

SOFTWARE ENGINEERING

TEST PLAN DOCUMENT

EDU-CONNECT

“A personalized doubt discussion platform for students”

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Table of Contents

TEST DOCUMENT: EDU-CONNECT.....

CUSTOMER.....

Section 1: Introduction.....

Section 2: Unit Testing.....

Test Case 1: Student Register.....

Test Case 2: Student Login.....

Test Case 3: Student Profile.....

Test Case 4: Student Homepage.....

Test Case 5: Student Room.....

Test Case 6: FAQ.....

Test Case 7:Logout.....

Test Case 8:Room Homepage.....

Test Case 9:Room Info.....

Test Case 10:Question(Room).....

Section 3: Integration Testing.....

Coupling.....

Test Case 1.....

Description.....

Test Case 2.....

Description.....

Test Case 3.....

Description.....

Test Case 4.....

Description.....

Test Case 5.....

Description.....

Section 4: System Testing	.....
Scenario 1: Without using the logout button	.....
Error Found	.....
Scenario 2: Having Low internet connections	.....
Error Found	.....
Scenario 3: File too large (image file)	.....
Error Found	.....
 Section 5: Found and fixed bugs	.....
BUG 1	.....
Description	.....
Fix	.....
BUG 2	.....
Description	.....
Fix	.....
BUG 3	.....
Description	.....
Fix	.....
BUG 4	.....
Description	.....
Fix	.....

CUSTOMER:

All Students

All teachers who can teach or having teaching experience

SECTION 1:

INTRODUCTION

This is the Test Execution Documents of the web Development Applications, 'EDU-CONNECT', a software Engineering project at the Information Technology Department of IIIT Allahabad. Edu-connect is a student doubt discussion platform. It facilitates students to connect to the tutor and find answers to their queries through private rooms. This is a very flexible platform both for student and tutor. Many people often post homework problems that they need help with. However, often their questions go unanswered, or the answers they get are not satisfactory. This platform solves this problem effectively using its chat, video conferencing, private room and real-time white board features.

This document presents the results of the executions of the different is organized as follows:

- Sections 1 is the Introductions itself
- Section 2 introduces the result of Unit testing
- Section 3 introduces the result of Integrations testing.
- Section 4 introduces the result of system testing.
- Section 5 describes the bugs found during the test phase, and are listed.

The results of the test execution will be presented in subsection as follows:

- Id and name of the executed test.
- Description of the test, or collected results.
- Error found if any and if error was found on certain step of Test Case,.

All test cases were first executed once and found bugs were fixed. Then all test cases were executed again and no further bugs were found.

SECTION 2:

UNIT TESTING

As we were making a Web Development project, we created a screenshot of all the visible interfaces. At each level we had taken a screenshot of all the visible interfaces. For unit testing we had also checked each button on click is working or not i.e every button's activity has been captured and shown as a test case.

TEST CASES

Test Case No.	Name	Test Case
1	Students Register	If any student visits the Landing Page for the first time, then he has to register on the website name EDU-CONNECT,i.e he has to create a Username , password .
2	Student Login	Once Student Register is completed then students will give his Username and Password which was created by him during the time of registrations
3	Student Profile	Once student Login ,then students are redirected to the main page or we call home page where there is a component profile , so students will fill in all the information which is given in profile and save it.
4	Student Homepage	Student HomePage is only the area where

		students will upload their doubt ,with the description of the questions or doubt.
5	Student Room	Whenever students ask their doubt then a room has been created , which will activate when any teacher will join the room to solve the doubt of the student of that subject and topics which student has given in the description of the doubt details.
6	FAQ View questions and Answers	The page where FAQ posted by the students can be viewed by any students and the answers can be posted by any student and tutor.
7	Logout	On Clicking the Logout button, user will redirect on the login page
8	Room Homepage	When the tutor accept to login in room, then a room homepage is created.
9	Room Info	When the teacher will accept the room in which the tutor wants to solve the problem. Then room will open ,in which there is room info
10	Question (Room)	When the student and tutor are both in room, then tutor can see the question which student asked.

TEST CASE 1:

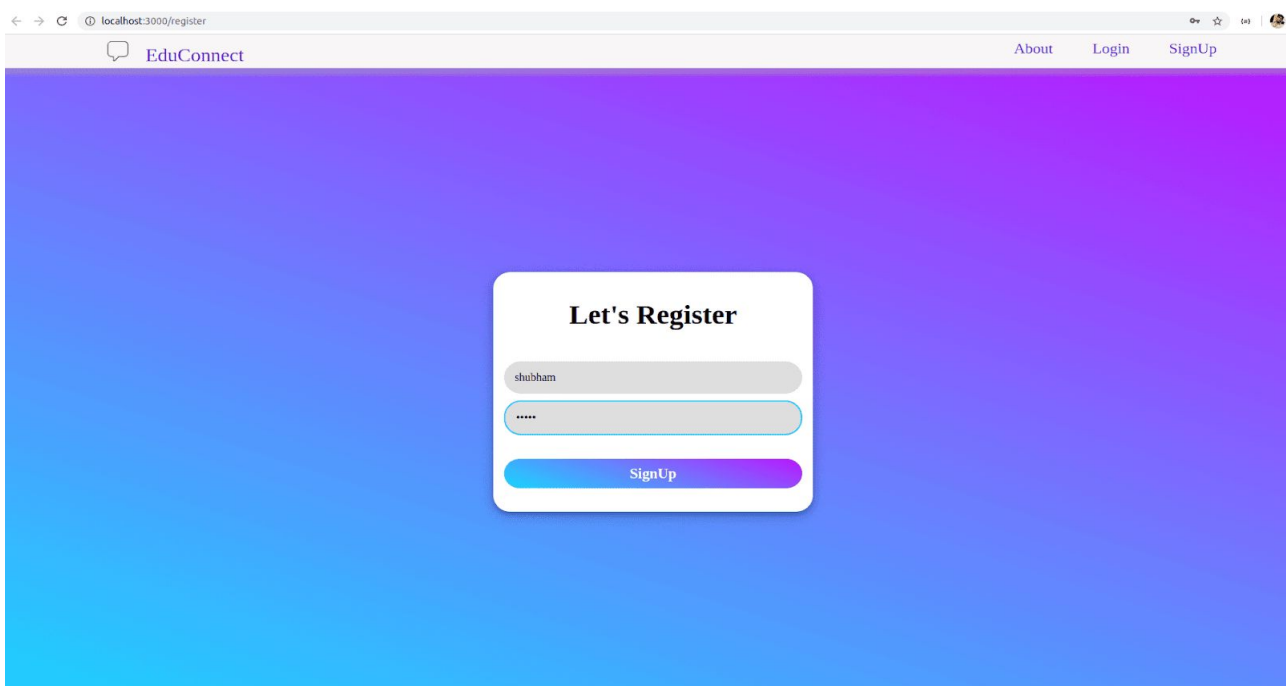
Student Register

As i have stated above that before enjoying any facilities of the web project name EDU-CONNECT , one has to first register , only those students can access the further facilities provided by EDU-CONNECT. If any student visits the Landing Page for the first time, then he has to register on the website name EDU-CONNECT,i.e he has to create a Username , password .

Now the following screenshot will ensure that the Test case 1 is passed.

When the students Register is completed then the landing page is opened, with many details unfilled.

At the time of registrations



The screenshot shows a web browser window with the address bar displaying 'localhost:3000/register'. The website header includes the 'EduConnect' logo and navigation links for 'About', 'Login', and 'SignUp'. The main content area features a registration form titled 'Let's Register'. The form contains two input fields: the first is for a username, with 'shubham' entered, and the second is for a password, represented by six dots. Below these fields is a 'SignUp' button with a blue-to-purple gradient.

TEST CASE 2:

Student Login

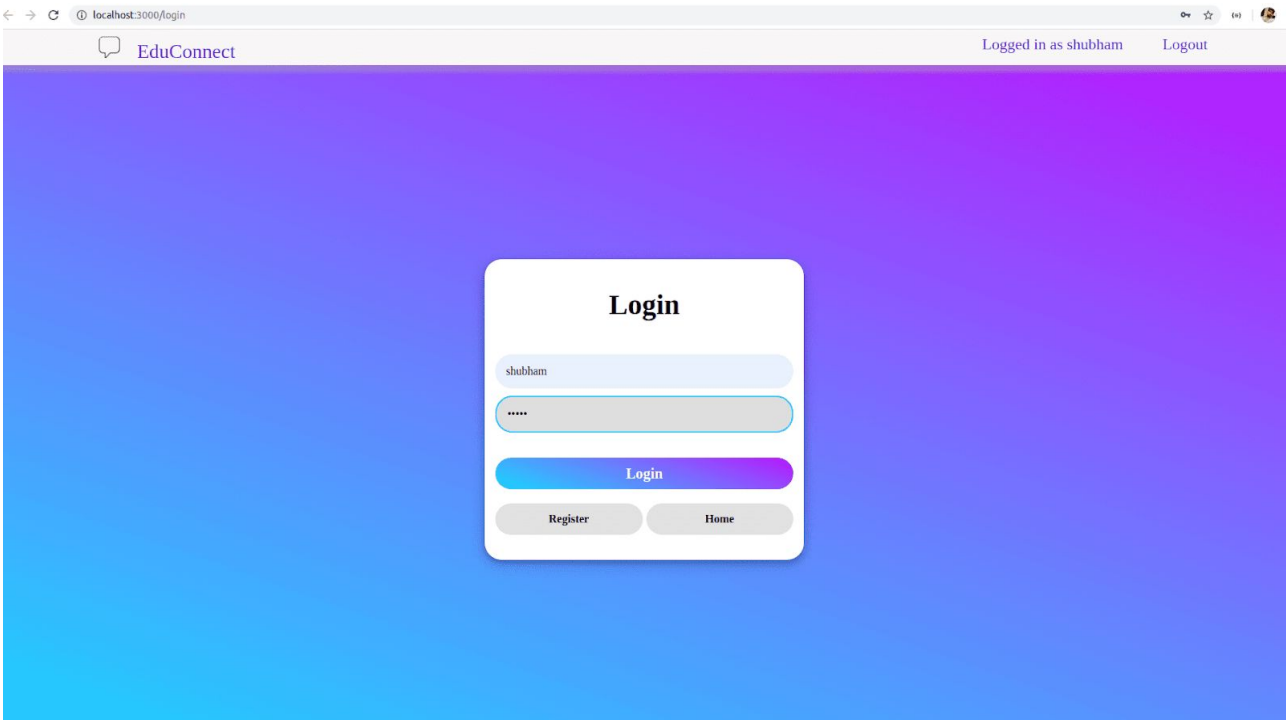
When You have registered at one time, then anytime a student can login just by giving the two details which they had given at the time of registration . All the student records of the particular student are recorded so u dont need to register each time just enter by giving the login id and password.

Now the following screenshot will ensure that the Test case 2 is passed.

That is Student Login is completed by giving the following two details, i.e Username and Password.

When Students enter by giving the correct username and password , then at the homepage one message will be shown ‘successfully login ’.

At the time of login filling details



The screenshot shows a web browser window with the address bar displaying 'localhost:3000/login'. The page features a blue gradient background. At the top, there is a navigation bar with the 'EduConnect' logo on the left and 'Logged in as shubham' and 'Logout' links on the right. In the center, there is a white login card with the title 'Login'. The card contains two input fields: the first is labeled 'shubham' and the second is masked with '*****'. Below the input fields is a blue 'Login' button. At the bottom of the card are two buttons: 'Register' and 'Home'.

TEST CASE 3:

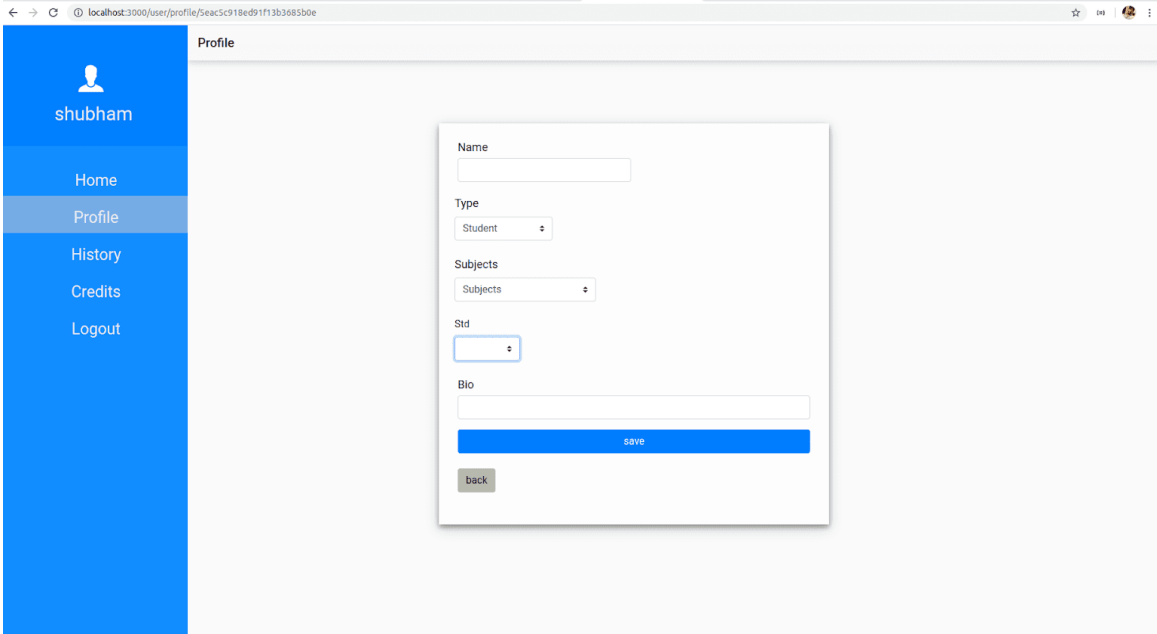
Student Profile

Once any students login in the EDU-CONNECT, then they will have to give their informations like name, in which class they studied, their bio, their type i.e either student or teacher because in this website called EDU-CONNECT , teacher will be also the part of this website for solving the doubts of students .

Once student Login ,then students are redirected to the main page or we call home page where there is a component profile , so students will fill in all the information which is given in the profile and save it.

Now the following screenshot will ensure that the Test case 3 is passed.

At the time of filling self information



The screenshot shows a web browser window with the URL `localhost:3000/user/profile/5eac5c918ed91f113b3685b0e`. The page is titled "Profile". On the left, there is a blue sidebar with a user profile icon and the name "shubham". Below the icon are navigation links: "Home", "Profile" (highlighted), "History", "Credits", and "Logout". The main content area is white and contains a form for filling self-information. The form has the following fields: "Name" (text input), "Type" (dropdown menu with "Student" selected), "Subjects" (dropdown menu with "Subjects" selected), "Std" (dropdown menu with "1" selected), "Bio" (text input), and a "save" button. There is also a "back" button at the bottom left of the form.

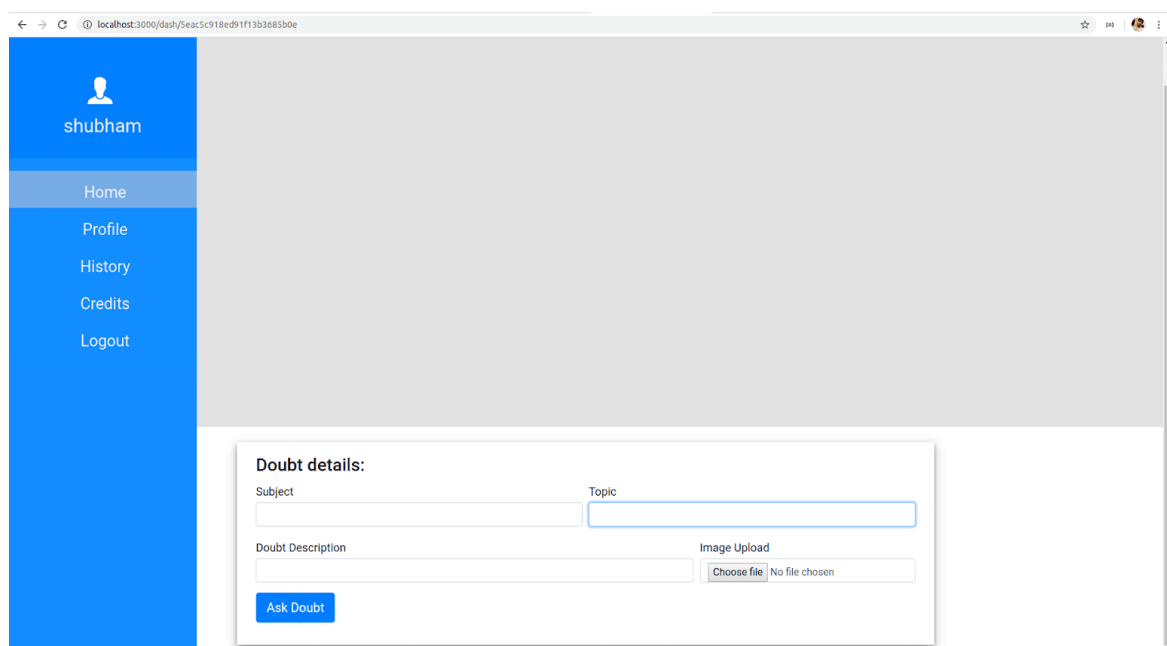
TEST CASE 4:

Student HomePage

Whenever students login in the EDU-CONNECT website, then he may have some doubt regarding any subject, so in the homepage students will ask the doubt by giving the correct information of the question description, which subject and from which topic this question is from and the student will also give the doubt descriptions . After that the student will upload the picture or image of the question which he wants to ask.

Now the following screenshot will ensure that the Test case 4 is passed.

At the time of filling doubt details



The screenshot shows a web browser window with a local host address. The page has a blue sidebar on the left with a user profile icon and the name 'shubham'. Below the profile, there is a list of navigation links: Home, Profile, History, Credits, and Logout. The main content area is a large grey rectangle. At the bottom of the page, there is a white box titled 'Doubt details:'. Inside this box, there are four input fields: 'Subject', 'Topic', 'Doubt Description', and 'Image Upload'. The 'Image Upload' field has a 'Choose file' button and the text 'No file chosen'. At the bottom left of the 'Doubt details' box, there is a blue button labeled 'Ask Doubt'.

TEST CASE 5:

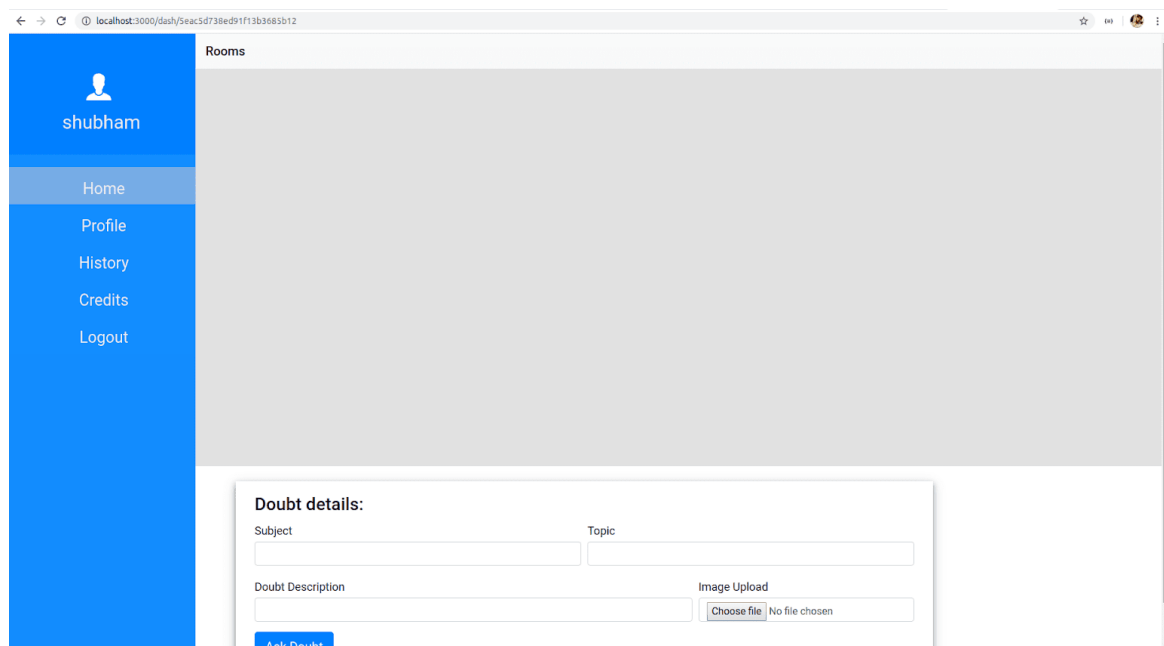
Student Room

Whenever students ask their doubts then a room has been created , and the room will activate when any teacher will join the room to solve the doubt of the student of that subject and topics which student has given in the description of the doubt details.

Whenever students want to enter the room which is created then he will be able to enter only when any teacher has accepted that question otherwise it will show an error message that “no tutor assigned”.

Now the following screenshot will ensure that the Test case 5 is passed.

When no room has been made



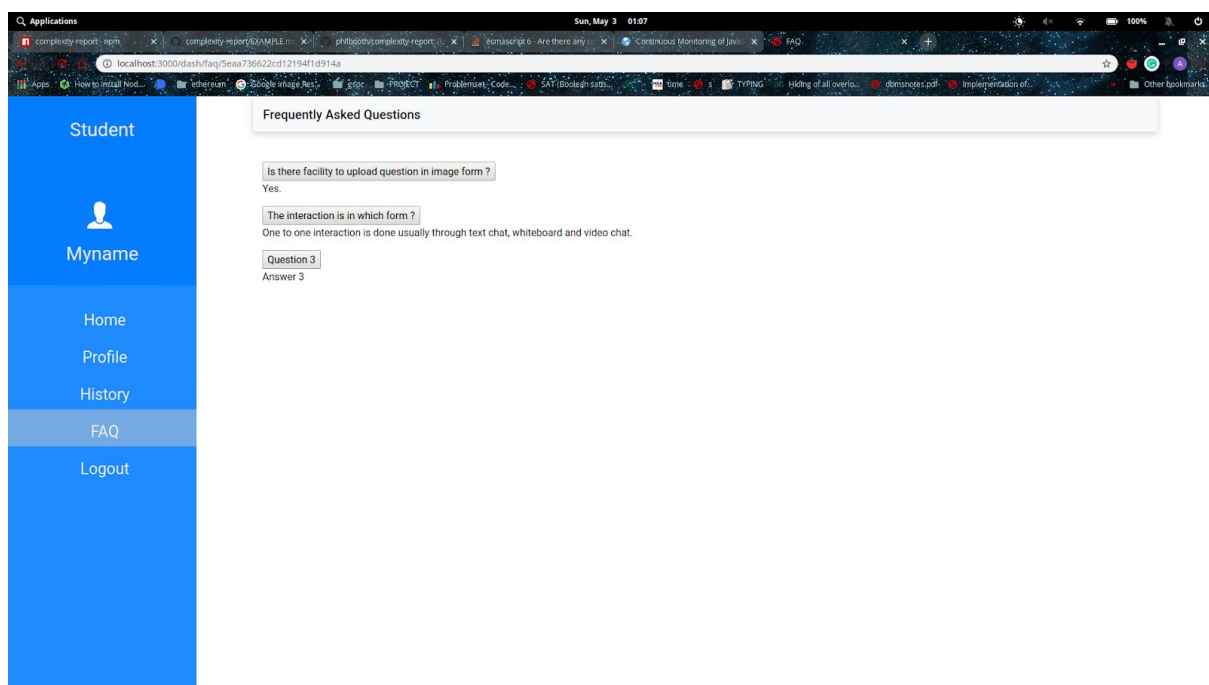
The screenshot shows a web application interface. On the left is a blue sidebar with a user profile 'shubham' and navigation links: Home, Profile, History, Credits, and Logout. The main content area is titled 'Rooms' and contains a large grey rectangular placeholder. At the bottom, there is a 'Doubt details' form with the following fields: 'Subject' and 'Topic' (text inputs), 'Doubt Description' (text area), and 'Image Upload' (with a 'Choose file' button and 'No file chosen' text). A blue 'Ask Doubt' button is located at the bottom left of the form.

TEST CASE 6:

FAQ

The page where FAQ posted by the students or tutor can be viewed by any students or tutor and the answers can be posted by any student or tutor who can answer the given query by the student in FAQ.

Now the following screenshot will ensure that the Test case 6 is passed



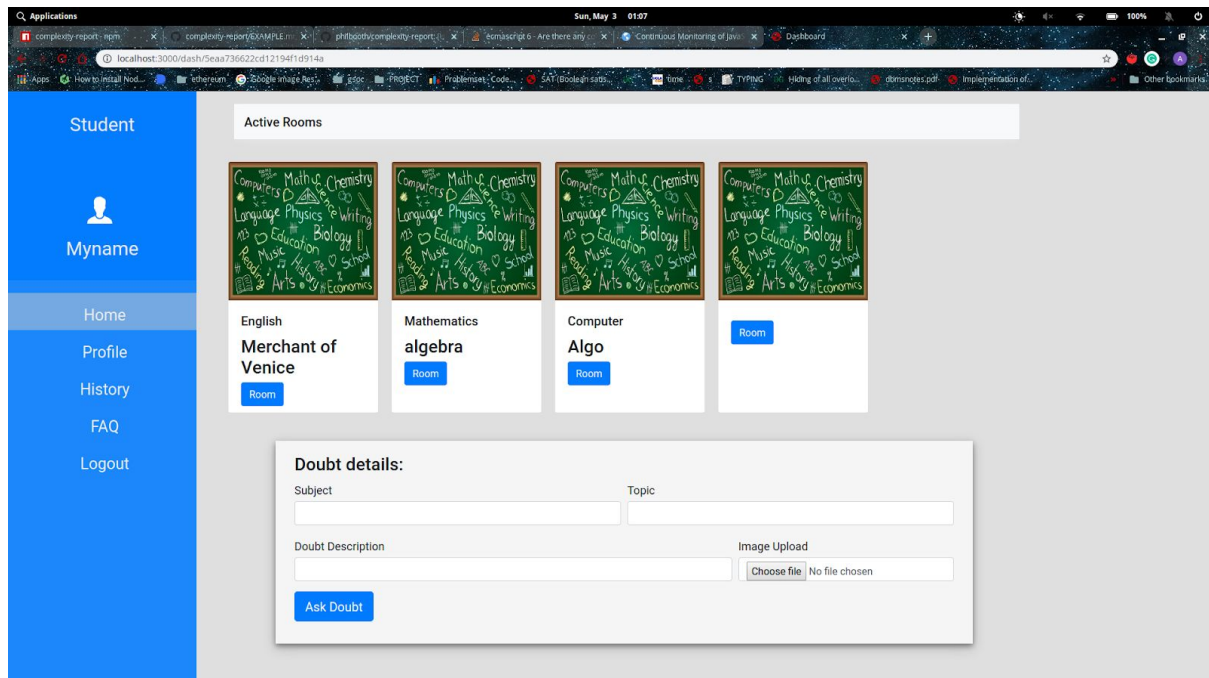
TEST CASE 7:

Logout

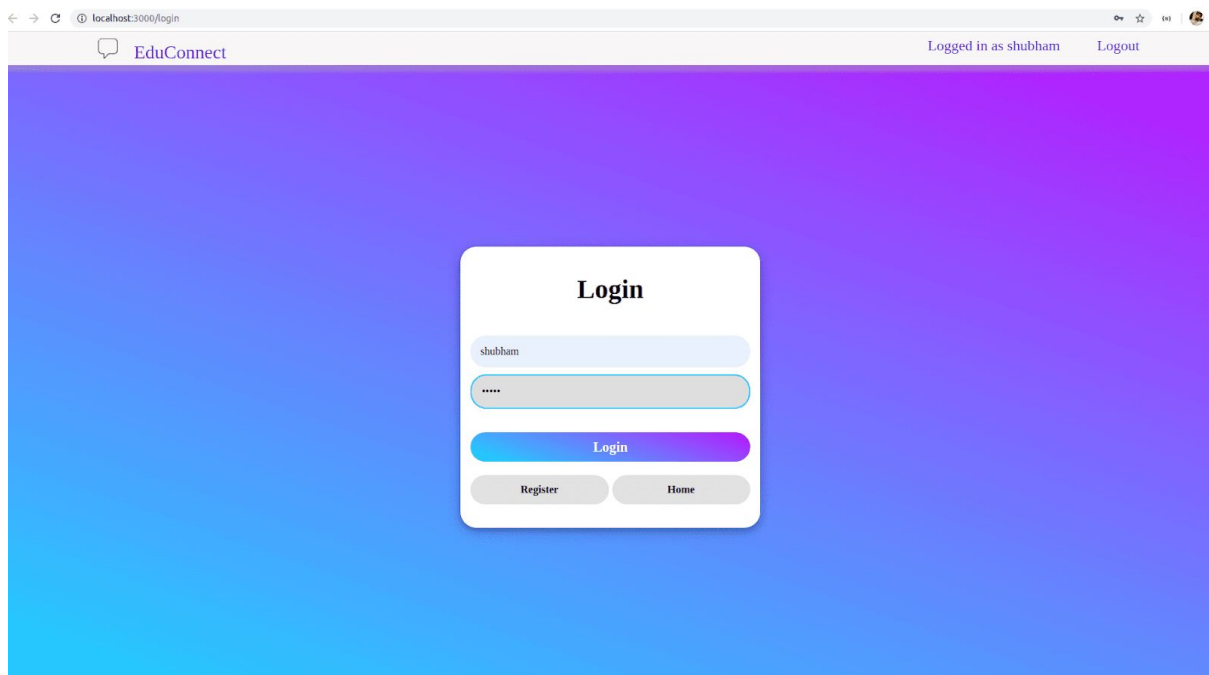
On clicking on the logout in the homepage then user will be redirected on the login page.

Now the following screenshot will ensure that the Test case 7 is passed

When on homepage



After clicking on the logout in the homepage



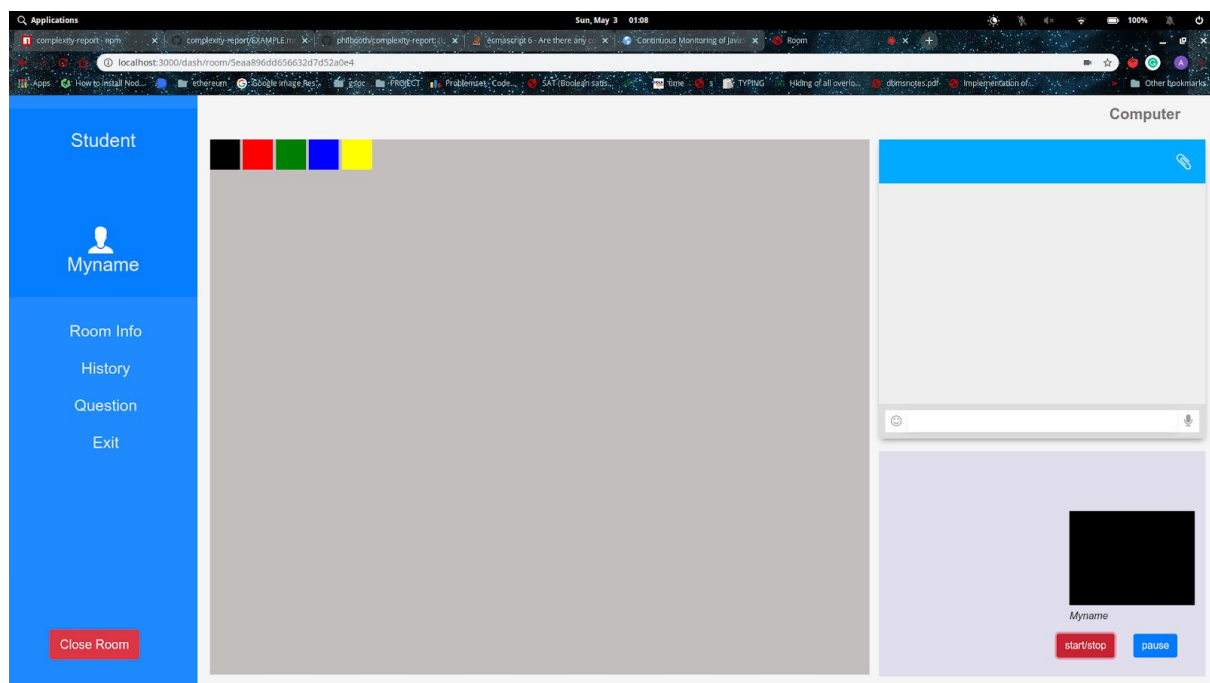
TEST CASE 8:

Room Homepage

When the tutor accept to login in the room and to solve the question which was uploaded by the student. Then on clicking on the room tutor will be entered into the room homepage.

Now the following screenshot will ensure that the Test case 8 is passed

When tutor click on room then room homepage



TEST CASE 9:

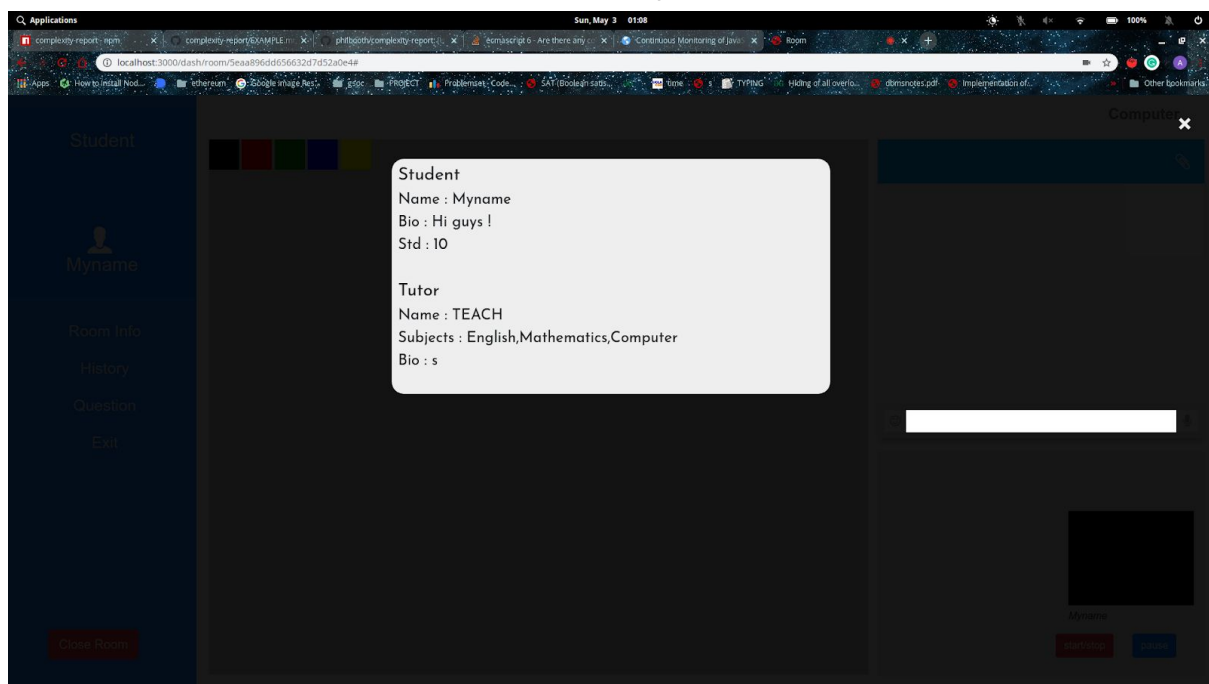
Room Info

When the tutor will accept the room invitation then a room will be open , in that there is a option room info, which will provide .When the teacher will accept the room in which the tutor wants to solve the problem. Then room will open ,in which there is room info.

The room info will show the information of the student whose question is being actively solved by the tutor.

Now the following screenshot will ensure that the Test case 9 is passed

When the tutor or student click on room info.



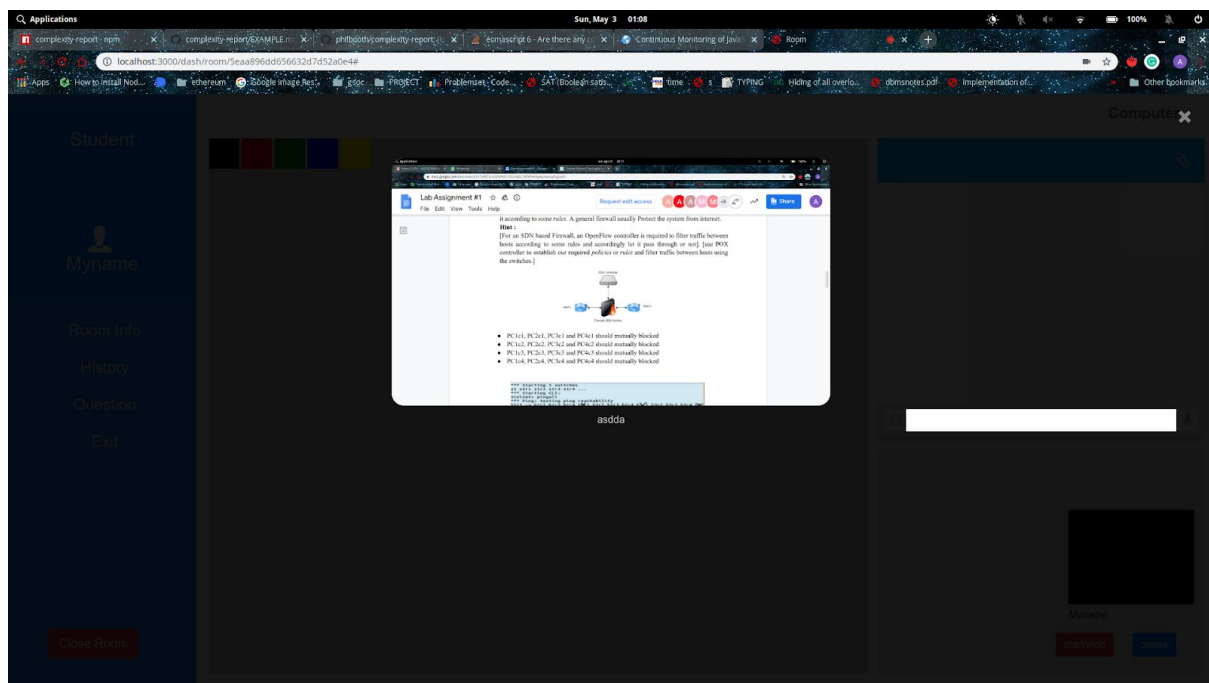
TEST CASE 10:

Question (Room)

Here the question in room means the the question which was asked by the student or uploaded in the room. Tutor will discussed only about the uploaded question.

Now the following screenshot will ensure that the Test case 10 is passed

Question of computer network has been uploaded



SECTION 3:

INTEGRATION TESTING

Integration testing, also known as integration and testing, is a software development process which program units are combined and tested as groups in multiple ways. In this context, a unit is defined as the smallest testable part of an application.

In this section, Integration testing has been performed by considering different modules together to see how the module works together.

COUPLING

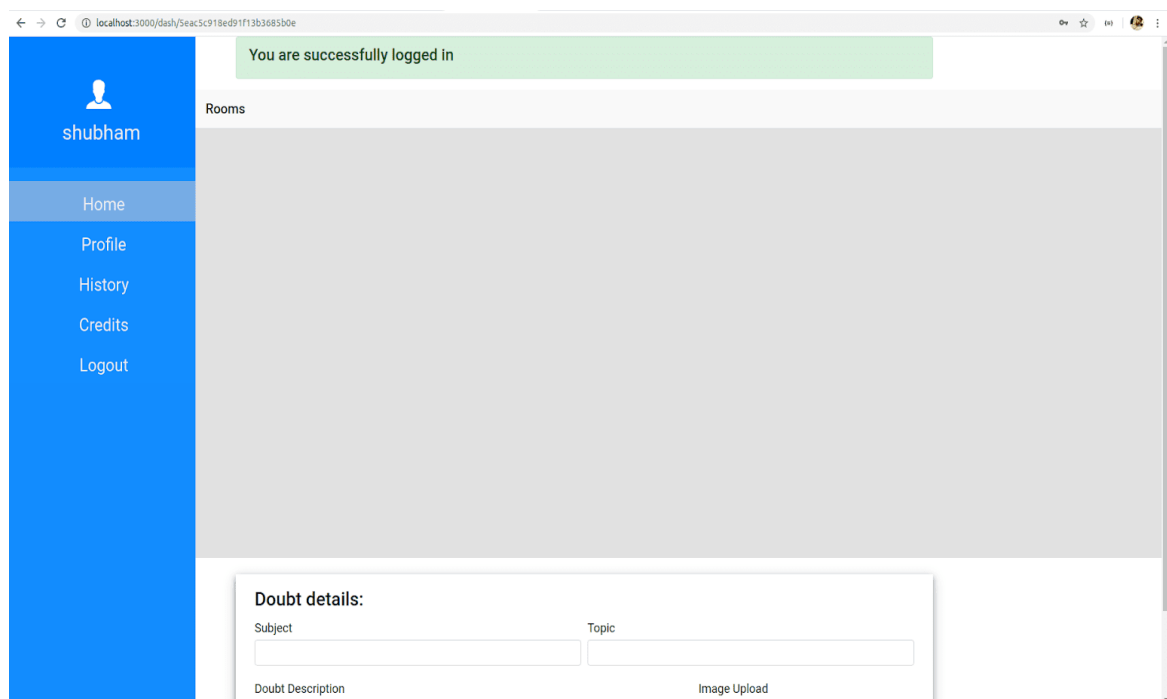
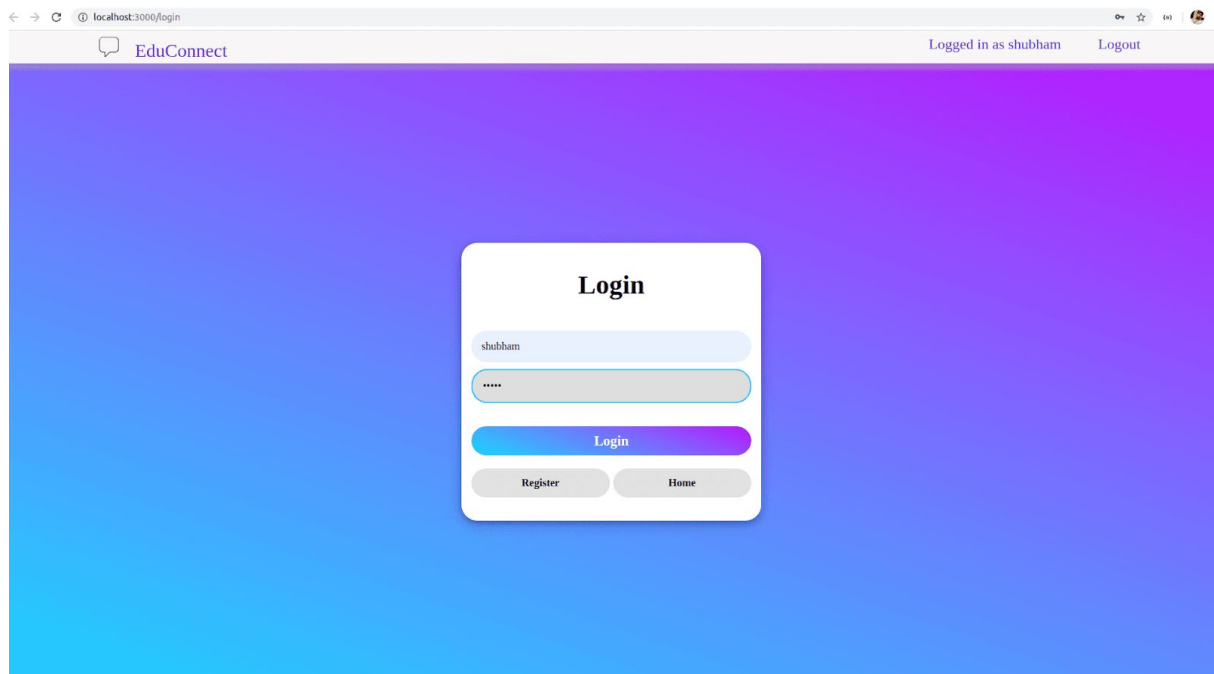
Coupling is the degree of interdependence between software modules; a measure of how closely connected two routines or modules are; the strength of the relationships between modules.

TEST CASE 1

Description:

As soon as we login then we will be able to see our profile and we must be assured that we logged in properly.

Following images show that before and after login .

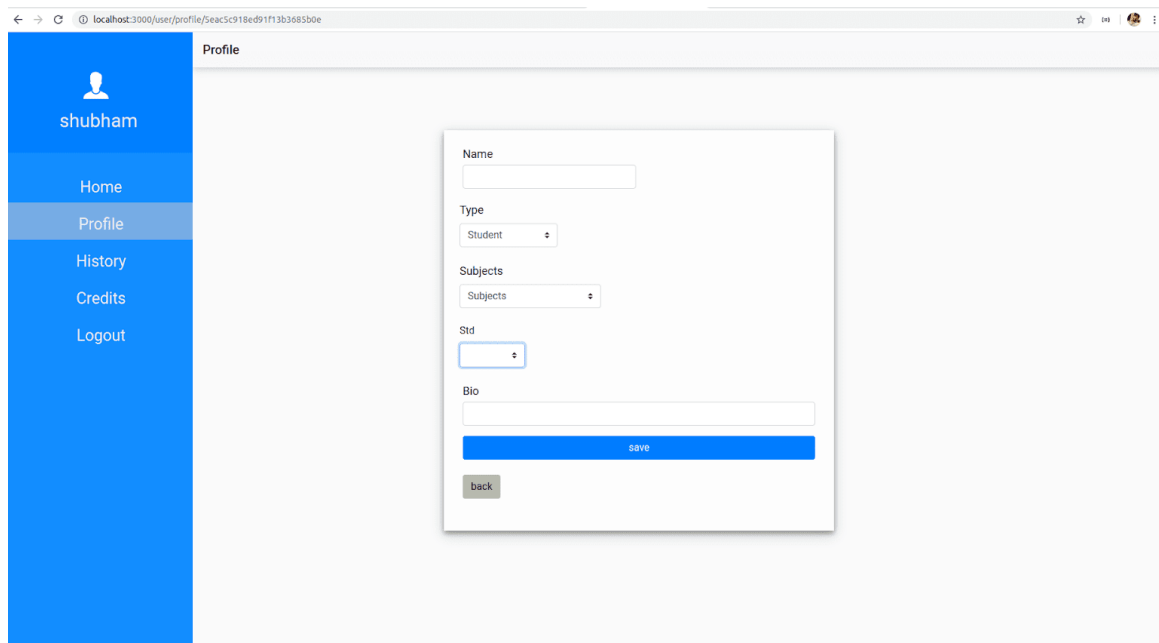


TEST CASE 2

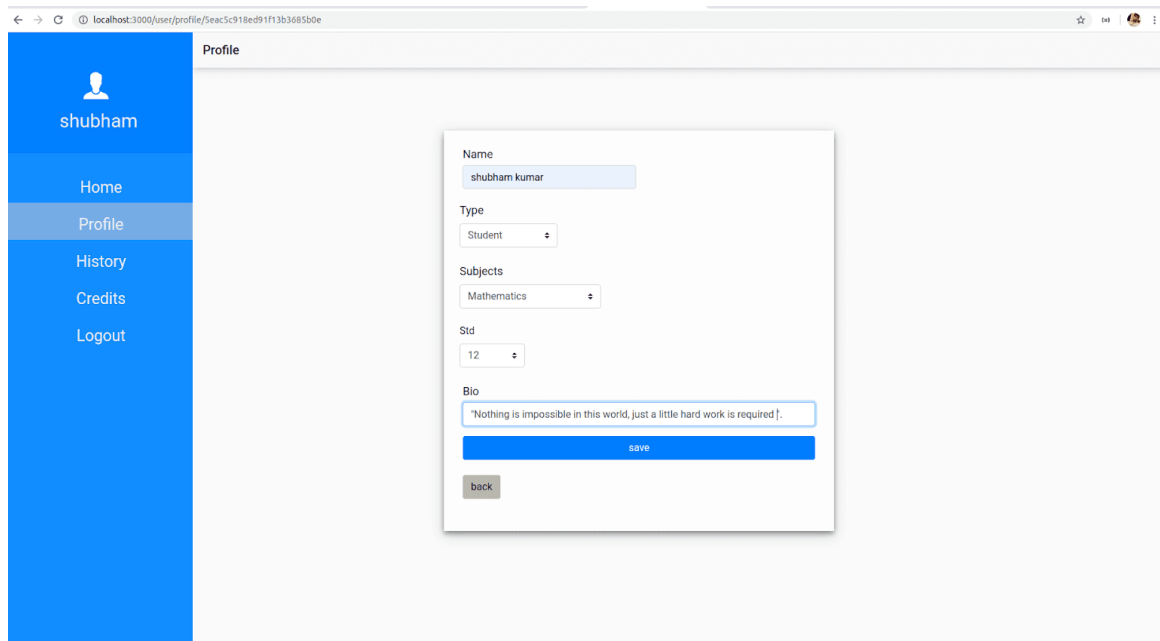
Description:

As soon as students update their profile we must see the changes whenever the student login in the EDU-CONNECT webpage.

Now the following images show that before and after updating the profile .



This screenshot shows the 'Profile' page of the EDU-CONNECT application. On the left is a blue sidebar with the user's name 'shubham' and a profile icon, and a menu with options: Home, Profile (highlighted), History, Credits, and Logout. The main content area is titled 'Profile' and contains a form for updating the profile. The form fields are: Name (empty), Type (dropdown menu showing 'Student'), Subjects (dropdown menu showing 'Subjects'), Std (dropdown menu showing an empty field), and Bio (empty text area). At the bottom of the form are two buttons: a blue 'save' button and a grey 'back' button.



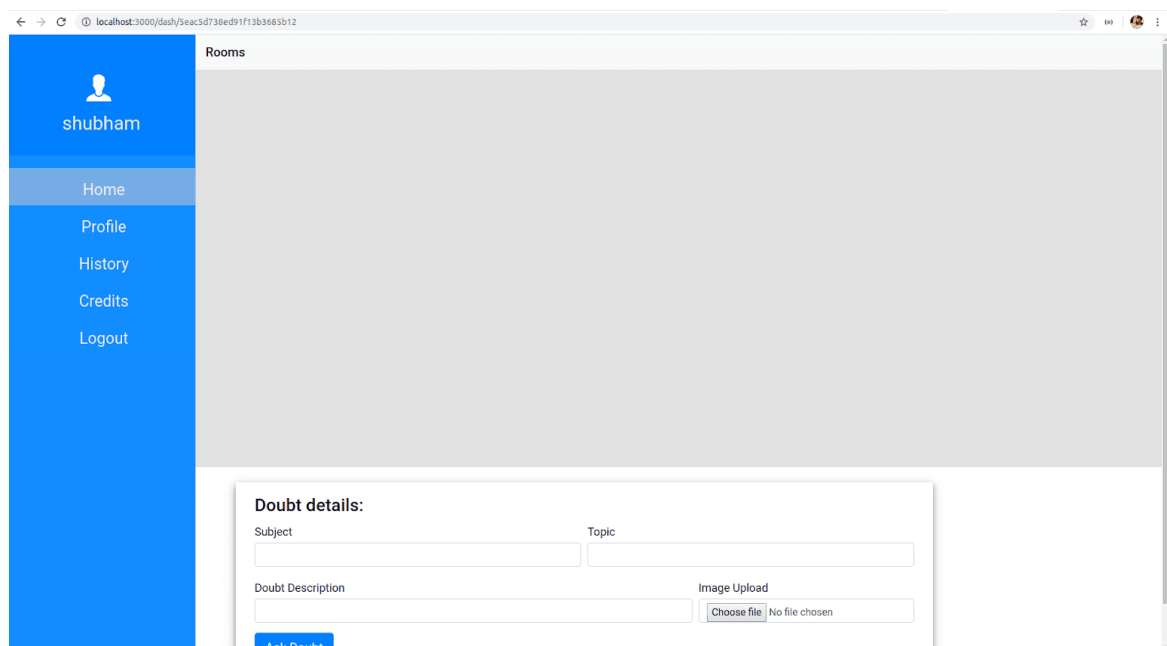
This screenshot shows the 'Profile' page after the profile has been updated. The sidebar remains the same. The main content area shows the updated profile information in the form: Name is now 'shubham kumar', Type is 'Student', Subjects is 'Mathematics', Std is '12', and Bio is 'Nothing is impossible in this world, just a little hard work is required :}'. The 'save' and 'back' buttons are still present at the bottom of the form.

TEST CASE 3

Description:

As soon as a student asks the doubt or posted then a room has been created in which a tutor will be assigned for solving the student's doubts.
Following the images which will show that room is created.

When no room has been made (i.e no questions has been asked till this point of time.)



The screenshot shows a web application interface. On the left is a blue sidebar with a user profile icon and the name 'shubham'. Below the profile are links for 'Home', 'Profile', 'History', 'Credits', and 'Logout'. The main content area is titled 'Rooms' and is currently empty, showing a large grey rectangle. At the bottom of the page is a 'Doubt details' form. This form contains two input fields for 'Subject' and 'Topic'. Below these is a 'Doubt Description' input field. To the right of the description field is an 'Image Upload' section with a 'Choose file' button and the text 'No file chosen'. At the bottom left of the form is a blue 'Ask Doubt' button.

When room has been created (i.e when question has been posted)

The screenshot shows a web application interface. On the left is a blue sidebar with a user profile icon and the name 'shubham'. Below the profile are links: Home, Profile, History, Credits, and Logout. The main content area has a header 'Rooms' and a large grey placeholder. Below the header is a card for 'Mathematics' with the title 'Definite Integration' and a blue 'Room' button. At the bottom is a 'Doubt details:' form with fields for 'Subject', 'Topic', and 'Doubt Description', and an 'Image Upload' section with a 'Choose file' button and 'No file chosen' text. A blue 'Ask Doubt' button is at the bottom left of the form.

When no tutor has been assigned (i.e when clicking on the room button).

The screenshot shows the same web application interface as before, but with a red banner at the top of the main content area that says 'No Tutor assigned Yet !'. The 'Rooms' header and the 'Mathematics: Definite Integration' card are still present. The 'Doubt details:' form is also visible at the bottom.

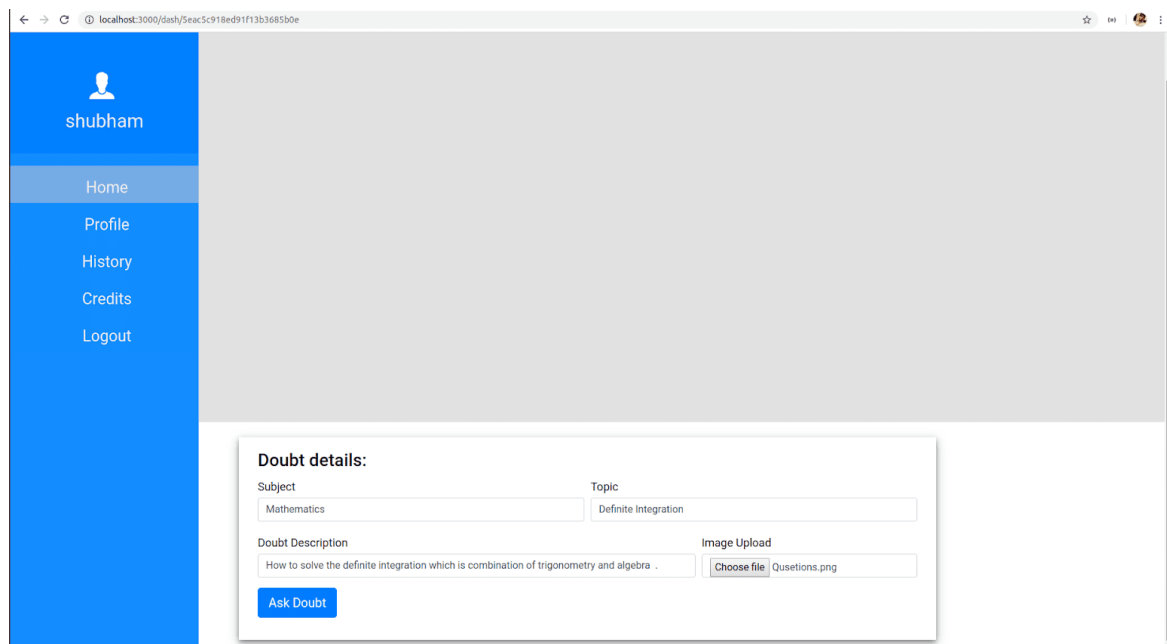
TEST CASE 4

Description:

When the student uploads the details of the questions which he wants to ask to the tutor, as soon as the details are uploaded then the room will be created and it will be shown on the top of the homepage.

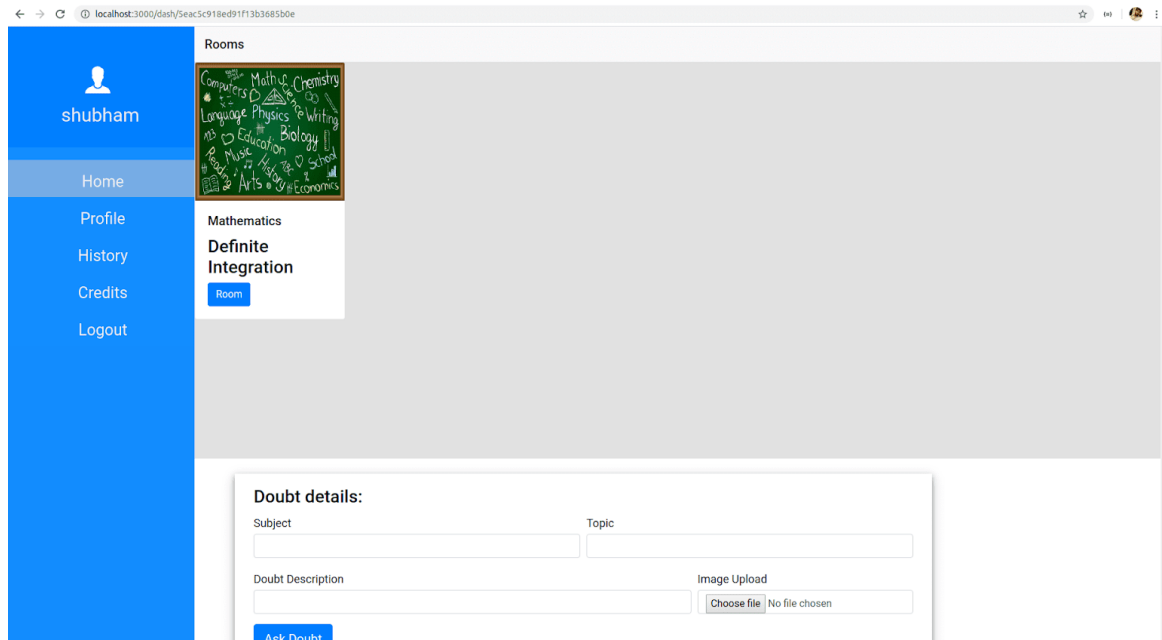
Now the following images are before and after the questions have been uploaded.

Filling the doubt details



The screenshot shows a web application interface. On the left is a blue sidebar with a user profile icon and the name 'shubham'. Below the name are navigation links: Home, Profile, History, Credits, and Logout. The main content area is a large grey rectangle. At the bottom, there is a white box titled 'Doubt details:'. Inside this box, there are two input fields for 'Subject' (containing 'Mathematics') and 'Topic' (containing 'Definite Integration'). Below these is a 'Doubt Description' field containing the text 'How to solve the definite integration which is combination of trigonometry and algebra'. To the right of the description is an 'Image Upload' section with a 'Choose file' button and the filename 'Qusetions.png'. At the bottom left of the white box is a blue button labeled 'Ask Doubt'.

When the doubt details have been saved ,then room is created as shown in the figure.



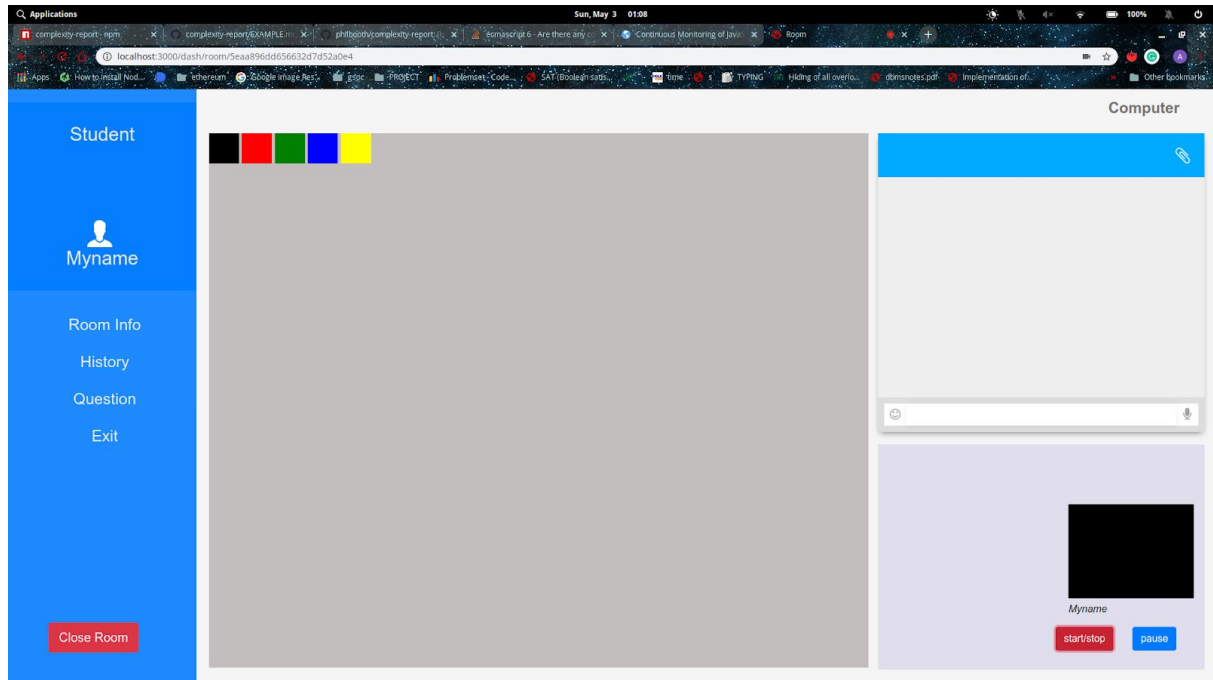
TEST CASE 4

Description:

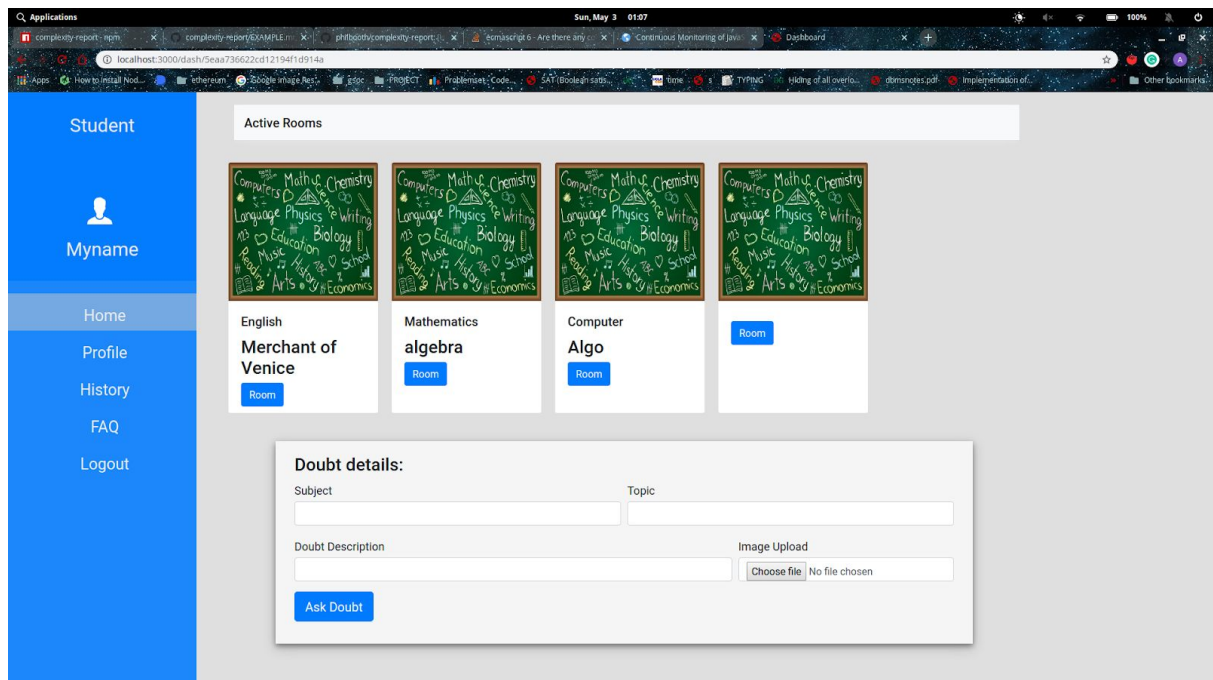
When tutor explained the question and student get satisfied by the answer of the tutor , then both student and tutor can leave the room by clicking on close room.

Now the following images are before and after clicking on the close room button have been uploaded.

Before clicking on close room



After clicking on the close button



SECTION 4:

SYSTEM TESTING

System testing of software or hardware is testing conducted on a complete, integrated system to evaluate the system's compliance with its specified requirements using SRS. While comparing against the requirements, various scenarios have been generated to know if there is any bug or not, and various bugs have been found as follows :

Scenario 1:

Without using the logout button.

Without using the logout button on the webpage, one can go back to the login page by just clicking on the back button. This cannot affect any other functionality of the webpage. This is one of the basic bugs which is founded in so many websites. Only some websites don't allow this functionality and those websites are highly secured.

Error Found:

Bug 1 was found while doing testing, although this will not affect any other functionality provided on the web page.

Scenario 2:

Having Low internet connections

When the internet connection is low, only the html page will be loaded, no image will be shown, no css or styling of the page will be shown, just the simple text which is written on the page will be seen.

Error Found:

Bug 2 was found during testing , it doesn't have any impact on the webpage or nothing will get affected.

Scenario 3:

File too large (image file)

When we want to upload an image of size 5 MB or greater than 5 MB, then it will show an error that the file is too large . Initially it was ok but after too many attempts i came to realise that it is not taking the file which is of larger size.

Error Found:

Bug 3 was found during testing , it doesn't affect any other functionality of the web page , just we have an idea about the size of the image which we are uploading.

SECTION 5:

FOUND AND FIX BUGS

In this last section of the Test Plan Document, i.e found and fixed bugs.In this section i am going to talk about the error or which we call bugs which were found during the testing time, and the found bugs were fixed later on.

BUG 1

Description:

When unauthorised users want to login or access.

If unauthorised users want to access or to login then then they will easily get into it ,and can damage many parts of the databases using various tools.

Fix:

It was later on fixed and access was only given to those users who have their details in the databases.

BUG 2

Description:

When the tutor accepts the room , and the student enters the room , then video calls automatically start without getting the permission from the tutor.

Fix:

This bug was fixed later on by letting the tutor start the video call if needed. It was done by giving the option to the tutor side to start the video call.

BUG 3

Description:

When the tutor accepts the room and students enter into it then the tutor will start teaching on the white board which was provided in the room. But on the white board , if the tutor writes on the white board on the coordinate axis (a,b) . Then at the student side then the same text on the white board will be shown on the other coordinate axis(x,y).

Fix:

Still this bug was not fixed and we are using different methods to correct it.

BUG 4

Description:

While the tutor starts the video call then, an echo has been produced or some unwanted high pitch audio is created which sometimes becomes high.

Fix:

We are using different scenarios to reduce the echo or unwanted noise, but still there is some noise created on the background of the video call.