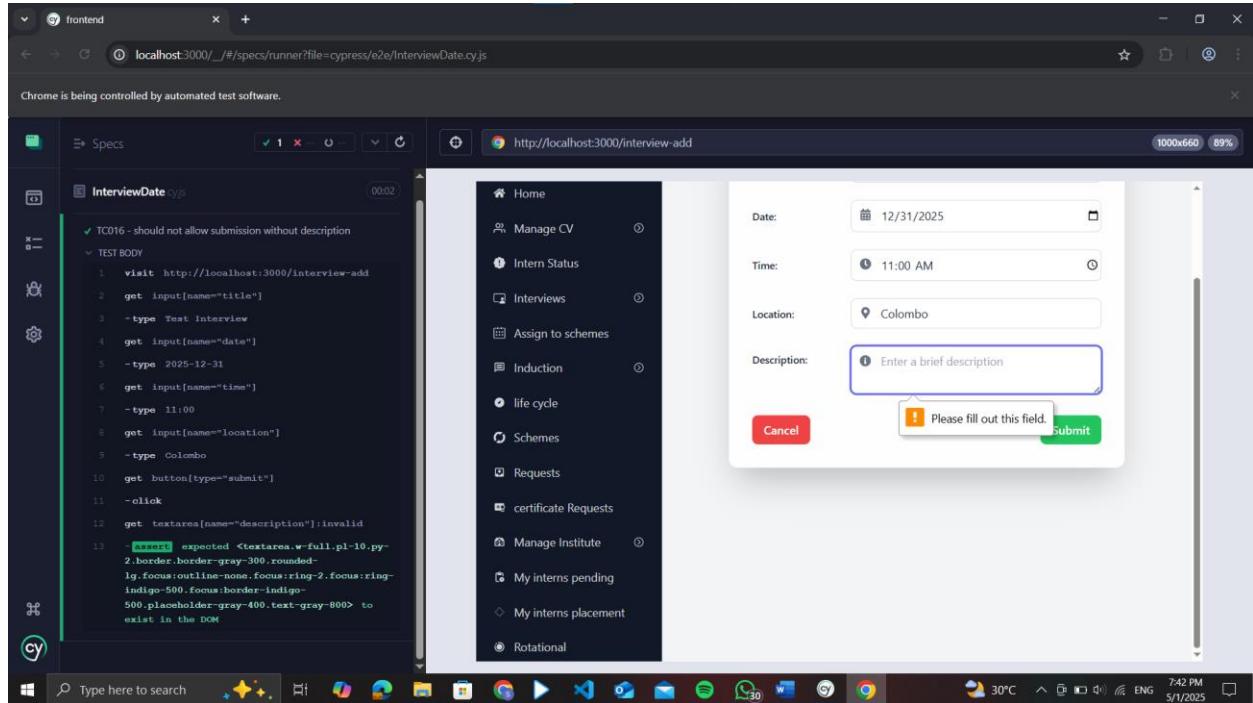


Figure 27

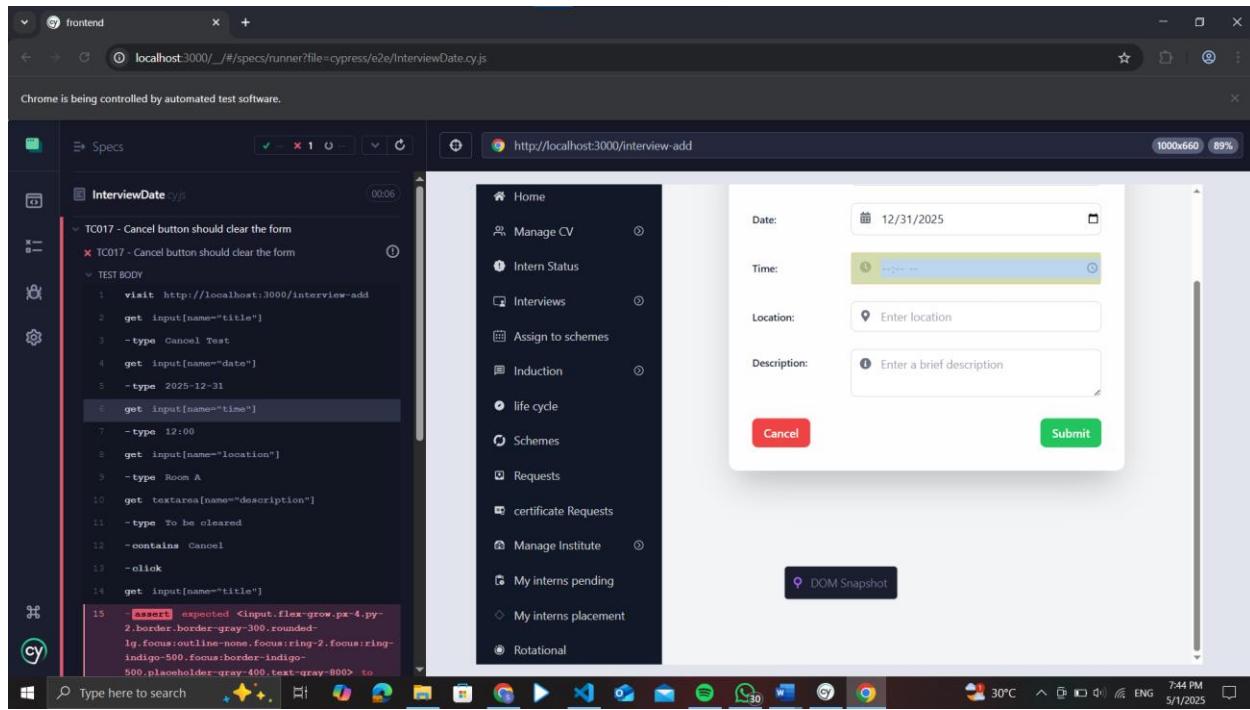


Figure 28

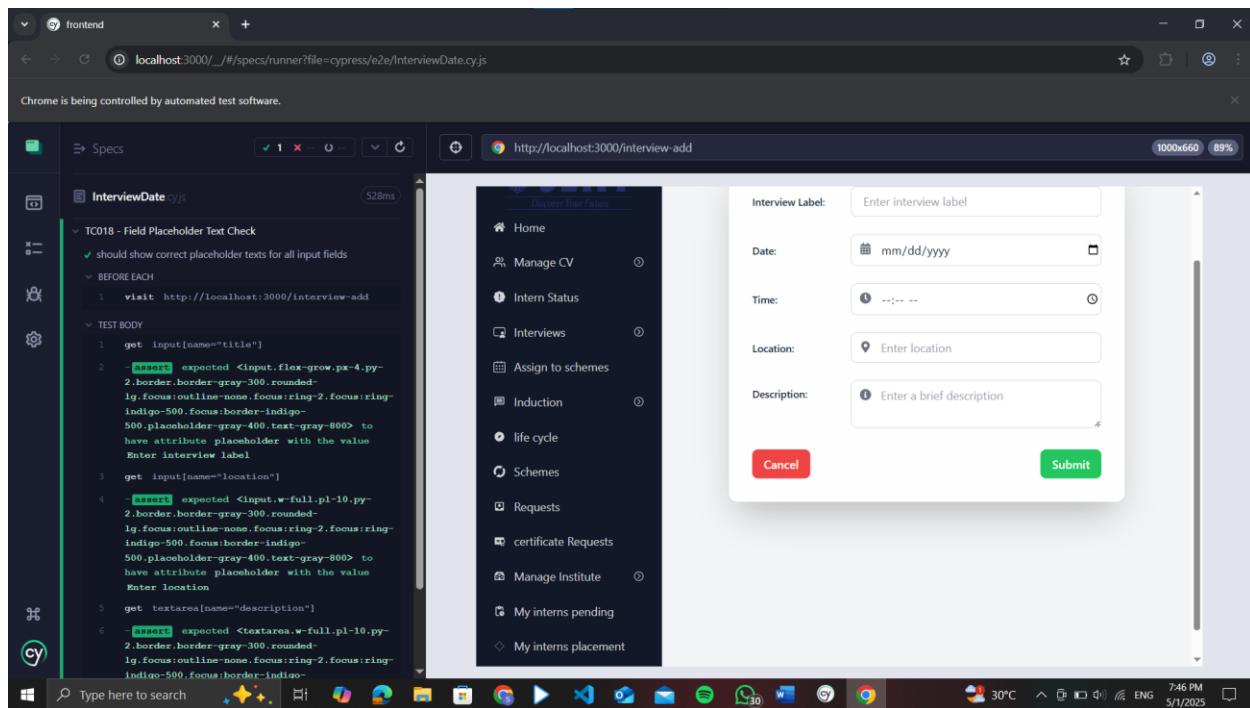


Figure 29

3.4. Jayaweera J.M.A.U. (IT21210006)

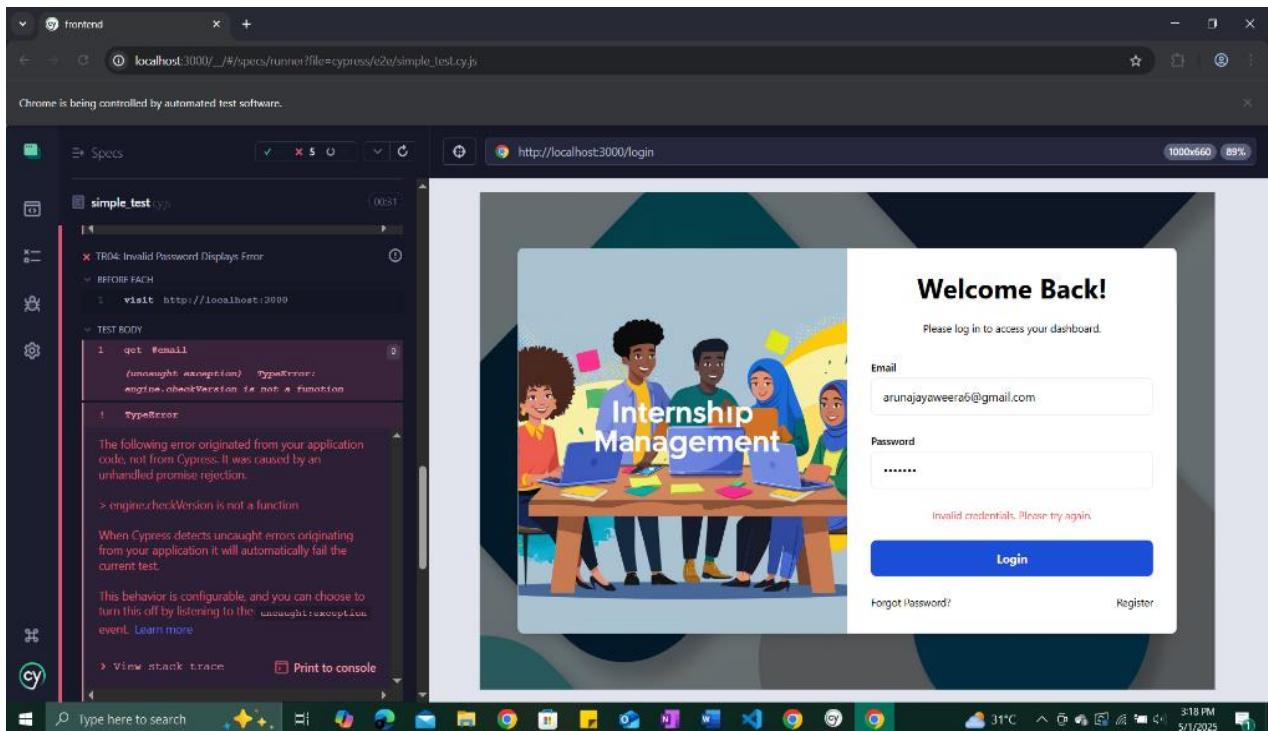


Figure 30

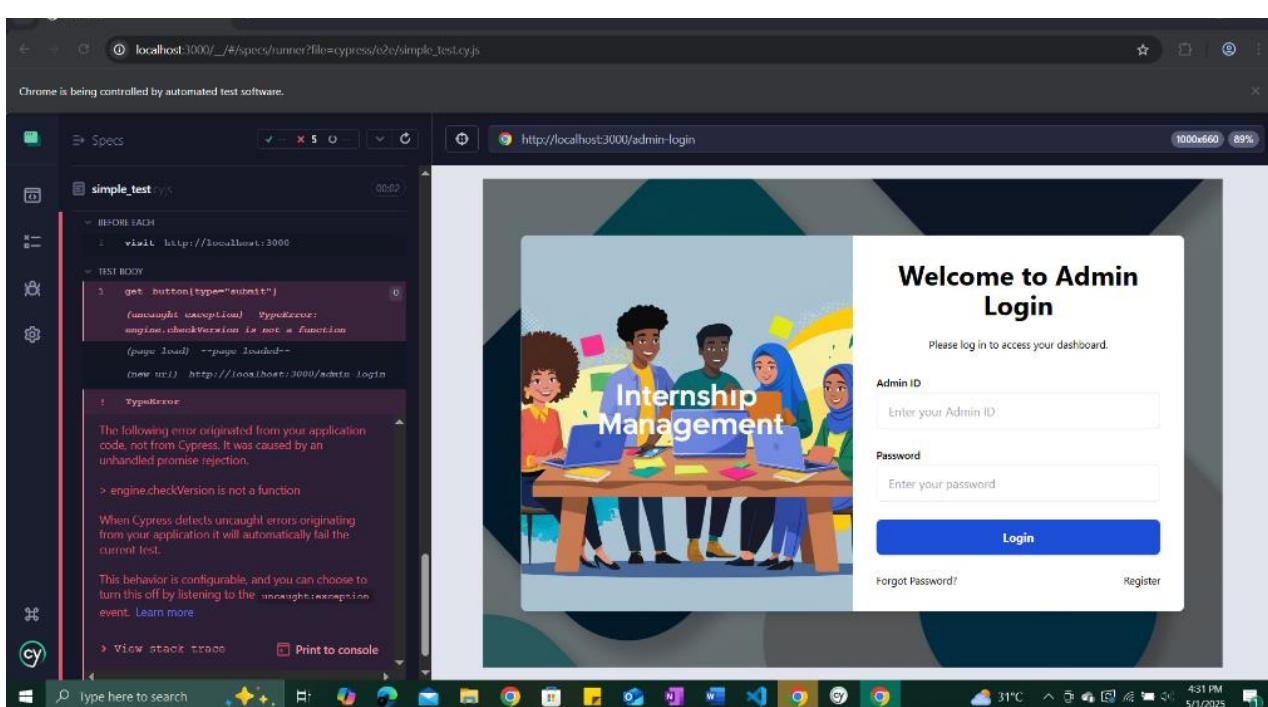


Figure 31

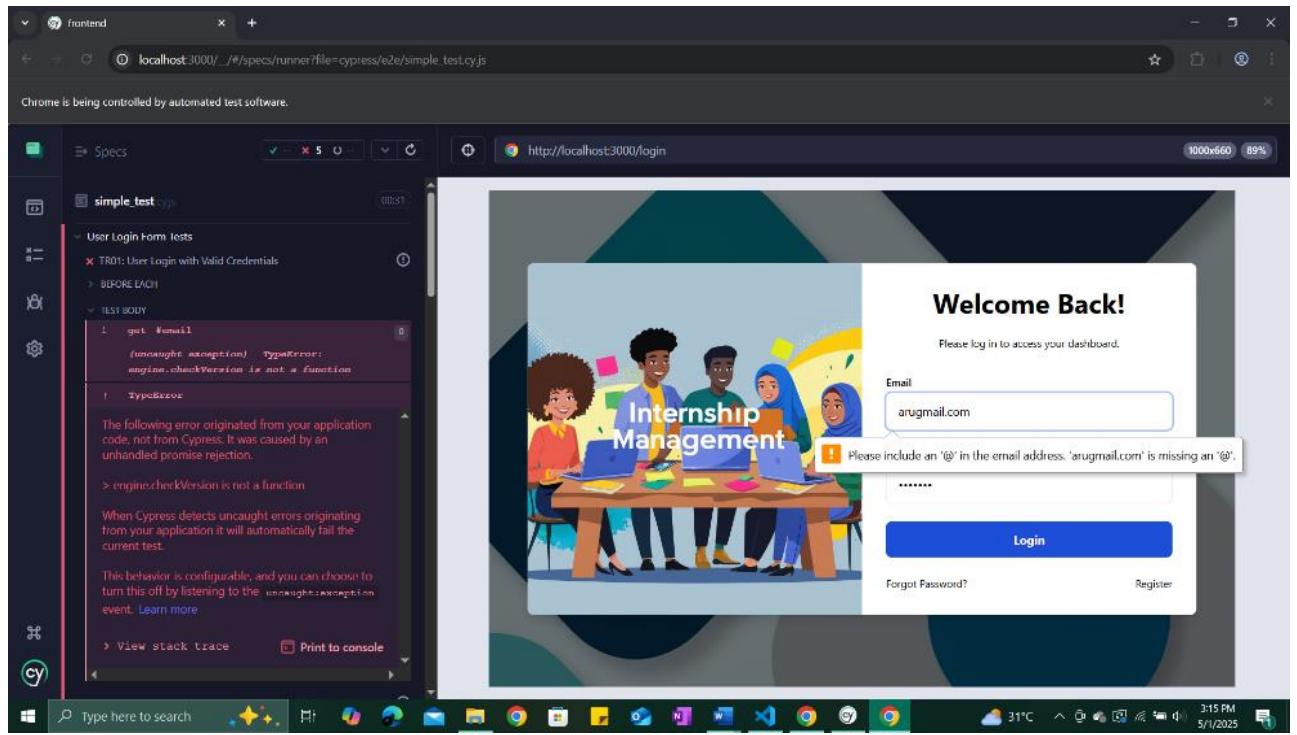


Figure 33

4. Conclusion

This project involved the development and quality assurance of several core components within a user registration and recruitment management system. The key modules included the Register function/page ,Add New CV page, Add New Interview function/page, and the Login function/page. Throughout the project, both manual and automation testing approaches were applied to ensure functionality, usability, and reliability. Manual testing was used to verify user interactions, form validations, and error handling, while automation testing was implemented to validate repetitive tasks and improve overall efficiency and coverage. As a result, critical issues such as duplicate email detection, form submission errors, and login feedback were successfully identified and addressed. The system was validated to be stable, user-friendly, and compliant with the functional requirements, ensuring a reliable experience for end users.