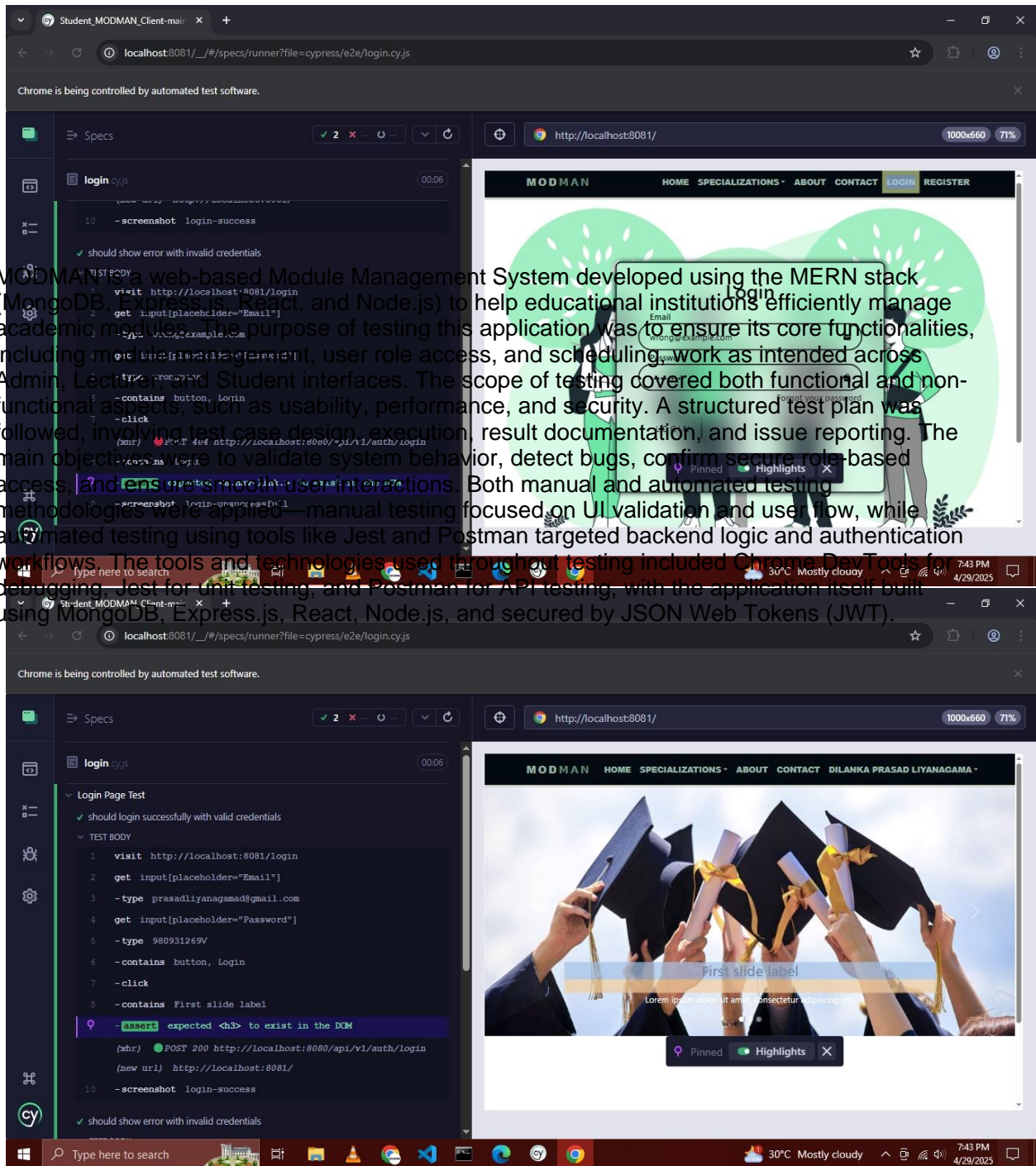MODMAN is a web-based Module Management System developed using the MERN stack (MongoDB, Express.js, React, and Node.js) to help educational institutions efficiently manage academic modules. The purpose of testing this application was to ensure its core functionalities, including module management, user role access, and scheduling, work as intended across Admin, Lecturer, and Student interfaces. The scope of testing covered both functional and non-functional aspects, such as usability, performance, and security. A structured test plan was followed, involving test case design, execution, result documentation, and issue reporting. The main objective was to validate system behavior, detect bugs, confirm secure role-based access, and ensure smooth user interactions. Both manual and automated testing methodologies were applied—manual testing focused on UI validation and user flow, while automated testing using tools like Jest and Postman targeted backend logic and authentication workflows. The tools and technologies used throughout testing included Chrome DevTools for debugging, Jest for unit testing, and Postman for API testing, with the application itself built using MongoDB, Express.js, React, Node.js, and secured by JSON Web Tokens (JWT).

Screenshot 1 (top):

Student_MODMAN_Client-main

localhost:8081/__/#/specs/runner?file=cypress/e2e/register.cy.js

Chrome is being controlled by automated test software.

Specs   ✓ 2 ✕ -- ↻ --

register.cy.js   00:09

✓ should show warning with empty ID field

▼ TEST BODY

```
1   visit http://localhost:8081/register
2   get input[placeholder="UserID"]
3   - type
4   get input[placeholder="Fullname"]
5   - type Dilanka Prasad Liyanagama
6   get input[placeholder="Email"]
7   - type prasadliyanagamad@gmail.com
8   get input[placeholder="NIC no"]
9   - type 980931269V
10  get input[placeholder="Mobile no"]
11  - type 0712413634
12  get input[placeholder="Password"]
13  - type 980931269V
14  get input[placeholder="What is your favourite color?"]
15  - type black
```

http://localhost:8081/register   1000x660 74%

MODMAN   HOME SPECIALIZATIONS▾ ABOUT CONTACT LOGIN REGISTER

Register

User ID

Full Name
Dilanka Prasad Liyanagama

Email
Email

National Identity Number
980931269V

Mobile Number
0712...

Passw...   📍 Pinned ● Highlights ✕

What is your favourite color?
black

29°C Mostly cloudy   8:35 PM 4/29/2025

Screenshot 2 (bottom):

Student_MODMAN_Client-main

localhost:8081/__/#/specs/runner?file=cypress/e2e/register.cy.js

Chrome is being controlled by automated test software.

Specs   ✓ 2 ✕ -- ↻ --

register.cy.js   00:09

Register Page Test

✓ should register successfully with user credentials

▼ TEST BODY

```
1   visit http://localhost:8081/register
2   get input[placeholder="UserID"]
3   - type IT21172878
4   get input[placeholder="Fullname"]
5   - type Dilanka Prasad Liyanagama
6   get input[placeholder="Email"]
7   - type prasadliyanagamad@gmail.com
8   get input[placeholder="NIC no"]
9   - type 980931269V
10  get input[placeholder="Mobile no"]
11  - type 0712413634
12  get input[placeholder="Password"]
13  - type 980931269V
14  get input[placeholder="What is your favourite color?"]
```

http://localhost:8081/register   1000x660 74%

MODMAN   HOME SPECIALIZATIONS▾ ABOUT CONTACT LOGIN REGISTER

Register

User ID
IT21172878

Full Name
Dilanka Prasad Liyanagama

Email
Email

National Identity Number
980931269V

Mobile Number
0712...

Passw...   📍 Pinned ● Highlights ✕

What is your favourite color?
black

29°C Mostly cloudy   8:35 PM 4/29/2025

Screenshot 1: register.cy.js

Student_MODMAN_Client-main

localhost:8081/__/#/specs/runner?file=cypress/e2e/register.cy.js

Specs ✓ 2 ✕ ⋯ ⟳ ⋯

http://localhost:8081/register 1000x660 74%

register.cy.js 00:09

```
 5    - type  Dilanka Prasad Liyanagama
 6    get   input[placeholder="Email"]
 7    - type  prasadliyanagamad@gmail.com
 8    get   input[placeholder="NIC no"]
 9    - type  980931269V
10    get   input[placeholder="Mobile no"]
11    - type  0712413634
12    get   input[placeholder="Password"]
13    - type  980931269V
14    get   input[placeholder="What is your favourite color?"]
15    - type  black
16    - contains  button, Sign Up
17    - click
18    - contains  Login
 ⚲    - assert  expected <a.nav-link.> to exist in the DOM
20    - screenshot  register-success
```

MODMAN HOME SPECIALIZATIONS ▾ ABOUT CONTACT LOGIN REGISTER

Register

User ID
IT21172878

Full Name
Dilanka Prasad Liyanagama

Email
Email

National Identity Number
980931269V

Mobile Number
0712...

⚲ Pinned ● Highlights ✕

Pass...
••••••••

What is your favourite color?

29°C Mostly cloudy 8:35 PM 4/29/2025

Screenshot 2: createGroup.cy.js

Student_MODMAN_Client-main

localhost:8081/__/#/specs/runner?file=cypress/e2e/createGroup.cy.js

Specs ✓ 1 ✕ ⋯ ⟳ ⋯

http://localhost:8081/dashboard/user/my-group 1000x660 74%

createGroup.cy.js 00:11

```
39    - click
40    url
41    - assert  expected
      http://localhost:8081/dashboard/user/my-group to
      include /dashboard/user/my-group

      (xhr)  ● POST 201
      http://localhost:8080/api/v1/group/register

      (new url)  http://localhost:8081/dashboard/user/my-group
42    - screenshot  group-registration-success
 ⚲    (xhr)  ● GET 200 https://student-
      modman.onrender.com/api/v1/group/get-all-groups

      (page load)  --page loaded--

      (new
      url)  http://localhost:8081/dashboard/user/assignment
      (xhr)  ● GET 200 /api/v1/auth/user-auth
      (xhr)  ● GET 200 /api/v1/assignment

      (new url)  http://localhost:8081/dashboard/user/my-group

      (xhr)  ● GET 200 https://student-
      modman.onrender.com/api/v1/group/get-all-groups
```

Project Group
My Group Details
My Assignment

member2	member2	2222222222	member2@gmail.com	JUNE	IT	member2	member2	member
member5	member5	5555555555	member5@gmail.com	JUNE	IT	member5	member5	member5
Dilanka	IT21172878	0712413634	it21172878@gmail.com	JUNE	IT	Prasad	IT21172878	Project Module Managem System
student3	student3	1234567890	student3@gmail.com	REGULAR	IT	student3	student3	Robotics
abd	IT211771	XXXXX	hahahah@GMAIL.COM	JUNE	IT	Namal	IT211771	itpm
Dilanka	REG123 0712345678		dilanka@gmail.com	REGULAR	IT	Liyanagama	LEAD123	AI-Based Health Ap

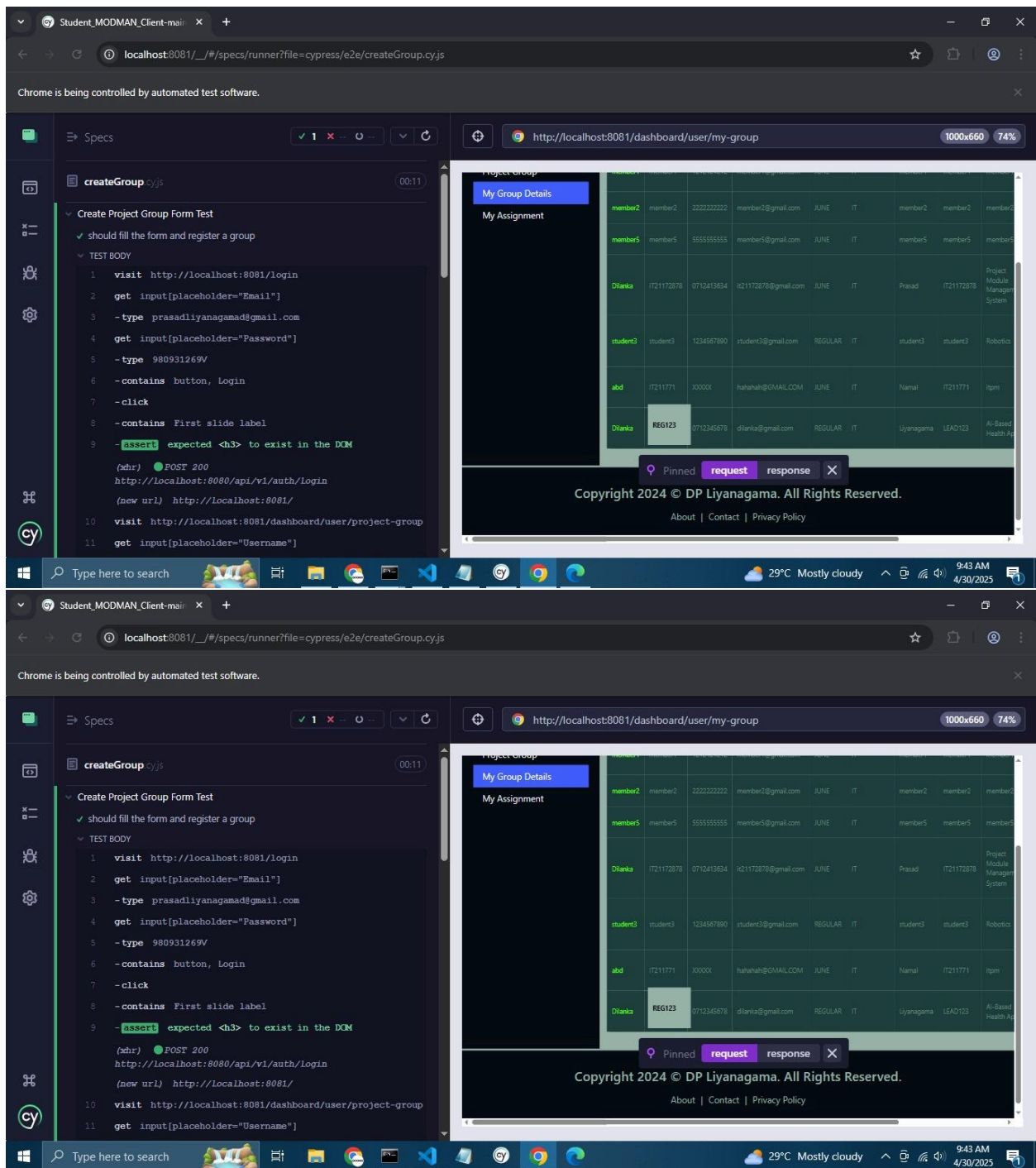⚲ Pinned **request** response ✕

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Student_MODMAN_Client-main

localhost:8081/__/#/specs/runner?file=cypress/e2e/createGroup.cy.js

Specs

✓ 1 ✗ ⟳

createGroup .cy.js 00:11

Create Project Group Form Test
✓ should fill the form and register a group

TEST BODY

```
1    visit  http://localhost:8081/login
2    get  input[placeholder="Email"]
3    -type  prasadliyanagamad@gmail.com
4    get  input[placeholder="Password"]
5    -type  980931269V
6    -contains  button, Login
7    -click
8    -contains  First slide label
9    -assert  expected <h3> to exist in the DOM

     (xhr)  ●POST 200
     http://localhost:8080/api/v1/auth/login
     (new url)  http://localhost:8081/
10   visit  http://localhost:8081/dashboard/user/project-group
11   get  input[placeholder="Username"]
```

http://localhost:8081/dashboard/user/my-group 1000x660 74%

Project Group
My Group Details
My Assignment

member2	member2	2222222222	member2@gmail.com	JUNE	IT	member2	member2	member2
member5	member5	5555555555	member5@gmail.com	JUNE	IT	member5	member5	member5
Dilanka	IT21172878	0712413634	it21172878@gmail.com	JUNE	IT	Prasad	IT21172878	Project Module Managem System
student3	student3	1234567890	student3@gmail.com	REGULAR	IT	student3	student3	Robotics
abd	IT211771	XXXXX	hahahah@GMAIL.COM	JUNE	IT	Namal	IT211771	itpm
Dilanka	REG123	0712345678	dilanka@gmail.com	REGULAR	IT	Liyanagama	LEAD123	AI-Based Health Ap

📍 Pinned **request** response ✕

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Student_MODMAN_Client-main +

localhost:8081/__/#/specs/runner?file=cypress/e2e/forgotPassword.cy.js

Specs ✓ 2 ✕ ... ○ ...

http://localhost:8081/forgot-password   1000x660 56%

forgotPassword .cy.js   00:07

✓ should show error with incorrect email or answer

∨ TEST BODY

1   visit http://localhost:8081/forgot-password
2   get input[placeholder="Email"]
3   - type wrongemail@gmail.com
4   get input[placeholder="Enter you given color while register"]
5   - type blue
6   get input[placeholder="Enter new password"]
7   - type doesntmatter
8   - contains button, Change Password
9   - click
    (xhr) ●POST 404 http://localhost:8080/api/v1/auth/forgot-password
10 - screenshot forgot-password-failure
    (alert) you entered wrong email or color name
📍 assert expected you entered wrong email or color name to include you entered
    wrong email or color name

MODMAN   HOME SPECIALIZATIONS ▾ ABOUT CONTACT LOGIN REGISTER

Reset Password

Email
wrongemail@gmail.com
What is your favourite color?
blue
New Password
••••••••••••

CHANGE PASSWORD

📍 Pinned

Student_MODMAN_Client-main +

localhost:8081/__/#/specs/runner?file=cypress/e2e/forgotPassword.cy.js

Specs ✓ 2 ✕ ... ○ ...

http://localhost:8081/forgot-password   1000x660 56%

forgotPassword .cy.js   00:07

∨ Forgot Password - Reset Tests

✓ should reset password with correct details and redirect to login

∨ TEST BODY

1   visit http://localhost:8081/forgot-password
2   get input[placeholder="Email"]
3   - type prasadliyanagamad@gmail.com
4   get input[placeholder="Enter you given color while register"]
5   - type black
6   get input[placeholder="Enter new password"]
7   - type newpassword123
8   - contains button, Change Password
9   - click
📍 (xhr) ●POST 200 http://localhost:8080/api/v1/auth/forgot-password
10 url
11 - assert expected http://localhost:8081/login to include /login
    (new url) http://localhost:8081/login
12 - screenshot forgot-password-success

MODMAN   HOME SPECIALIZATIONS ▾ ABOUT CONTACT LOGIN REGISTER

Reset Password

Email
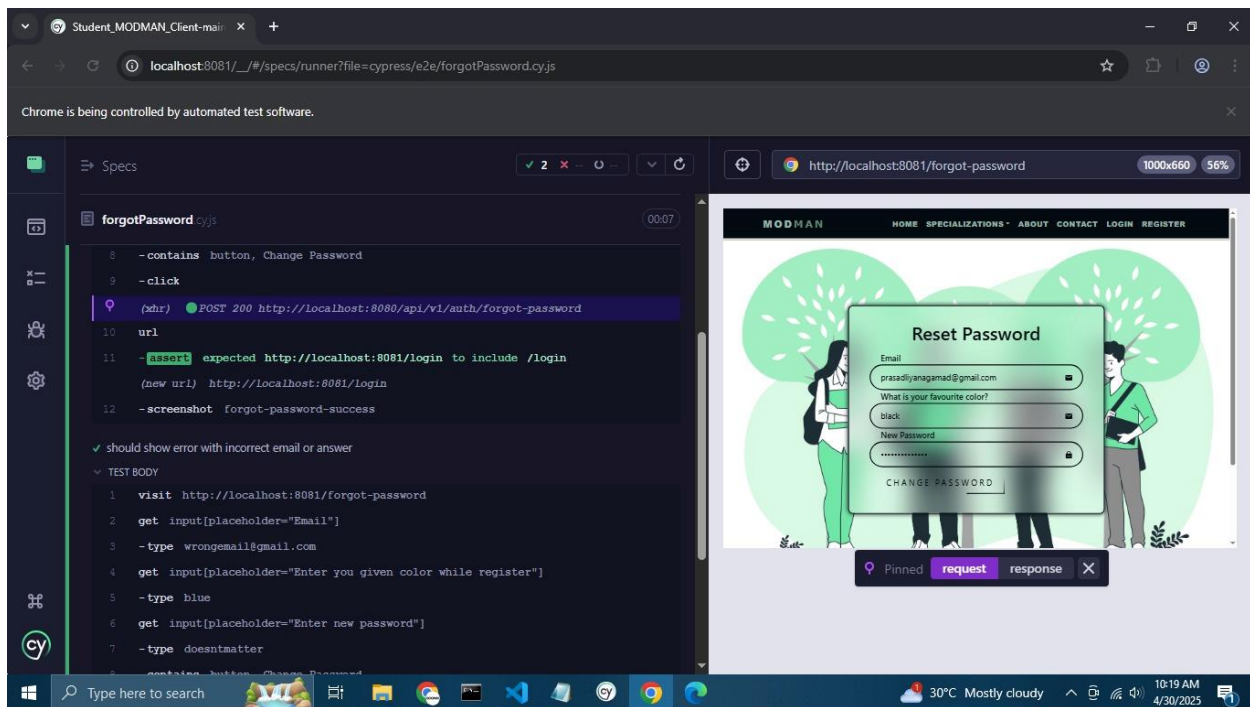prasadliyanagamad@gmail.com
What is your favourite color?
black
New Password
••••••••••••

CHANGE PASSWORD

📍 Pinned request response ✕

MODMAN is a web-based Module Management System developed using the MERN stack (MongoDB, Express.js, React, and Node.js) to help educational institutions efficiently manage academic modules. The purpose of testing this application was to ensure its core functionalities, including module management, user role access, and scheduling, work as intended across Admin, Lecturer, and Student interfaces. The scope of testing covered both functional and non-functional aspects, such as usability, performance, and security. A structured test plan was followed, involving test case design, execution, result documentation, and issue reporting. The main objectives were to validate system behavior, detect bugs, confirm secure role-based access, and ensure smooth user interactions. Both manual and automated testing methodologies were applied—manual testing focused on UI validation and user flow, while automated testing using tools like Jest and Postman targeted backend logic and authentication workflows. The tools and technologies used throughout testing included Chrome DevTools for debugging, Jest for unit testing, and Postman for API testing, with the application itself built using MongoDB, Express.js, React, Node.js, and secured by JSON Web Tokens (JWT).