



IT314: Software Engineering Group-33

System Testing

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Black Box Testing

Register Page

Email Constraints:

- Must include the '@' symbol with characters present on both sides.
- Cannot already be registered.

Password Constraints:

- Should include at least one uppercase letter (A-Z).
- Should include at least one lowercase letter (a-z).
- Should include at least one digit (0-9).
- Should include at least one special character (!@#\$%^&*).
- Must be between 8 and 12 characters long.

Password Confirmation:

- Must match the entered password exactly.

Role Selection:

- Users can select one of two roles: Instructor or Student.

Equivalence Class Partitioning

Equivalence Class	Email	Password	Password Confirmation	Result
E1	Valid	Valid	Matches	Success
E2	Invalid	Valid	Matches	Error
E3	Valid	Invalid	Matches	Error
E4	Valid	Valid	Does not match	Error
E5	Invalid	Invalid	Matches	Error
E6	Invalid	Valid	Does not match	Error
E7	Valid	Invalid	Does not match	Error
E8	Invalid	Invalid	Does not match	Error

Boundary Value Analysis

E-mail	Password	Username	Confirm Password	Role	Expected Output	Actual Output	Reason
a@	Abcd@123	Kaushik	Abcd@123	In	Fail	Fail	Email constraint (missing domain)
@gmail.com	Abcd@123	Kaushik	Abcd@123	In	Fail	Fail	Email constraint (missing username)
abc@gmail.com	abcd123	Kaushik	abcd123	In	Fail	Fail	Password constraint (missing special character)
abc@gmail.com	Abcd@123	..	Abcd@123	In	Fail	Fail	Username constraint (empty field)
abc@gmail.com	Abcd@123	Kaushik	abcd@123	In	Fail	Fail	Confirm Password constraint (mismatch)
abc@gmail.com	Abcd@123	KaushikDoe12345	Abcd@123	St	Fail	Fail	Username constraint (too long)
abc@gmail.com	Abcd@123	Kaushik	Abcd@123	St	Success	Success	All inputs valid
abc@gmail.com (already registered)	Abcd@123	Kaushik	Abcd@123	St	Fail	Fail	Email already registered

Here In is a short form for instructor and St is a short form for student.

Login Page

Email Constraint:

- This field is required (cannot be empty).
- The email address must be already registered in the system.

Password Constraint:

- This field is required (cannot be empty).
- The password will not be checked for further constraints, as it has already been validated and stored in the database.

Equivalence Class Partitioning

Equivalence Class	Email	Password	Expected Output	Actual Output	Reason
E1	Valid, Registered	Valid	Success	Success	Both email and password are valid.
E2	Invalid, Not Registered	Valid	Fail	Fail	Email is not registered.
E3	Invalid (empty)	Valid	Fail	Fail	Email is empty.
E4	Valid, Registered	Invalid (empty)	Fail	Fail	Password is empty.
E5	Invalid, Not Registered	Invalid (empty)	Fail	Fail	Email not registered and password is empty.
E6	Invalid (empty)	Invalid (empty)	Fail	Fail	Both email and password are empty.

Boundary Value Analysis

Email	Password	Expected Output	Actual Output	Reason
a@	Abcd@123	Fail	Fail	Email constraint (invalid email format)
@gmail.com	Abcd@123	Fail	Fail	Email constraint (invalid email format)
abc@gmail.com	Abcd@123	Success	Success	Valid email and password
abc@gmail.com	``	Fail	Fail	Password constraint (empty password)
abc@gmail.com	Abcd@123	Fail	Fail	Not registered email

Edit Profile Page

Email Constraints:

- Must include the '@' symbol with characters present on both sides.
- Cannot already be registered.

Password Constraints:

- Should include at least one uppercase letter (A-Z).
- Should include at least one lowercase letter (a-z).
- Should include at least one digit (0-9).
- Should include at least one special character (!@#\$%^&*).
- Must be between 8 and 12 characters long.

Description Constraints:

- The description is optional (can be empty).
- No specific constraints are applied (except for general length constraints of the text field).

Image Constraints:

- The image field only accepts image files, so invalid inputs are not allowed.

Equivalence Class Partitioning

Equivalence Class	Username	Email	Password	Expected Output	Actual Output	Reason
E1	Valid	Valid, Not Registered	Valid	Success	Success	All inputs are valid.
E2	Valid	Valid, Already Registered	Valid	Fail	Fail	Email already registered.
E3	Invalid (Empty)	Valid, Not Registered	Valid	Fail	Fail	Username is empty.
E4	Valid	Invalid (Empty)	Valid	Fail	Fail	Email is empty.
E5	Valid	Valid, Not Registered	Invalid (Empty)	Fail	Fail	Password is empty.

Boundary Value Analysis

Username	Email	Password	Confirm Password	Description	Expected Output	Actual Output	Reason
user123456789	user@gm ail.com	Abcd@123	Abcd@123	Valid text	Success	Success	All valid inputs.
user	user@co m	Abcd@123	Abcd@123	Valid text	Fail	Fail	Invalid email format.
user	user@gm ail.com	Abcd@123	Abcd@123	Invalid text	Success	Success	Description is optional.
user	user@gm ail.com	Abcd@123	Abcd@123	(Empty)	Success	Success	Description empty (valid).
user	user@gm ail.com	Abcd@123	Abcd1234	Valid text	Fail	Fail	Password and Confirm Password mismatch.
user	user@gm ail.com	Abcd@123	(Empty)	Valid text	Fail	Fail	Confirm Password is empty.

Create Course Page and Edit Course Page

Constraints:

Category and Level can only be selected from the drop-down list. The price of the course can not be negative. In the image field only an image file can be selected.

Equivalence Class Partitioning

Equivalence Class	Course Title	Subtitle	Description	Welcome Message	Category	Level	Pricing	Result
E1	Valid (≤ 100 chars)	Valid (≤ 150 chars)	Valid	Valid (≤ 200 chars)	Valid dropdown	Valid dropdown	Valid ($\geq 0, \leq 99999$)	Success
E2	Invalid (empty)	Valid (≤ 150 chars)	Valid	Valid (≤ 200 chars)	Valid dropdown	Valid dropdown	Valid ($\geq 0, \leq 99999$)	Error
E3	Valid (≤ 100 chars)	Invalid (> 150 chars)	Valid	Valid (≤ 200 chars)	Valid dropdown	Valid dropdown	Valid ($\geq 0, \leq 99999$)	Error
E4	Valid (≤ 100 chars)	Valid (≤ 150 chars)	Valid	Invalid (> 200 chars)	Valid dropdown	Valid dropdown	Valid ($\geq 0, \leq 99999$)	Error
E5	Valid (≤ 100 chars)	Valid (≤ 150 chars)	Valid	Valid (≤ 200 chars)	Invalid (not selected)	Valid dropdown	Valid ($\geq 0, \leq 99999$)	Error
E6	Valid (≤ 100 chars)	Valid (≤ 150 chars)	Valid	Valid (≤ 200 chars)	Valid dropdown	Invalid (not selected)	Valid ($\geq 0, \leq 99999$)	Error
E7	Valid (≤ 100 chars)	Valid (≤ 150 chars)	Valid	Valid (≤ 200 chars)	Valid dropdown	Valid dropdown	Invalid (< 0)	Error
E8	Valid (≤ 100 chars)	Valid (≤ 150 chars)	Valid	Valid (≤ 200 chars)	Valid dropdown	Valid dropdown	Invalid (> 99999)	Error

Boundary Value Analysis

Field	Boundary Condition	Input	Expected Output	Reason
Course Title	Empty	""	Fail	Field cannot be empty.
	1 character	"A"	Pass	Minimum valid input.
	100 characters	"A...A" (100 chars)	Pass	Maximum valid input.
	101 characters	"A...A" (101 chars)	Fail	Exceeds maximum limit.
Subtitle	150 characters	"A...A" (150 chars)	Pass	Maximum valid input.
	151 characters	"A...A" (151 chars)	Fail	Exceeds maximum limit.
Welcome Message	200 characters	"A...A" (200 chars)	Pass	Maximum valid input.
	201 characters	"A...A" (201 chars)	Fail	Exceeds maximum limit.
Category	Valid option selected	"Programming" (from dropdown)	Pass	Valid input.
	No option selected	""	Fail	Field cannot be empty.
Level	Valid option selected	"Beginner" (from dropdown)	Pass	Valid input.
	No option selected	""	Fail	Field cannot be empty.
Pricing	Negative number	-1	Fail	Price cannot be negative.
	Minimum valid value	0	Pass	Minimum valid input.
	Maximum valid value	99999	Pass	Maximum valid input.
	Exceeds maximum valid value	100000	Fail	Exceeds maximum limit.
	Non-numeric input	"abc"	Fail	Invalid input type.
	Empty	""	Fail	Field cannot be empty.

Create and Edit Quiz Pages

Constraints:

The course name must be selected from the dropdown list, and the correct answer can only be chosen from the four available options.

Equivalence Class Partitioning

Equivale nce Class	Passing Score (%)	Question	Options	Correct Answer	Result
E1	Valid (0 - 100)	Valid (1 - 200 chars)	Valid (1 - 100 chars each)	Valid Option (1 - 4)	Success
E2	Invalid (< 0 or > 100)	Valid (1 - 200 chars)	Valid (1 - 100 chars each)	Valid Option (1 - 4)	Error
E3	Valid (0 - 100)	Invalid (0 chars)	Valid (1 - 100 chars each)	Valid Option (1 - 4)	Error
E4	Valid (0 - 100)	Valid (1 - 200 chars)	Invalid (0 chars or >100)	Valid Option (1 - 4)	Error
E5	Valid (0 - 100)	Valid (1 - 200 chars)	Valid (1 - 100 chars each)	Invalid Option (not 1-4)	Error
E6	Valid (0 - 100)	Valid (1 - 200 chars)	Valid (1 - 100 chars each)	Invalid Correct Answer	Error

Boundary Value Analysis

Field	Boundary Value	Test Case Description
Passing Score (%)	-1 (invalid)	Passing score less than 0 (invalid input).
	0	Lower boundary: passing score is 0%.
	100	Upper boundary: passing score is 100%.
	101 (invalid)	Passing score greater than 100 (invalid input).
Question	0 characters (invalid)	Question with 0 characters (invalid input).
	1 character	Lower boundary: valid question with 1 character.

	200 characters	Upper boundary: valid question with 200 characters.
	201 characters (invalid)	Question with more than 200 characters (invalid input).
Options	0 characters (invalid)	Option with 0 characters (invalid input).
	1 character	Lower boundary: valid option with 1 character.
	100 characters	Upper boundary: valid option with 100 characters.
	101 characters (invalid)	Option with more than 100 characters (invalid input).
Correct Answer	Option not in range (invalid)	Correct answer is not a valid option (invalid input).
	Option 1, Option 2, Option 3, Option 4	Valid correct answers: must be one of the four options.

Feedback Page

Constraints

The user can only select five possible values of the rating field.

Equivalence Class Partitioning

Equivalence Class	Rating	Comments	Result
E1	Selected (1–5)	Valid (\leq 500 chars)	Success
E2	Not selected	Valid (\leq 500 chars)	Error
E3	Selected (1–5)	Empty	Error
E4	Selected (1–5)	Exceeds 500 chars	Error

Boundary Value Analysis

Test Case	Rating	Comments	Boundary Condition	Result
B1	1 (min value)	Valid (1 char)	Lower boundary for Rating and Comments	Success
B2	5 (max value)	Valid (500 chars)	Upper boundary for Rating and Comments	Success
B3	Not selected	Valid (1 char)	Rating not provided	Error
B4	1 (min value)	Empty	Lower boundary for Comments (invalid)	Error
B5	5 (max value)	Exceeds 500 chars	Upper boundary exceeded for Comments	Error

Acceptance Level Testing

Register Page

Testcase - 01

Email: a@

Password: Abcd@123

Role: Instructor

Username: Kaushik

Confirm Password: Abcd@123

Output: Fail

The screenshot shows the 'Create a new account' form on the Learnit website. The 'Instructor' button is selected. The username field contains 'Kaushik'. The email field contains 'a@', which is incomplete. A validation message 'Please enter a part following "@". "a@" is incomplete.' is displayed above the email field. The password field contains '.....'. The 'Register' button is at the bottom. A watermark of a smiling man holding books is visible on the right.

Testcase - 02

Email: @gmail.com

Password: Abcd@123

Role: Instructor

Username: Kaushik

Confirm Password: Abcd@123

Output: Fail

The screenshot shows the 'Create a new account' form on the Learnit website. The 'Instructor' button is selected. The username field contains 'Kaushik'. The email field contains '@gmail.com', which is incomplete. A validation message 'Please enter a part followed by "@". "@gmail.com" is incomplete.' is displayed above the email field. The password field contains '.....'. The 'Register' button is at the bottom. A watermark of a smiling man holding books is visible on the right.

Testcase - 03

Email: Kaushik@gmail.com
Password: abc123
Role: Instructor

Username: Kaushik
Confirm Password: abc123
Output: Fail

The screenshot shows the 'Create a new account' form on the LearnIt website. The form has two tabs: 'Student' (selected) and 'Instructor'. The 'Username' field contains 'Kaushik', the 'Email' field contains 'abc@gmail.com', the 'Password' field contains 'abcd123', and the 'Confirm Password' field contains '.....'. Below the 'Password' field is a tooltip: 'Password must contain a capital letter, a small letter, a number, a special character, and be 8-12 characters long.' At the bottom of the form is a 'Register' button in orange. In the bottom right corner of the form area, there is a link 'Already a member? Login'. The background of the page features a dark blue grid pattern and a photograph of a smiling man with a beard holding several books.

Testcase - 04

Email: Kaushik@gmail.com
Password: Abcd@123
Role: Instructor

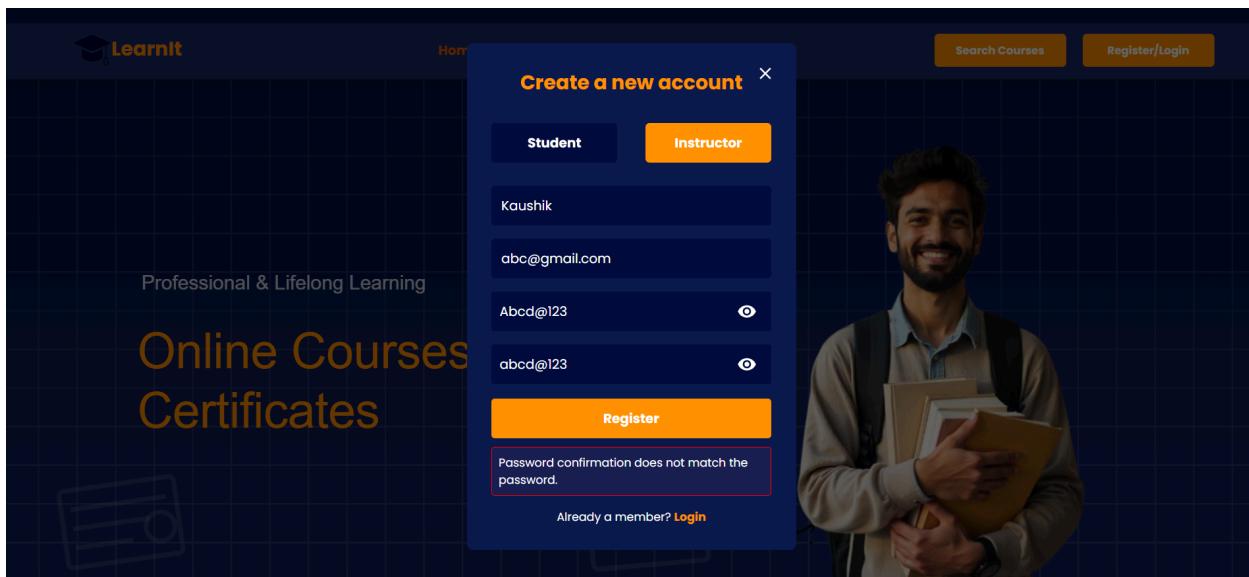
Username: (Empty)
Confirm Password: Abcd@123
Output: Fail

The screenshot shows the 'Create a new account' form on the LearnIt website. The form has two tabs: 'Student' (selected) and 'Instructor'. The 'Email' field contains 'abc@gmail.com', the 'Password' field contains 'Abcd@123', and the 'Confirm Password' field also contains 'Abcd@123'. The 'Username' field is empty, which triggers an error message: 'Please fill out this field.' Below the 'Password' field is a tooltip: 'Password must contain a capital letter, a small letter, a number, a special character, and be 8-12 characters long.' At the bottom of the form is a 'Register' button in orange. In the bottom right corner of the form area, there is a link 'Already a member? Login'. The background of the page features a dark blue grid pattern and a photograph of a smiling man with a beard holding several books.

Testcase - 05

Email: Kaushik@gmail.com
Password: Abcd@123
Role: Instructor

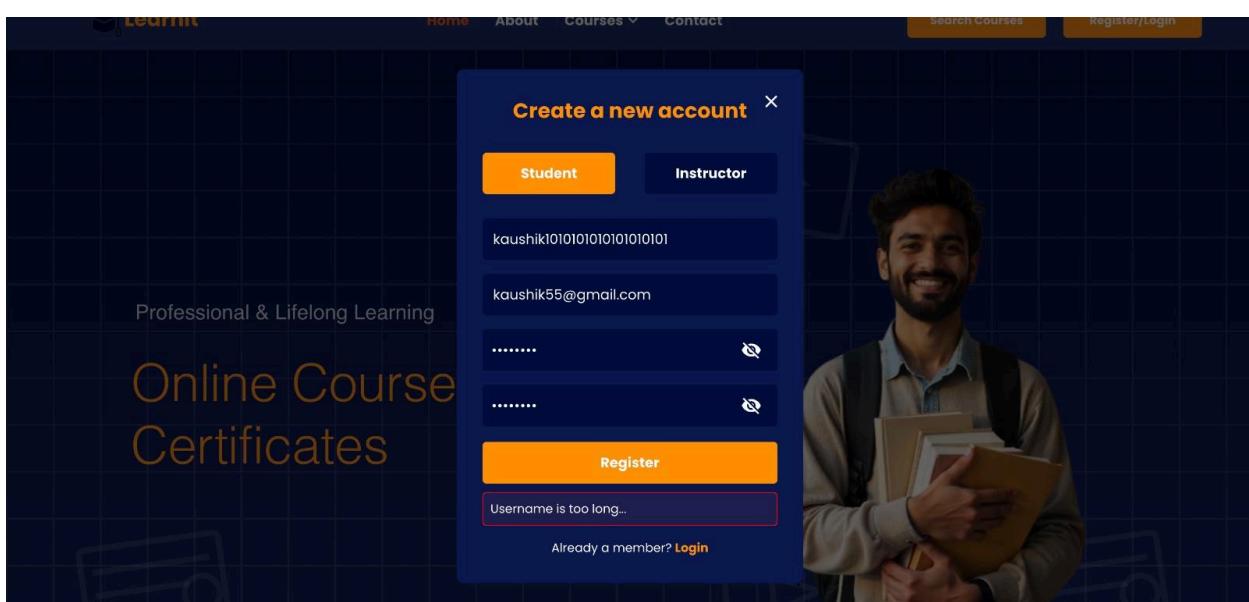
Username: kaushik
Confirm Password: abcd@123
Output: Fail



Testcase - 06

Email: kaushik55@gmail.com
Password: Abcd@123
Role: Student

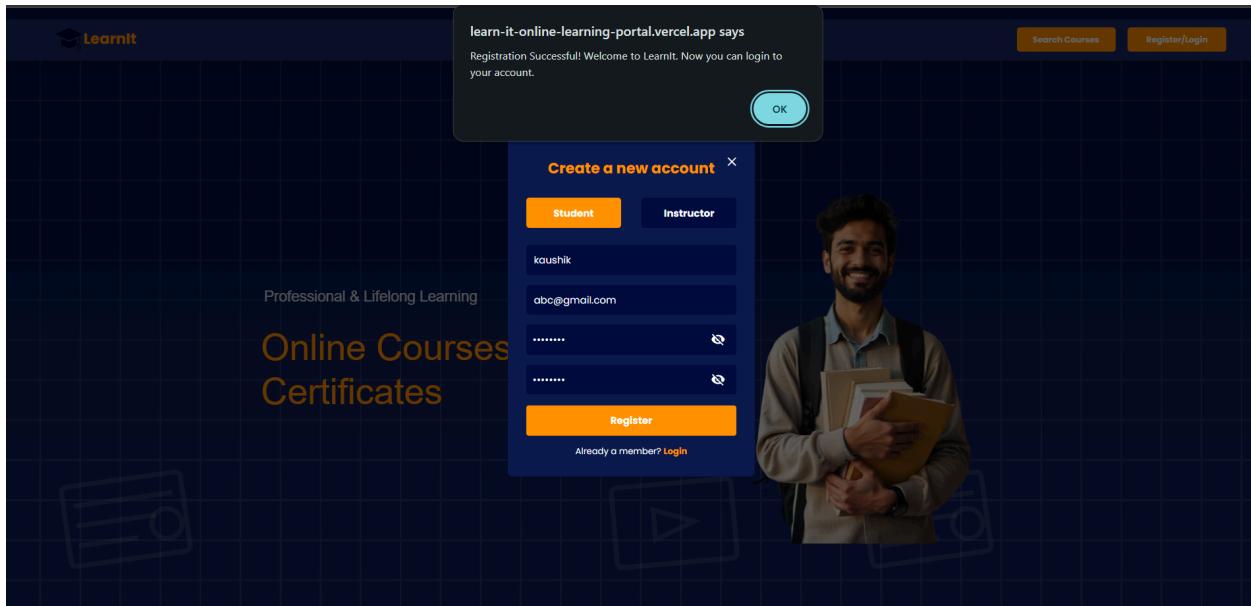
Username: Kaushik101010101010101
Confirm Password: Abcd@123
Output: Fail



Testcase - 07

Email: abc@gmail.com
Password: Abcd@123
Role: Student

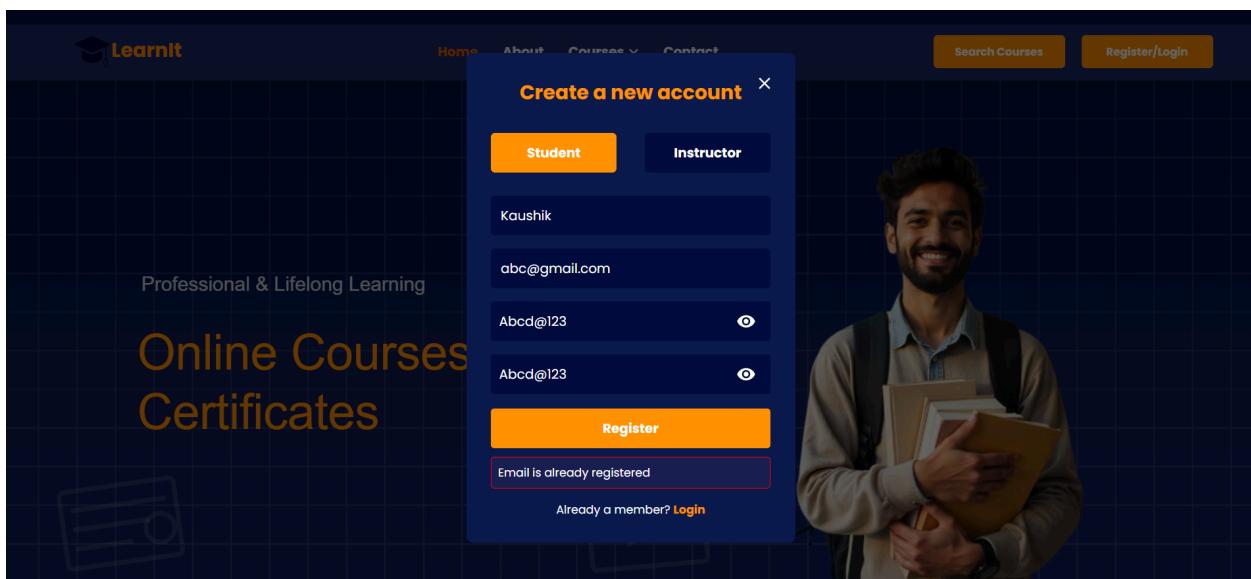
Username: Kaushik
Confirm Password: Abcd@123
Output: Success



Testcase - 08

Email: abc@gmail.com (already registered)
Password: Abcd@123
Role: Student

Username: Kaushik
Confirm Password: Abcd@123
Output: Fail



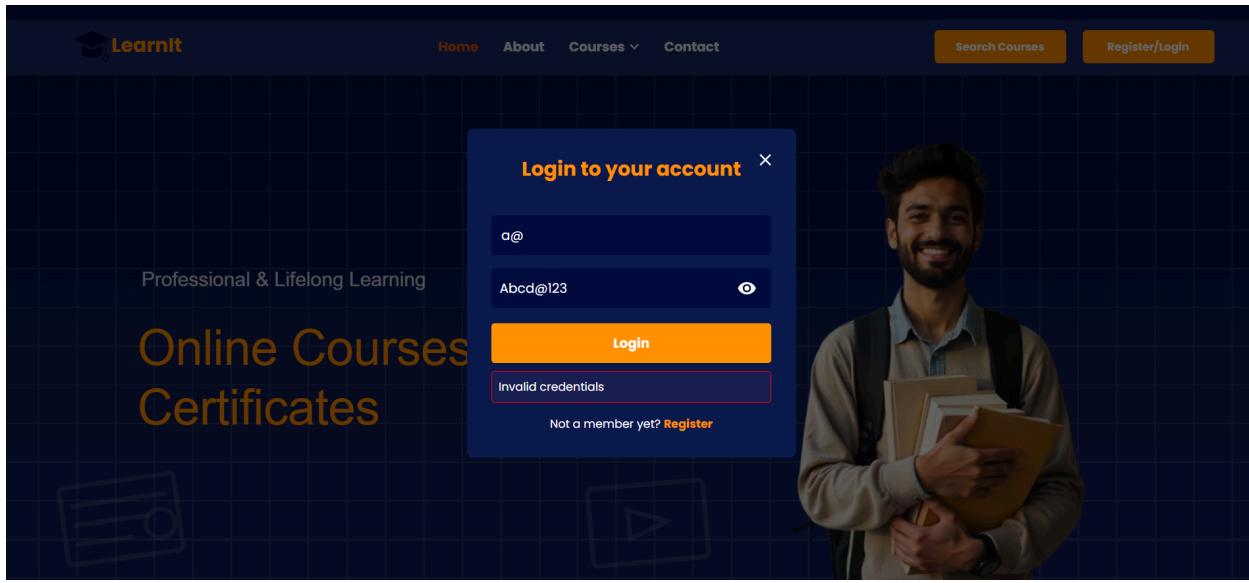
Login Page

Testcase - 01

Email: @a

Password: Abcd@123

Output: Fail

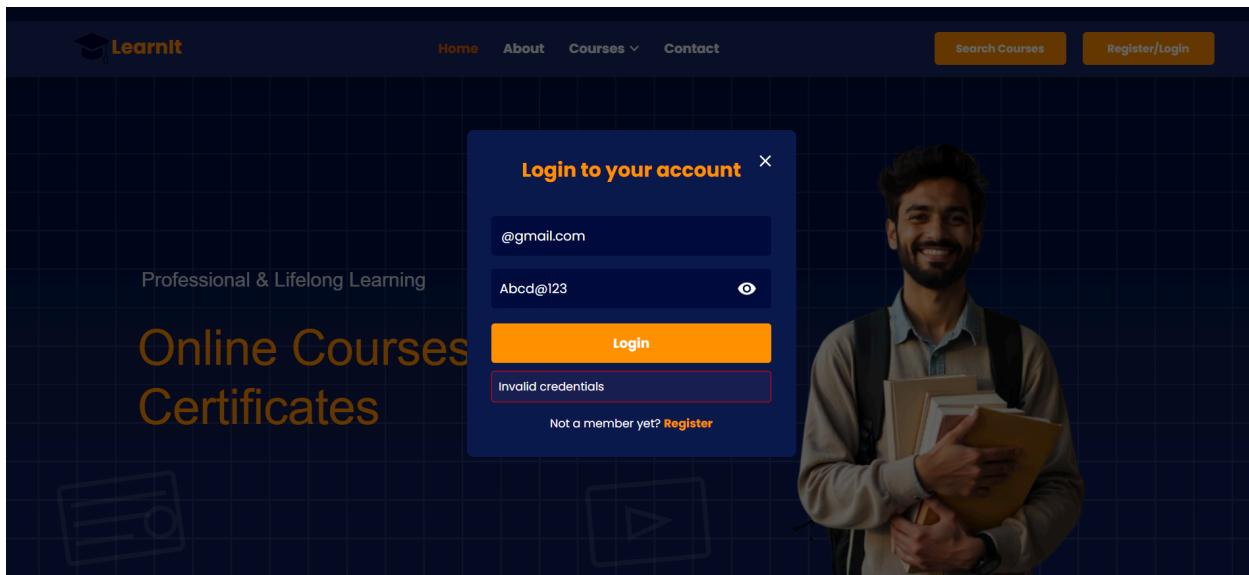


Testcase - 02

Email: @gmail.com

Password: Abcd@123

Output: Fail

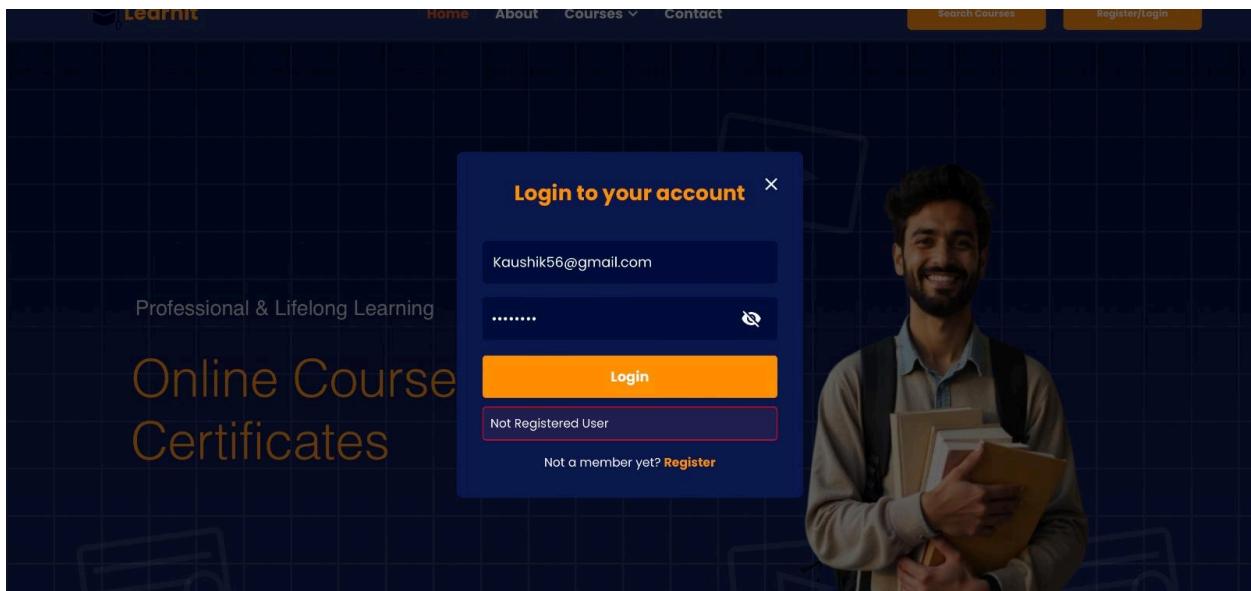


Testcase - 03

Email: kaushik56@gmail.com

Password: Abcd@123

Output: Fail

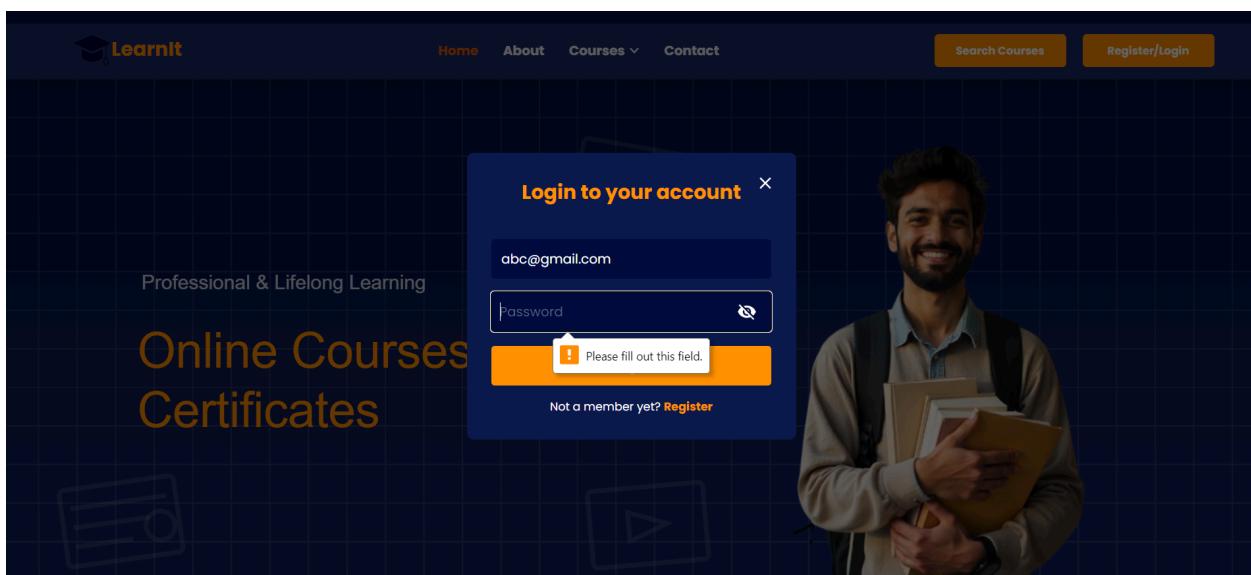


Testcase - 04

Email: ABC@gmail.com

Password: (empty)

Output: Fail



Edit Profile Page

Testcase - 01

Username: user12364564789

Password: Abcd@123

Output: Success

Email: user@gmail.com

Confirm Password: Abcd@123

The screenshot shows the LearnIt platform's profile edit page. A success message 'Profile updated successfully!' is displayed in a white box at the top right. The main form contains fields for Username (user12364564789), Email (user@gmail.com), Password (Abcd@123), Confirm Password (Abcd@123), and a Description text area ('Enthusiastic learner and tech enthusiast. Passionate about coding and exploring new technologies.'). An orange 'Save Changes' button is at the bottom. On the left, there's a placeholder for a profile picture and a 'Choose File' button.

Testcase - 02

Username: user

Password: Abcd@123

Output: Fail

Email: user@gmail.com

Confirm Password: Abcd@123

The screenshot shows the LearnIt platform's profile edit page. The 'Edit Profile' heading is at the top. The form fields are identical to Testcase 01. However, the 'Email' field contains 'user@gmail' instead of 'user@gmail.com'. A red error message 'Invalid email format. Email should contain "@" with characters before and after.' is displayed below the email input field. The 'Save Changes' button is at the bottom.

Testcase - 03

Username: user

Password: Abcd@123

Output: Fail

Email: user@gmail.com

Confirm Password: Abcd123

The screenshot shows the 'Edit Profile' page of the LearnIt website. The user's profile picture is a placeholder of a person in a suit. The form fields are filled with the provided test data. An error message 'Passwords do not match.' is displayed in a red box below the password fields. The 'Save Changes' button is highlighted in orange.

Testcase - 04

Username: user

Password: Abcd@123

Output: Fail

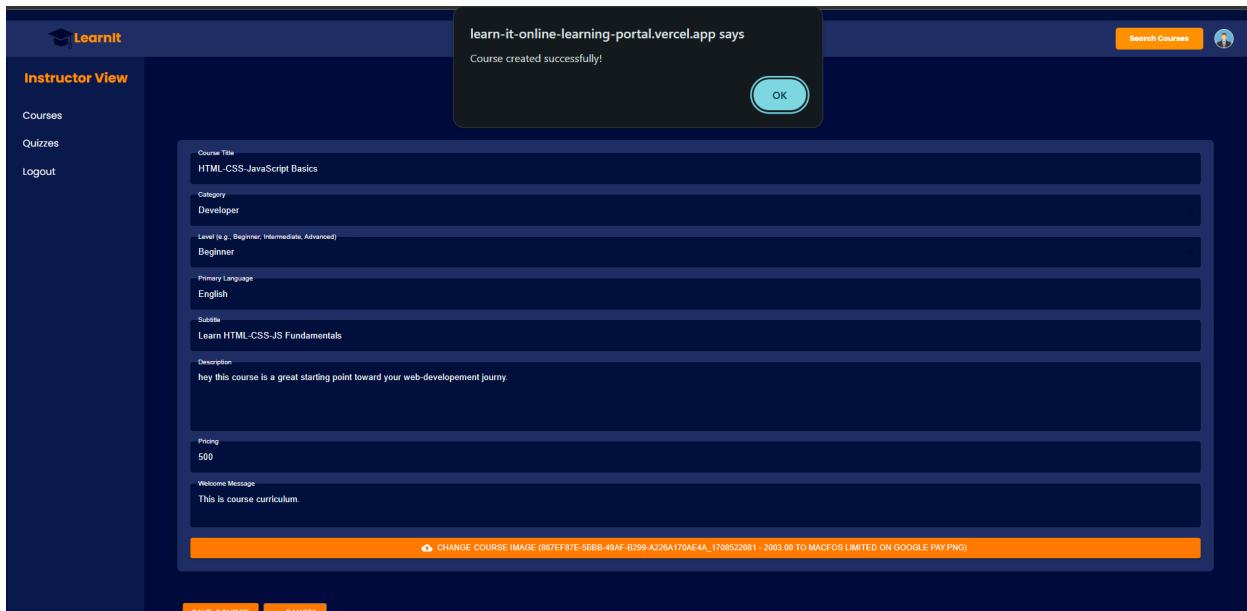
Email: user@gmail.com

Confirm Password: (empty)

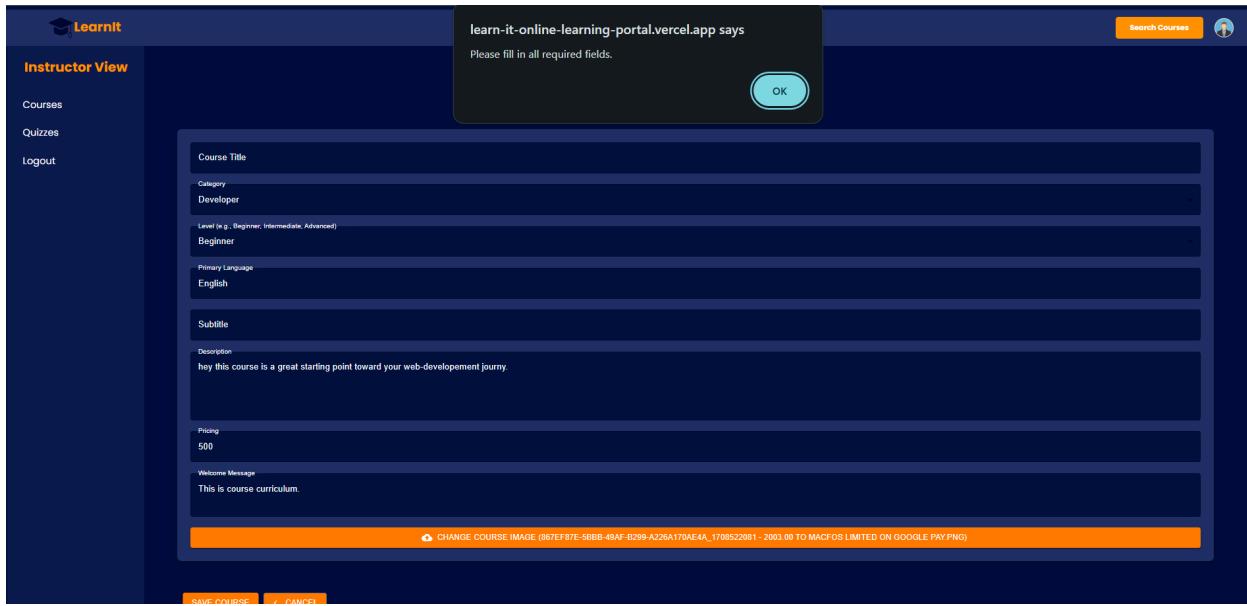
The screenshot shows the 'Edit Profile' page of the LearnIt website. The user's profile picture is a placeholder of a person in a suit. The form fields are filled with the provided test data. An error message 'Passwords do not match.' is displayed in a red box below the password fields. The 'Save Changes' button is highlighted in orange.

Create Course Page

Testcase - 01 : All valid Inputs



Testcase - 02 : Leaving some input fields empty.



Create Quiz Page

Testcase - 01 : All valid Inputs

The screenshot shows the 'Instructor View' of the Learnit platform. A modal window displays the message 'learn-it-online-learning-portal.vercel.app says Quiz created successfully!' with an 'OK' button. The main form contains fields for 'Course Name' (Python Advanced Course) and 'Passing Score (%)' (70). Below these, a question is defined: 'Question 1 - Which keyword is used to define a Function in Python?' with options 'for', 'def', 'match', and 'fun'. The correct answer is marked as 'Option 2'. At the bottom right of the form is an 'ADD QUESTION' button.

Testcase - 02 : All valid inputs other than true answer of the Question.

The screenshot shows the 'Instructor View' of the Learnit platform. A modal window displays the message 'learn-it-online-learning-portal.vercel.app says Failed to create quiz' with an 'OK' button. The main form contains fields for 'Course Name' (Java Fundamentals) and 'Passing Score (%)' (60). Below these, a question is defined: 'Question 1 - Which of the following is not an primary datatype in JAVA?' with options 'Integer', 'String', 'bool', and 'Float'. The correct answer is marked as 'Option 2'. At the bottom right of the form is an 'ADD QUESTION' button. At the bottom left is a 'CANCEL' button, and at the bottom right is a 'SAVE QUIZ' button.

Test Description	Expected Output	Displayed Output
1. Register	The user should be registered	User successfully gets registered.
2. Login	The user should be logged in	User successfully gets logged in.
3. Logout	The user should be logged out	User successfully gets logged out.
4. View Profile	The user should be able to view their profile	User can see their profile successfully
5. Update Profile	The user should be able to update their profile	User can update their profile successfully.
6. Change Password	The user should be able to change their password within the constraints	User can change their password successfully
7. Search Courses	The user should be able to search the courses with appropriate title	The user can search for the courses that they want.
8. View Course	The student should be able the course they want to buy	Student can see the preview of the course by searching and clicking on it.
9. Take Demo Lectures	The student should be able to watch a demo lecture of the course they want to buy.	Student can see demo lectures successfully.
10. Give Course Feedback	The Student should be able to give course feedback form.	Student can successfully give feedback form at the end of the course.
11. Watch Course Videos	The Student should be able watch the course videos.	Student can successfully watch the course video from their profile.
12. Take Quiz	The Student should be able to take quiz.	Student can successfully take quiz from the course module.

13. View Leaderboard	The Student should be able to view leaderboard.	Student can see the leaderboard of other student in the course module
14. Create Course	The instructor should be able to create course	Instructor can create the course from the dashboard.
15. Create Quiz	The instructor should be able to create quiz	The instructor can successfully create quiz through the create quiz button
16. Update Course	The instructor should be able to update course	The instructor can successfully update course through the update course button
17. Update Quiz	The instructor should be able to update quiz	The instructor can successfully update quiz through the update quiz button
18. Upload Course Materials	The instructor should be able to upload course materials	The instructor can successfully upload course materials through the dashboard
19. Filter Courses	The user should be able to filter the course they want to search	User can successfully filter the course while searching through the filter button.
20. Upload course videos	The instructor should be able to upload course videos	Instructor can successfully upload course video through upload course video.
21. Grade Quiz	The instructor should be able to see the student submission and grade it.	The instructor can successfully see the student submission can grade it.
22. Bookmark Course	The student should be able to bookmark the course.	Student can successfully bookmark the course