

BlackBox Testing

Login

Generic Case			
Test ID	Test Input	Expected Output	Actual Output
1	Login with valid account username and password	The system returns back to homepage with navbar indicating successful login	The system returns back to homepage with navbar indicating successful login
2	Login with incomplete fields (email, password)	The system prompts the user to fill up the required fields for login	The system prompts the user to fill up the required fields for login
3	Login with wrong email regex (regular expression)	The system prompts the user to re-enter the email. It will display the corresponding error message	The system prompts the user to re-enter the email. It will display the corresponding error message
4	Login with email length more than 300 characters	The system prompts the user to re-enter the email. It will display the corresponding error message	The system prompts the user to re-enter the email. It will display the corresponding error message
5	Login with an unregistered email address	The system prompts the user to re-enter the email. It will display the corresponding error message	The system prompts the user to re-enter the email. It will display the corresponding error message
6	Login with password less than 6 characters, or greater than 50 characters	The system prompts the user to re-enter the password. It will display the corresponding error message	The system prompts the user to re-enter the password. It will display the corresponding error message

7	Login with incorrect password	The system prompts the user to re-enter the password. It will display the corresponding error message	The system prompts the user to re-enter the password. It will display the corresponding error message
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In Particular				
Test Case	Email	Password	Expected Output	Actual Output
1	test@gmail.com	testpass	Successful login	Successful login
2	Empty("")	testpass	Please fill in all required fields	Please fill in all required fields
2	test@gmail.com	Empty("")	Please fill in all required fields	Please fill in all required fields
3	test	testpass	Email must be in name@email.com format	Email must be in name@email.com format
4	test@gmail.com[>300]	testpass	Email is too long	Email is too long
5	unregistered@gmail.com	testpass	User account does not exist	User account does not exist
6	test@gmail.com	pass[<6]	Invalid password length	Invalid password length
6	test@gmail.com	pass[>50]	Invalid password length	Invalid password length
7	test@gmail.com	wrongpass	Entered passwords do not match	Entered passwords do not match

Registration

Generic Case			
Test ID	Test Input	Expected Output	Actual Output
1	Register with valid account username and password	The system displays the main menu for user to continue the operation	The system displays the main menu for user to continue the operation
2	Register with incomplete fields (username, email, password)	The system prompts the user to fill up the required fields for registration	The system prompts the user to fill up the required fields for registration
3	Register with wrong email regex (regular expression)	The system prompts the user to re-enter the email. It will display the corresponding error message	The system prompts the user to re-enter the email. It will display the corresponding error message
4	Register with email length more than 300 characters	The system prompts the user to re-enter the email. It will display the corresponding error message	The system prompts the user to re-enter the email. It will display the corresponding error message
5	Register with an already registered email address	The system prompts the user to re-enter the email. It will display the corresponding error message	The system prompts the user to re-enter the email. It will display the corresponding error message
6	Register with password less than 6 characters, or greater than 50 characters	The system prompts the user to re-enter the password. It will display the corresponding error message	The system prompts the user to re-enter the password. It will display the corresponding error message
7	Register with password	The system prompts the user	The system prompts the user

	mismatch	to re-enter the password. It will display the corresponding error message	to re-enter the password. It will display the corresponding error message
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In Particular						
Test Case	Name	Email Address	Password	Confirm Password	Expected Output	Actual Output
1	testuser	test@gmail.com	testpass	testpass	Successful login	Successful login
2	Empty("")	test@gmail.com	testpass	testpass	Please fill in all required fields	Please fill in all required fields
2	testuser	Empty("")	testpass	testpass	Please fill in all required fields	Please fill in all required fields
2	testuser	test@gmail.com	Empty("")	testpass	Please fill in all required fields	Please fill in all required fields
2	testuser	test@gmail.com	wrongpass	Empty("")	Please fill in all required fields	Please fill in all required fields
3	testuse	test	testpass	testpass	Email must be in name@email.com format	Email must be in name@email.com format
4	testuse	test@gmail.com[>300]	testpass	testpass	Email is too	Email is too

					long	long
5	testuser	exist@gmail.com	testpass	testpass	Email has been used	Email has been used
6	testuser	test@gmail.com	pass[<6]	pass[<6]	Invalid password length	Invalid password length
6	testuser	test@gmail.com	pass[>50]	pass[>50]	Invalid password length	Invalid password length
7	testuser	test@gmail.com	wrongpass	testpass	Entered passwords do not match	Entered passwords do not match
7	testuser	test@gmail.com	testpass	wrongpass	Entered passwords do not match	Entered passwords do not match

Edit Shortlist

Generic Case			
Test ID	Test Input	Expected Output	Actual Output
1	Shortlist a school	The system saves the school into shortlist	The system saves the school into shortlist
2	Removal of shortlisted school	The system removes the school into shortlist	The system removes the school into shortlist

View Shortlist

Generic Case			
Test ID	Test Input	Expected Output	Actual Output
1	Display Shortlisted School [Empty]	The system displays shortlist page with empty result	The system displays shortlist page with empty result
2	Display Shortlisted School [Filled]	The system displays shortlist page with intended results	The system displays shortlist page with intended results

WhiteBox Testing

Basic PathTesting (Login)

Method: userLogin()

Parameters: email, password

Return: Json response

Purpose: Authenticate, and assign user with a valid JWT token for Log-in required functions.

Basic Paths:

a) 0, 1, 3, 5, 7, 9, 11, 13 (baseline)

Test Cases:

a) False outcome of first decision point.

- Input: email = null, or password = null
- User left the compulsory field (email, password) empty.

b) False outcome of second decision point

- Input: email = "email"
- User entered email without the right regular expression. Specifically, no 'dot', 'at', and characters.

c) False outcome of third decision point

- Input: email = "email"*300 + "@gmail.com"
- User entered email with more than 300 characters.

d) False outcome of fourth decision point

- Input: password = pass
- User entered password that is less than 6 characters or more than 50 characters.

e) False outcome of fifth decision point

- Input: email = exist@gmail.com
- User entered an email that is not registered in the user database.

f) False outcome of sixth decision point

- Input: password = wrongpass
- User entered the wrong password.

Execution Paths:

a) 0, 1, 2

b) 0, 1, 3, 4

c) 0, 1, 3, 5, 6

d) 0, 1, 3, 5, 7, 8

e) 0, 1, 3, 5, 7, 9, 10

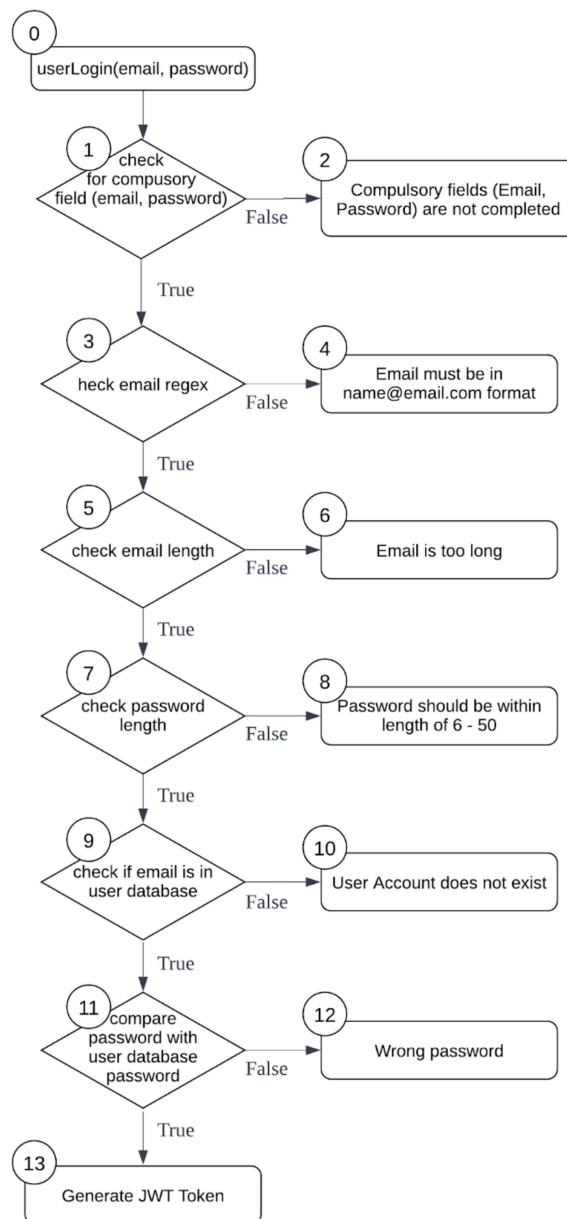
f) 0, 1, 3, 5, 7, 9, 11, 12

g) 0, 1, 3, 5, 7, 9, 11, 13

Cyclomatic Complexity:

[Conditions + 1] = [6 + 1] = 7

[Edges - Nodes + 2] = [13 - 8 + 2] = 7



Register

Method: registerUser()

Parameters: username, email, password, gender, region, motherTongueLanguage, educationLevel, ccaInterest

Return: Json response

Purpose: Register, and assign user with a valid JWT token for current Log-in session.

Basic Paths:

a) 0, 1, 3, 5, 7, 9, 10, 12 (baseline)

Test Cases:

a) False outcome of first decision point.

- Input:
- User left the compulsory field (username, email, password) empty.

b) False outcome of second decision point

- User entered email without the right regular expression. Specifically, no 'dot', 'at', and characters.

c) False outcome of third decision point

- User entered email with more than 300 characters.

d) False outcome of fourth decision point

- User entered password that is less than 6 characters or more than 50 characters.

e) False outcome of fifth decision point

- User entered an email that is already registered in the user database. The email has already been registered.

Execution Paths:

a) 0, 1, 2

b) 0, 1, 3, 4

c) 0, 1, 3, 5, 6

d) 0, 1, 3, 5, 7, 8

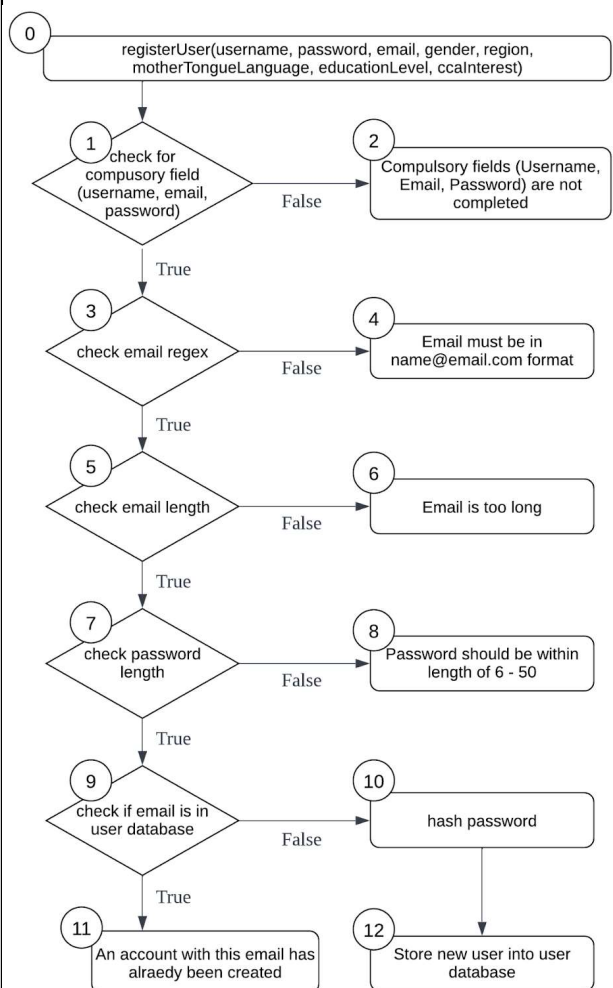
e) 0, 1, 3, 5, 7, 9, 11

f) 0, 1, 3, 5, 7, 9, 10, 12

Cyclomatic Complexity:

[Conditions + 1] = [5 + 1] = 6

[Edges - Nodes + 2] = [12 - 8 + 2] = 6



Add Shortlist

Method: addShortlist()

Parameters: userId, schoolName, schoolNotes

Return: Json response

Purpose: Add the intended shortlist school with comments to the current user database

Basic Paths:

a) 0, 1, 2, 4, 6, 8(baseline)

Test Cases:

a) False outcome of first decision point.

- Backend server doesn't have and store JWT secret.

b) False outcome of second decision point

- User session JWT Token is empty. The user can be in this stage, if they has either cleared their browser cookie, or logged out.

c) False outcome of third decision point

- User session JWT Token has either expired or is invalid in general. The former is more common.

Execution Paths:

a) 0, 1, 2, 3

b) 0, 1, 2, 4, 5

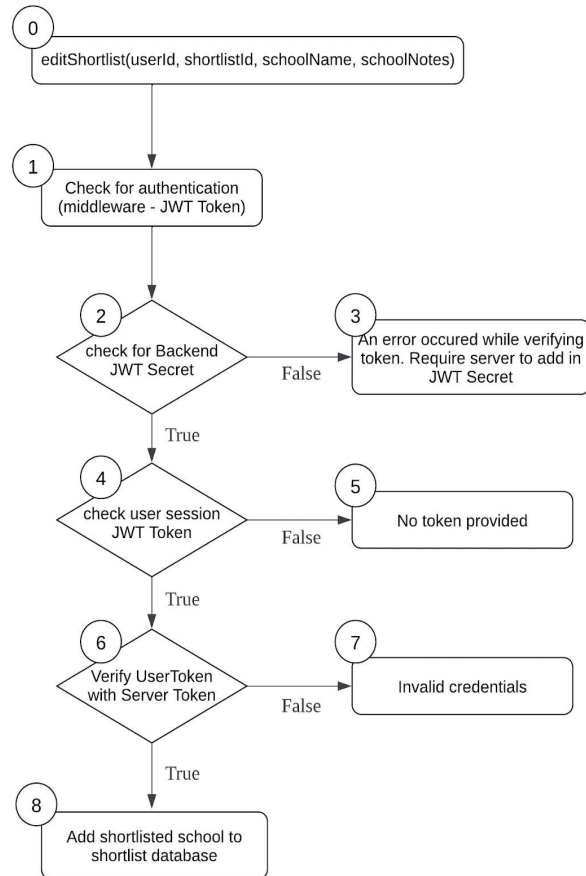
c) 0, 1, 2, 4, 6, 7

d) 0, 1, 2, 4, 6, 8

Cyclomatic Complexity:

[Conditions + 1] = [3 + 1] = 4

[Edges - Nodes + 2] = [8 - 6 + 2] = 4



View Shortlist

Method: getShortlisted()

Parameters: userID

Return: Json response

Purpose: Retrieved all shortlisted schools tagged to the current user database

Basic Paths:

a) 0, 1, 2, 4, 6, 8(baseline)

Test Cases:

a) False outcome of first decision point.

- Backend server doesn't have and store JWT secret.

b) False outcome of second decision point

- User session JWT Token is empty. The user can be in this stage, if they has either cleared their browser cookie, or logged out.

c) False outcome of third decision point

- User session JWT Token has either expired or is invalid in general. The former is more common.

Execution Paths:

a) 0, 1, 2, 3

b) 0, 1, 2, 4, 5

c) 0, 1, 2, 4, 6, 7

d) 0, 1, 2, 4, 6, 8

Cyclomatic Complexity:

$[Conditions + 1] = [3 + 1] = 4$

$[Edges - Nodes + 2] = [8 - 6 + 2] = 4$

