
Test Plan Document

for

AVAILSYS

Prepared by

IIT2019204
MITTA LEKHANA REDDY
 IIT2019208
DHANUSH VASA
 IIT2019234
PRAVALLIKA KODI
 IIB2019030
KANDAGATLA MEGHANA SANTHOSHI

IIIT Allahabad

05-04-2021

Table of Contents

1. Introduction

2. Unit Testing

- Faculty Test cases

- Test case - 1 : Register
- Test case - 2 : Login
- Test case - 3 : Manage Sections
- Test case - 4 : Schedule a Slot
- Test case - 5 : Schedule Resources
- Test case - 6 : Cancel scheduled slot
- Test case - 7 : Cancel Resources
- Test case - 8 : Receive Emails

- Admin Test cases

- Test case - 9 : Login
- Test case - 10 : Manage Section Database
- Test case - 11 : Manage Student Database
- Test case - 12 : Manage Faculty Database
- Test case - 13 : Manage Resource Database
- Test case - 14 : Manage Time Slot
- Test case - 15 : Manage Labs
- Test case - 16 : Cancel the time slot

- Student Test cases

- Test case - 17 : Receive Emails

3. Integration Testing

- Coupling

- Test case - 1
- Test case - 2
- Test case - 3
- Test case - 4
- Test case - 5
- Test case - 6

4. System Testing

- Scenario 1 : Multiple Clicks
- Scenario 2 : Weak Internet connection , Images not visible properly

5. Bugs Fixed

6. References

1. Introduction

This is the Test Execution Document of the Web Application, 'AvailSys,Lab Reservation System', a Software Engineering project at the Information Technology Department of IIIT - Allahabad. 'AvailSys' project is a web application meant for Faculty of IIITA exclusively to reserve labs for each section. Its main goal is to improve the process of booking labs. This document presents the results of the execution of the different tests presented in AvailSys's Test plan document. The document is organized as follows:

- Section 1 is the Introduction itself.
- Section 2 introduces the results of Unit testing
- Section 3 introduces the results of Integration testing.
- Section 4 introduces the results of System testing.
- Section 5 describes the bugs found during the test phase, 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.
- Errors found if any, and maybe a reference to the bug and fixes report.

If error was found on a certain step of Test Case, the step number is given. 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.

Test were run on following environment:

Google Chrome, Microsoft edge, android 6' phone, 10' Tablet for checking web app's compatibility to size of the screen and its functionalities.

2. Unit Testing

Since we are working on a Web application, Unit tests were created as screenshots of all the visible interfaces. Each minute component has been checked for its function for e.g. every button's activity has been captured and shown as a test case.

1. Test Cases for Faculty

S.No	Name	Test
1	Register Faculty	Initial registration page so that the Faculty can create a personal account with the authorization of the admin.
2	Login	The page where Faculty can log into the created account.
3	View and Edit sections	This page allows the faculty to add, remove or edit students details to their respective sections.
4	Schedule a Slot	This page allows the Faculty to Book an available time slot for the lab required.
5	Schedule Resources	This page allows the Faculty to schedule resources for the lab.
6	Cancel Scheduled Slot	This page allows the Faculty to cancel the reserved slot that they have made.
7	Cancel Resources	This page allows the Faculty to cancel the reserved resources that they have made.
8	Receive Emails	The Faculty receives an email upon successful booking of the lab with details of when and where the lab is being held, for booking the resources and When lab or resources are being cancelled .

2. Test Cases for Admin

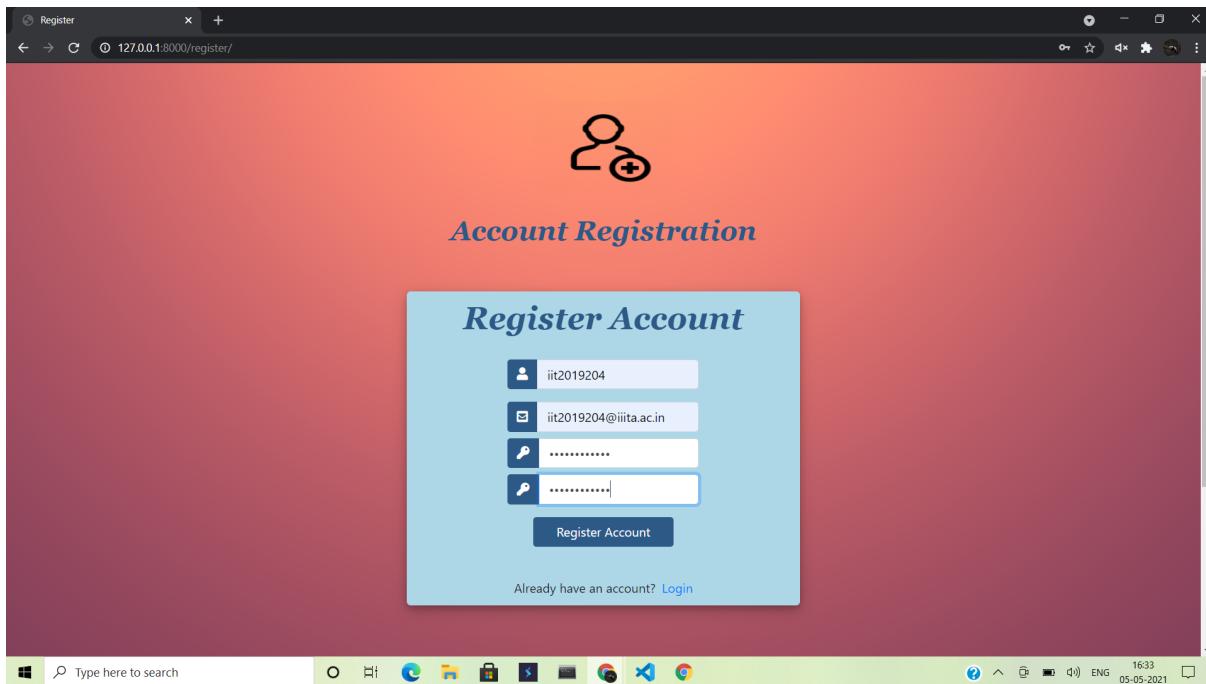
S.No	Name	Test
9	Login	The page where Admin can log in with the confidential credentials he has.
10	View Section Details	The page where Admin can add, remove, and edit any section details.
11	View Student Details	The page Where the admin can edit the details of the student.
12	View Faculty Details	The page Admin can add, remove, and edit any Faculty details.
13	Manage Resource Database	This page Allows the Admin to update the Resources Database according to the availability of resources.
14	Manage Time Slot	The page where Admin assigns the allowed time slots for - Faculty to select from.
15	Manage Labs	The page where Admin can assign available for Faculty to select from.
16	Cancel the Slot	The page where it allows the Admin to cancel any reserved slot.

3. Test Case for Student

S.no	Name	Test
17	Receive Emails	Students receive mails when their details are being edited,when Lab or resources are being scheduled , when Lab or resources are being cancelled for their section.

Faculty

Test Case-1: Register



This is the initial registration page so that the Faculty can create a personal account. The Faculty can only create an account if the Admin authorizes it.

When the Faculty, who is accessing the website, enters the credentials and clicks on the 'Sign up' button, he/she is redirected into the next page, Login page.

Select user to change | Django S x +

127.0.0.1:8000/admin/auth/user/

Django administration

Home : Authentication and Authorization : Users

ACCOUNTS

- Email addresses [+ Add](#)

APP

- Bookings [+ Add](#)
- Resource_bookings [+ Add](#)
- Resources [+ Add](#)
- Rooms [+ Add](#)
- Sections [+ Add](#)
- Student_links [+ Add](#)

« AUTHENTICATION AND AUTHORIZATION

- Groups [+ Add](#)
- Users [+ Add](#)

SITES

- Sites [+ Add](#)

SOCIAL ACCOUNTS

- Social accounts [+ Add](#)
- Social application tokens [+ Add](#)

Successfully deleted 6 users.

Select user to change

Action: 0 of 2 selected

<input type="checkbox"/>	USERNAME	EMAIL ADDRESS	FIRST NAME	LAST NAME	STAFF STATUS
<input type="checkbox"/>	admin	iit2019234@iita.ac.in			
<input type="checkbox"/>	iit2019204	iit2019204@iita.ac.in			

2 users

ADD USER +

FILTER

By staff status

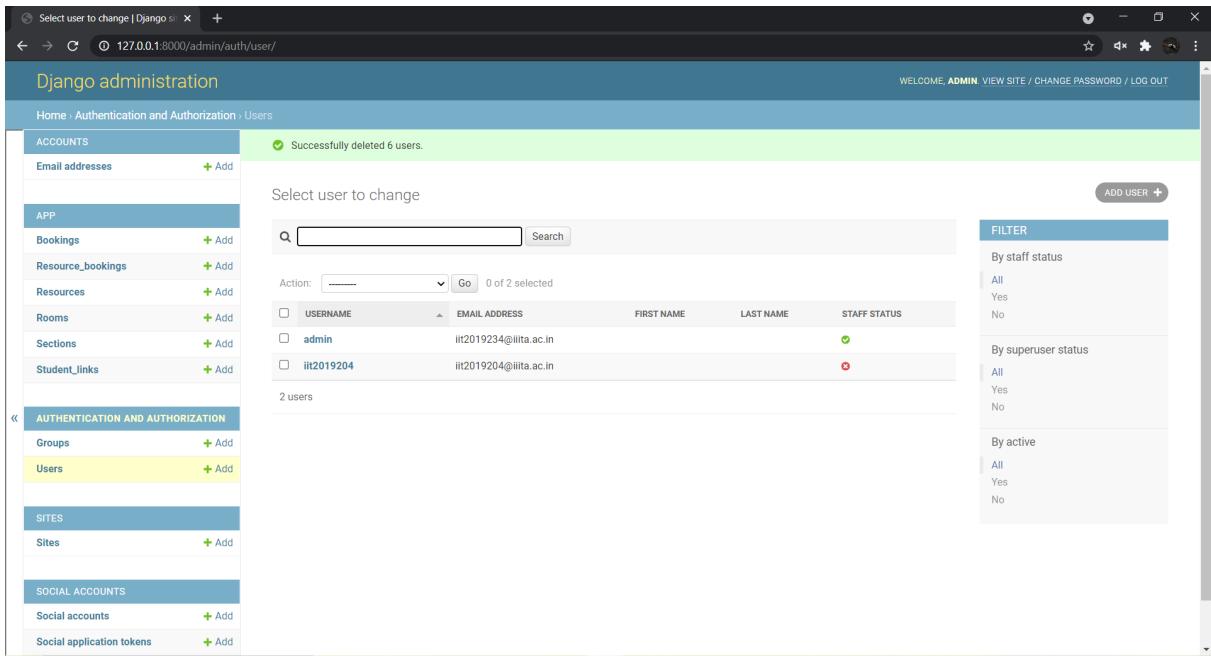
- All
- Yes
- No

By superuser status

- All
- Yes
- No

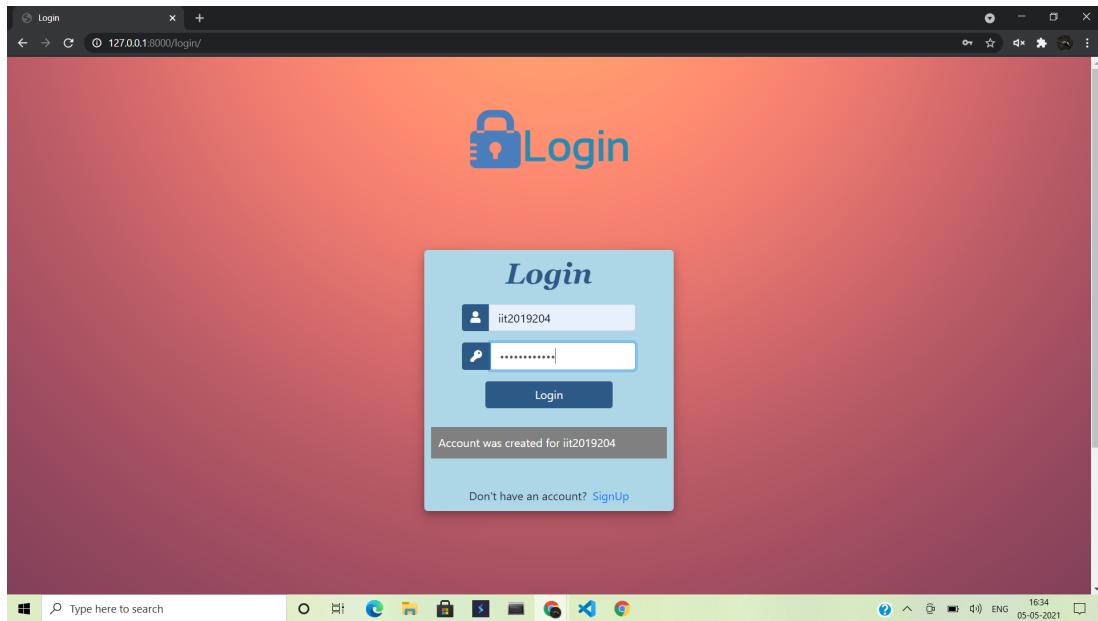
By active

- All
- Yes
- No

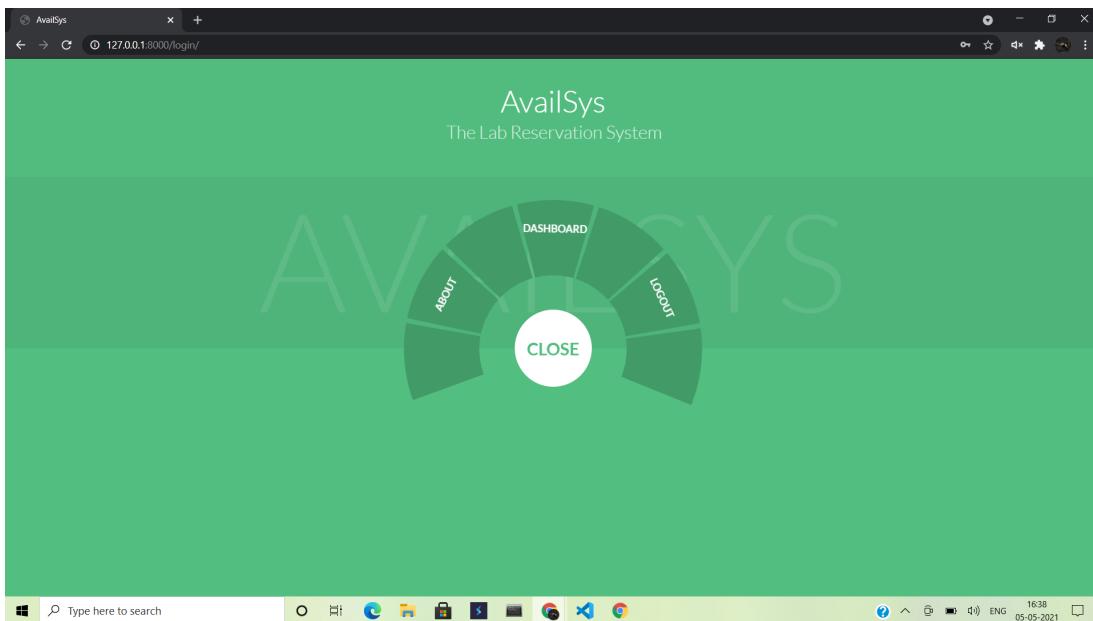


This shows that the test case 1 is passed.

Test Case-2: Login



This is the page where Faculty can log into the created account. When the Faculty, who is accessing the website, enters the credentials and clicks on the 'Login' button, he/she is redirected into the next page, student DashBoard page.



This shows that the test case 2 is passed.

Test Case-3 : Create section

AvailSys
The Lab Reservation System

ADD SECTION

Section:
sem-IV-C

Submit

This Allows Faculty to Create a Section under his name.

AvailSys
The Lab Reservation System

VIEW SECTION

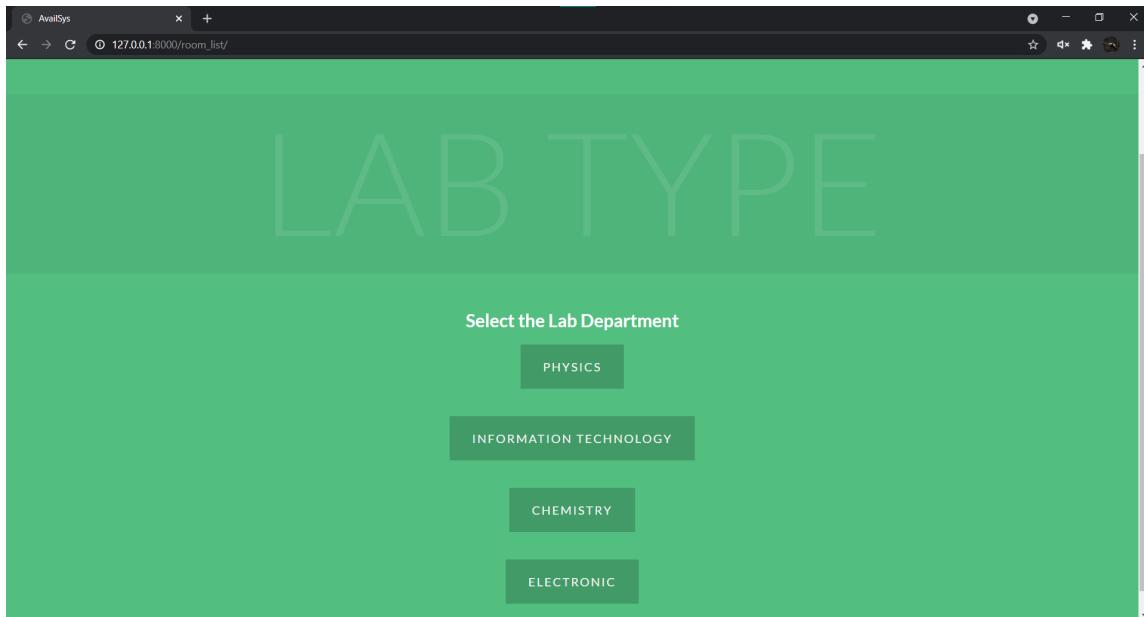
Section Id	Faculty	Remove
sem-IV-C	iit2019204	<button>DELETE</button>

MANAGE SECTION ADD SECTIONS

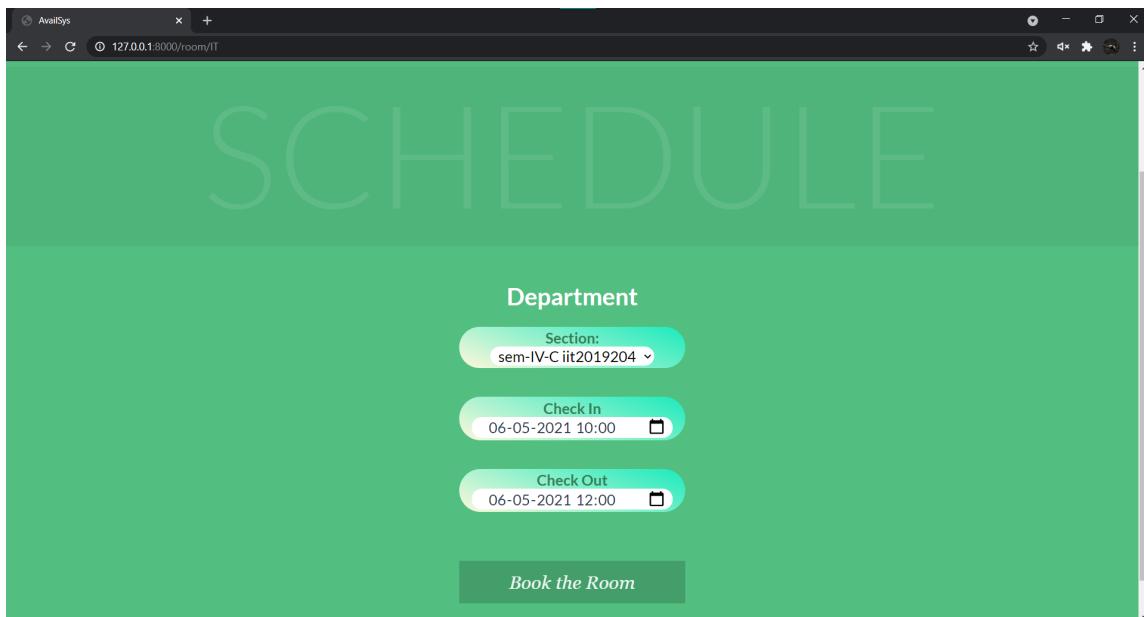
All the sections are visible from the view sections button.

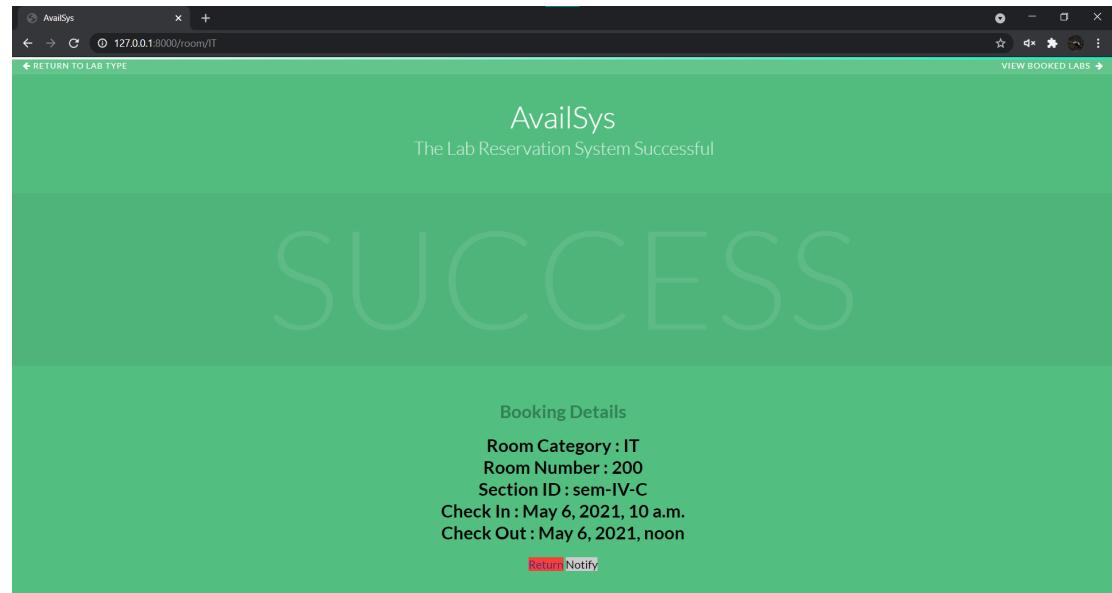
This shows that the test case 3 is passed.

Test Case-4:Schedule a slot



This Page allows the Faculty to choose the category of the lab to be booked.Let's say Information Technology is chosen.





This shows that the test case 4 is passed.

Test Case-5: Schedule Resource

A screenshot of a web browser window titled "AvailSys". The URL is "127.0.0.1:8000/resource_book/". The page has a large "BOOK RESOURCE" header. Below it, there is a "Slot:" field containing the text "iit2019204 has booked 200. IT from 2021-05-06 10:00:00+00:00 to 2021-05-06 12:00:00+00:00". There are two dropdown menus: "Resource:" set to "GPU" and "Quantity:" set to "3". At the bottom, there is a "RETURN TO DASHBOARD (WARNING: REQUEST ABOVE WON'T BE ACCEPTED)" button and a "SAVE" button.

A screenshot of a web browser window titled "AvailSys" showing the URL "127.0.0.1:8000/resourcepage/". The page has a green header with the text "AvailSys" and "The Lab Reservation System". Below the header, a large white box contains the text "VIEW RESOURCE". Underneath this, there is a table with the following columns: "Selected booking", "Selected resource", "Quantity", and "Status". A single row is present in the table, showing the booking details: "iit2019204 has booked 200. IT from 2021-05-06 10:00:00+00:00 to 2021-05-06 12:00:00+00:00", "GPU", "3", and "Pending". To the right of the table is a "DELETE" button.

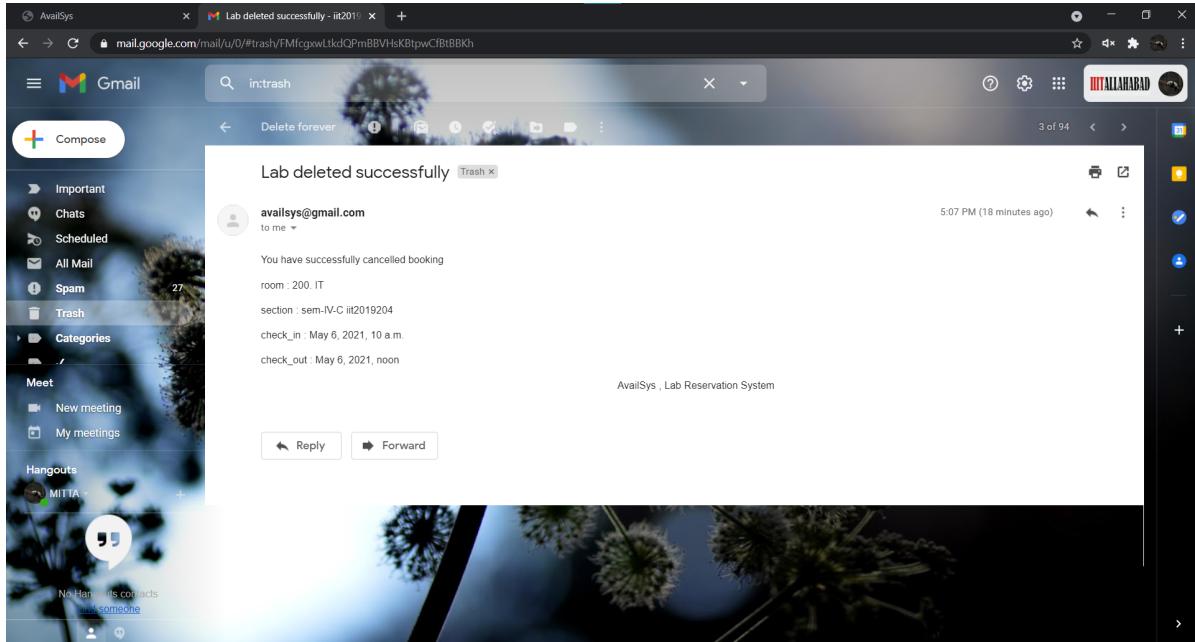
This Allows to book resources for the scheduled labs.

This shows that the test case 5 is passed.

Test Case-6: Cancel the Slot

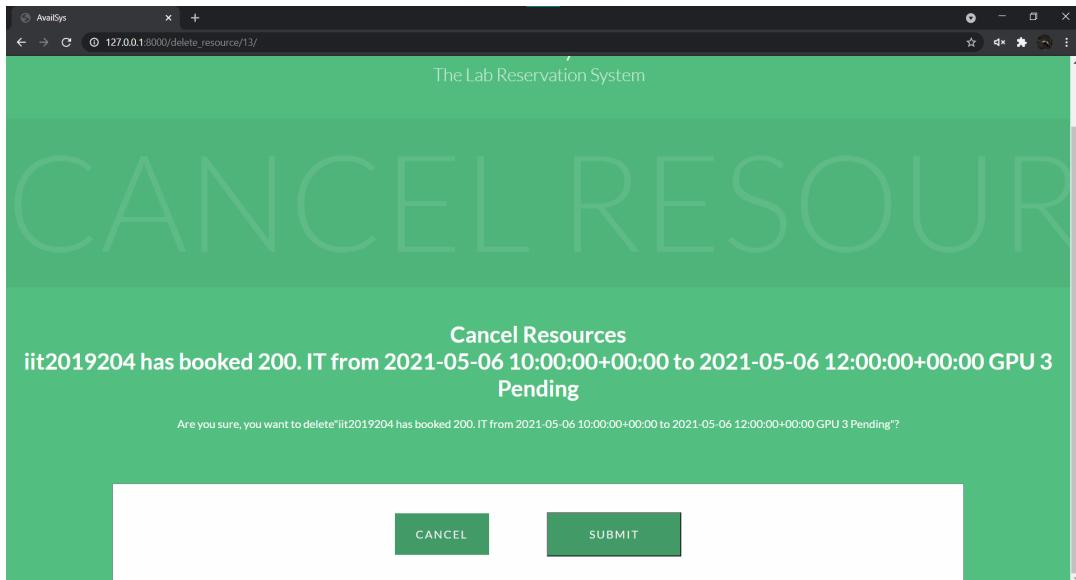
A screenshot of a web browser window titled "AvailSys" showing the URL "127.0.0.1:8000/delete_booked_lab/41/". The page has a green header with the text "DELETE SLOT". Below the header, the text "Delete Slot" is displayed. A confirmation message asks, "Are you sure you want to delete this Scheduled Slot?". Below the message, the following details are listed: Room Category : IT, Room Number : 200, Section ID : sem-IV-C, Check In : May 6, 2021, 10 a.m., and Check Out : May 6, 2021, noon. At the bottom of the page are two buttons: "RETURN" and "CANCEL THE BOOKING".

This page shows the booked labs of corresponding faculty and is able to cancel the lab. The confirmation check box is displayed and you have to confirm your status.

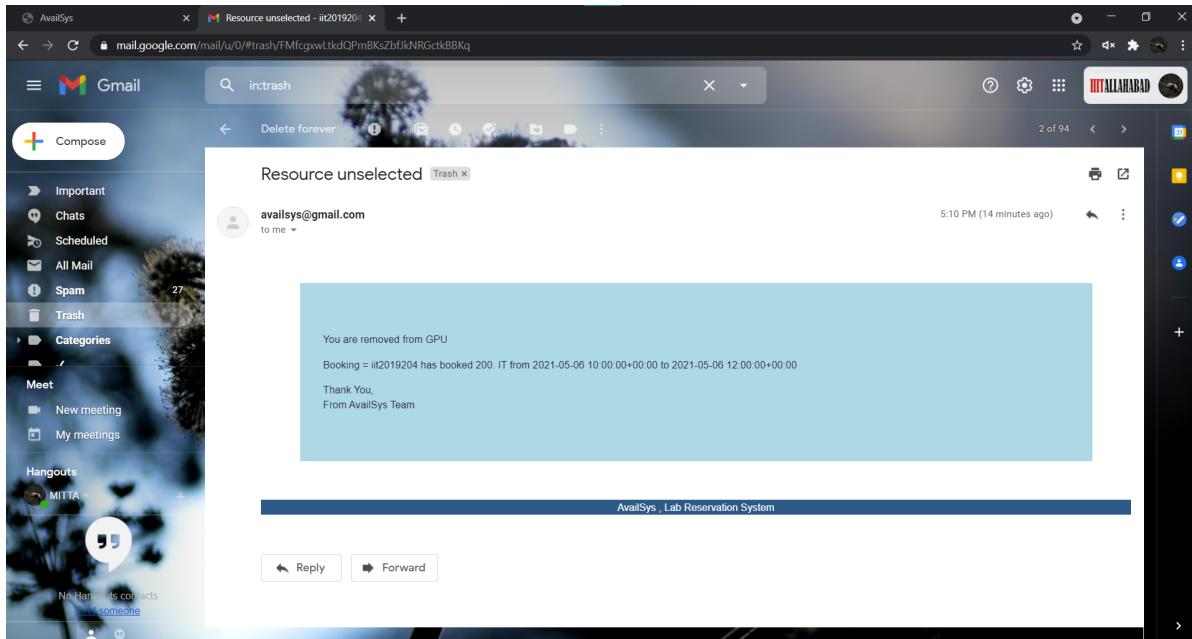


This shows that the Test Case 6 is passed

Test Case - 7: Cancel Resources

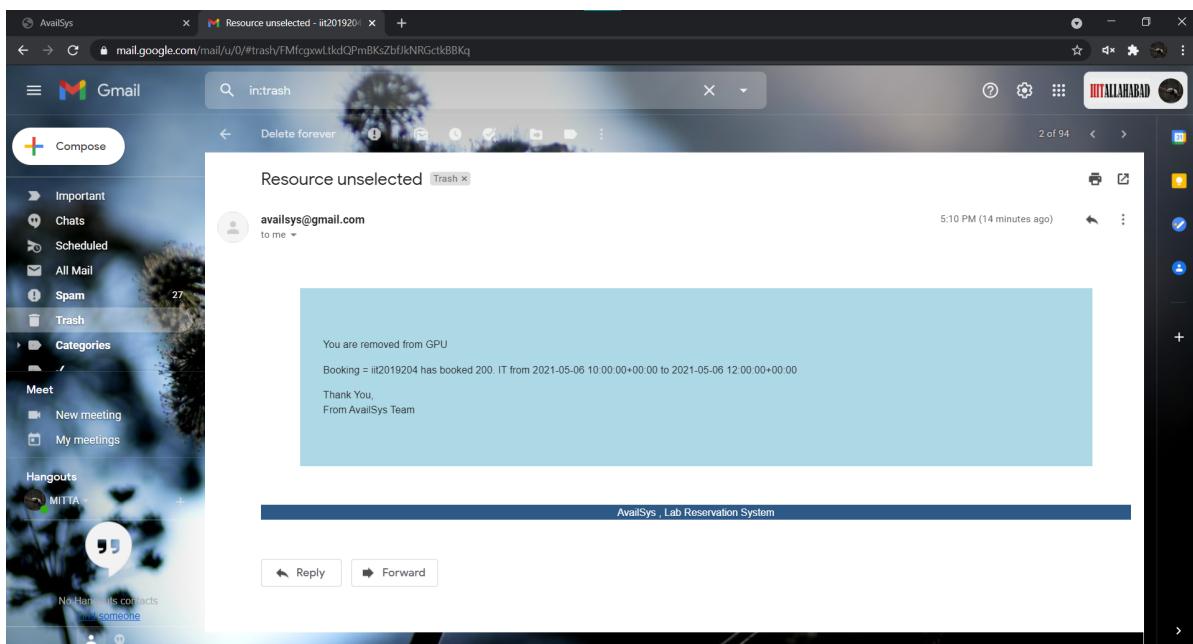
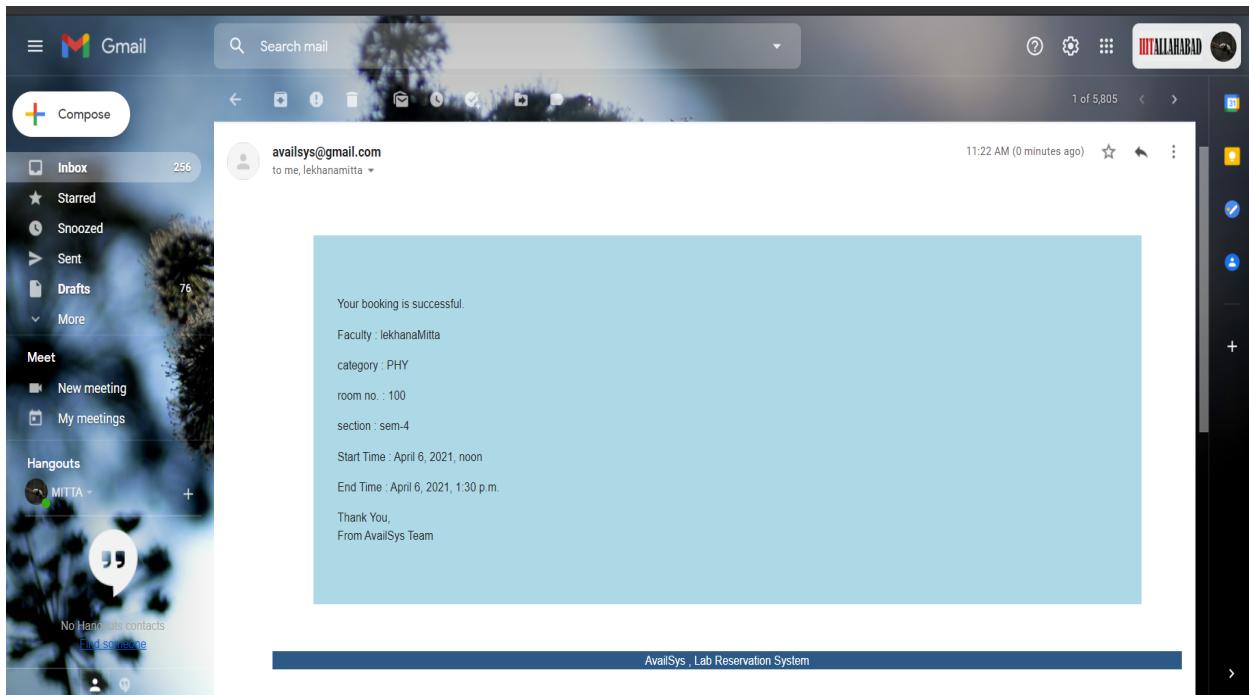


This page shows the booked resources of corresponding faculty and is able to cancel the resources. The confirmation check box is displayed and you have to confirm your status .

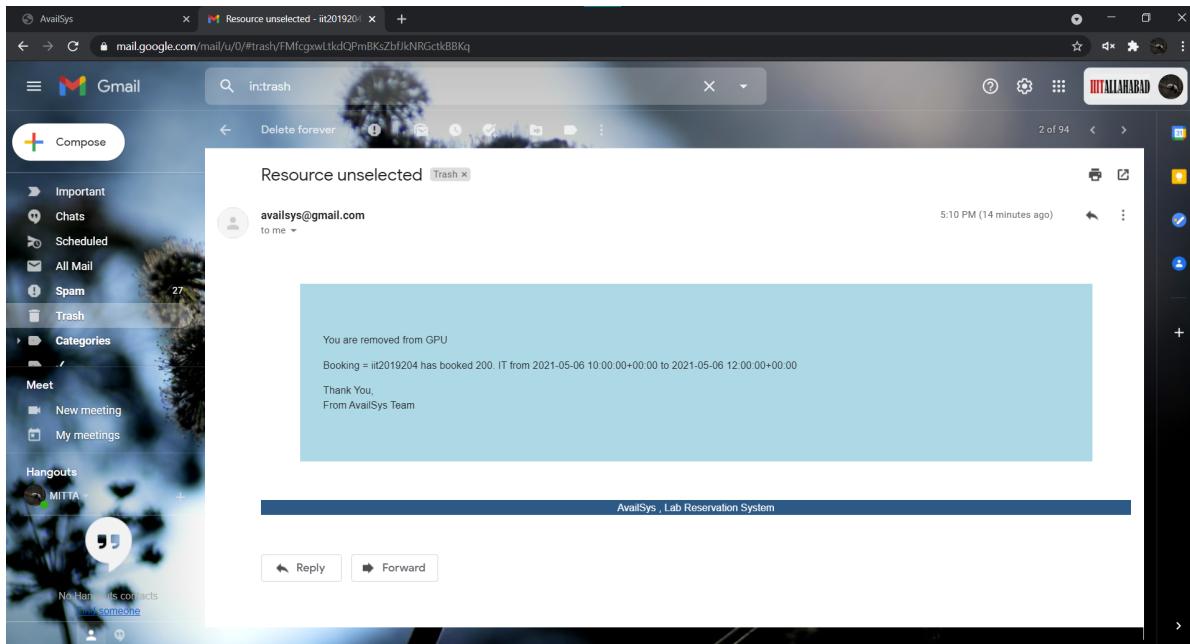


This shows that the Test Case 7 is passed

Test Case-8:Receive Emails



When booking is done , Faculty receives an auto generated email.

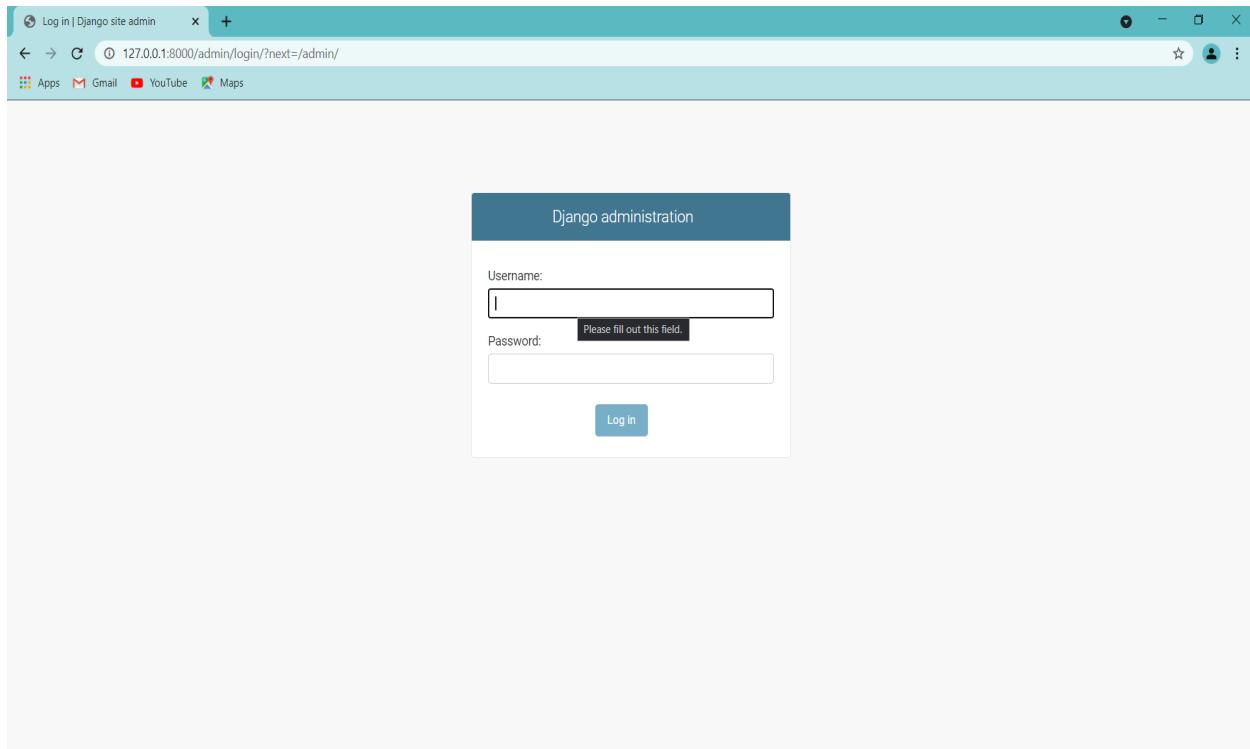


When booking is done , Faculty receives an auto generated email.

This shows that the test case 8 is passed.

Admin

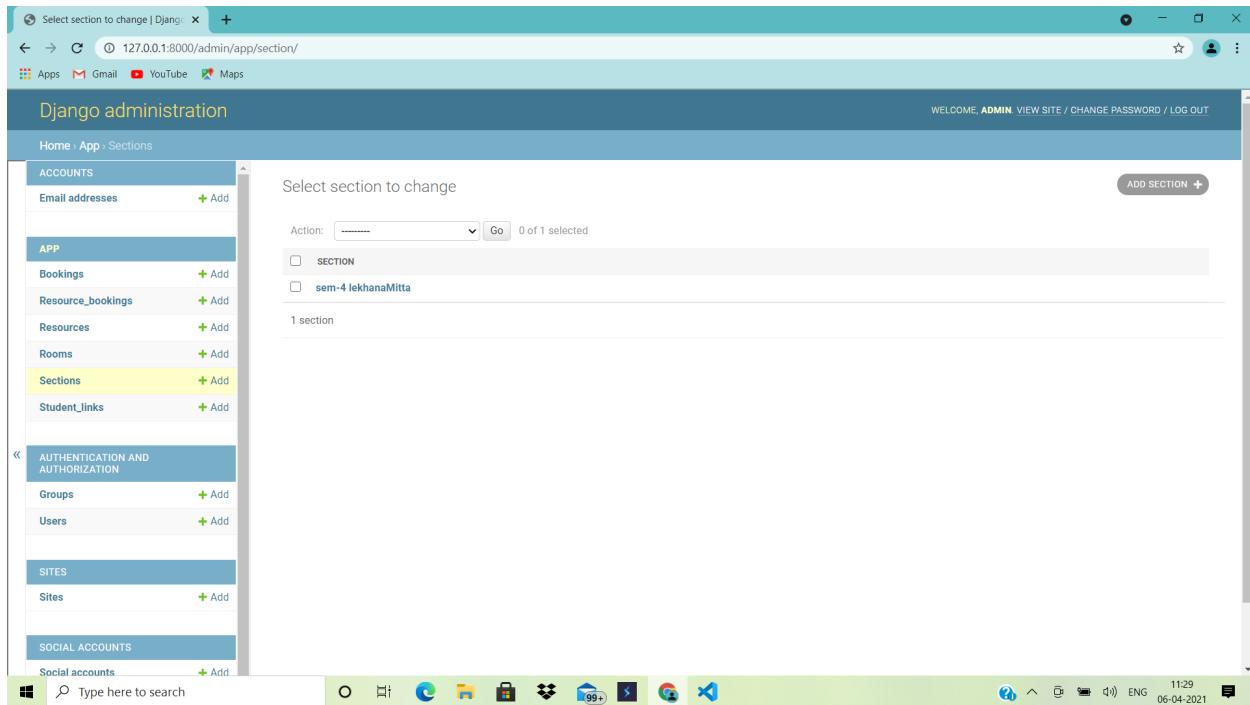
Test Case-9:Login



Login page for the Admin to access all the details.

This shows that the test case 9 is passed.

Test Case-10:View Section Details



Admin can view all the section details in this page and can delete a section or even add a new one. Actions are performed after selecting a section and from the drop-down menu on the top of the page.

This shows that the test case 10 is passed.

Test Case-11:View Student Links

The screenshot shows the Django administration interface at the URL 127.0.0.1:8000/admin/app/student_link/. The left sidebar has a tree structure with categories like ACCOUNTS, APP, AUTHENTICATION AND AUTHORIZATION, SITES, and SOCIAL ACCOUNTS. Under the APP category, 'Student_links' is selected and highlighted in yellow. The main content area is titled 'Select student_link to change' and shows a table with one row. The table has columns for 'STUDENT_LINK' and 'it2019204@iiita.ac.in'. There are checkboxes next to each row. At the top right of the content area is a button labeled 'ADD STUDENT_LINK +'. The top right of the page also has links for 'WELCOME, ADMIN', 'VIEW SITE / CHANGE PASSWORD / LOG OUT'.

This page shows all the details of the students added in the students database.

This shows that the test case 11 is passed.

Test Case-12:View Faculty Details

Select user to change

Action:	USERNAME	EMAIL ADDRESS	FIRST NAME	LAST NAME	STAFF STATUS
<input type="checkbox"/>	admin	iit2019208@iita.ac.in			✓
<input type="checkbox"/>	lekhanaMitta	lekhanaMitta@gmail.com			✗
<input type="checkbox"/>	meghana	meghana@gmail.com			✗

3 users

FILTER

By staff status

- All
- Yes
- No

By superuser status

- All
- Yes
- No

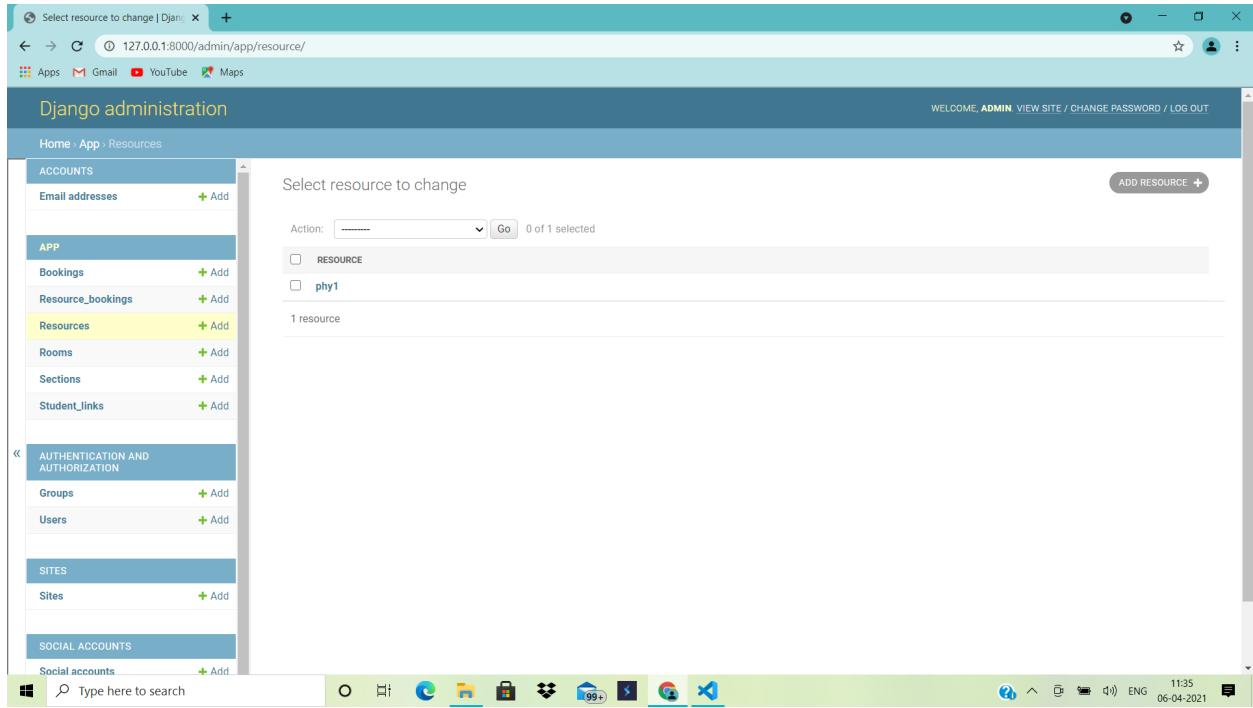
By active

- All
- Yes
- No

This shows the users of the website , admin can filter all the users by type , by activity,by staff status.

This shows that the test case 12 is passed.

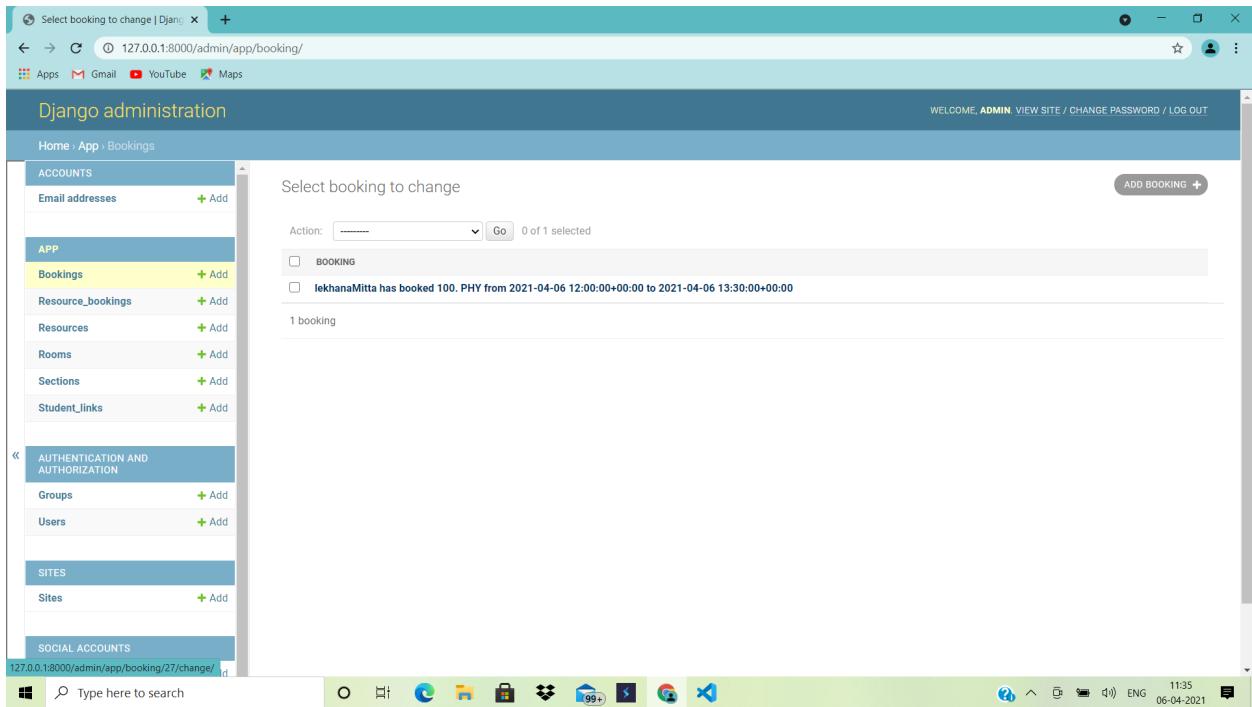
Test Case-13:Manage Resource Database



We can manage all resources , edit the total number of resources , add or delete a resource.

This shows that the test case 13 is passed.

Test Case-14: Manage Timeslot



Admin can manage the time slots users booked , he could delete a time slot or even can add a time slot.

This shows that the test case 14 is passed.

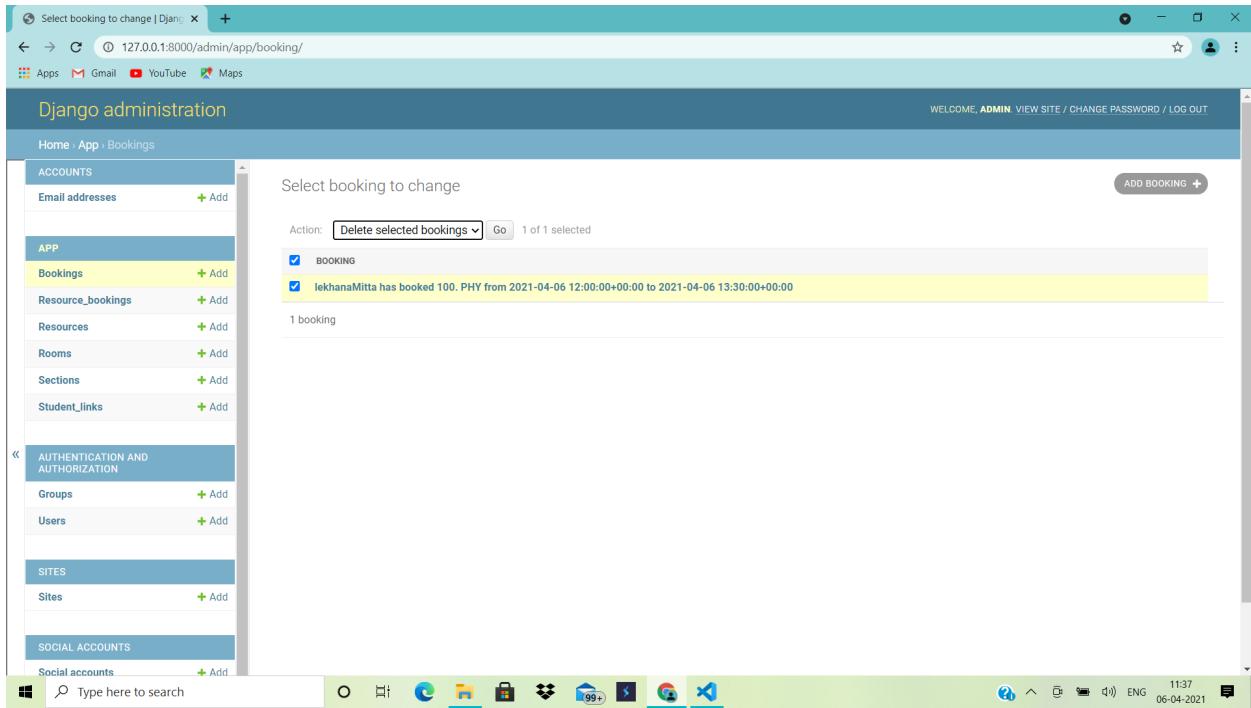
Test Case-15:Manage Labs

The screenshot shows the Django administration interface for the 'Rooms' model. The left sidebar lists various models: ACCOUNTS, APP, AUTHENTICATION AND AUTHORIZATION, SITES, and SOCIAL ACCOUNTS. Under the APP section, 'Rooms' is selected and highlighted in yellow. The main content area displays a list titled 'Select room to change' with 8 rooms listed. Each room entry includes a checkbox labeled 'ROOM' and a room number followed by its name (e.g., '401.EEE', '400.EEE', etc.). A search bar at the bottom left says 'Type here to search'. The top right corner shows a welcome message for 'ADMIN' and links for 'VIEW SITE / CHANGE PASSWORD / LOG OUT'.

Admin can check out all the scheduled slots and details of scheduled labs like lab number, slot timings, Under whom(which Faculty).

This shows that the test case 15 is passed.

Test Case-16:Cancel Slot



After selecting the option to delete from the drop down menu , admin can select the ones which he wants to delete and press enter.

This shows that the test case 16 is passed.

Student

Test Case-17:Receive Emails



When a lab is scheduled , students receive an email of intimation that his/her faculty has booked a lab and details are mailed . Similarly they receive an email when a lab slot is cancelled , and when a student details are edited.

This shows that the test case 17 is passed.

3.Integration Testing

Integration testing,also known as integration and testing, is a software development process in 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 a 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 CASE1:

When the logged in faculty wanted to create a new section for which he/she is an instructor for a new class then he/she can go for **Create New Section** and enter the required details such as section name,faculty and submit the details , then in the dashboard you will be able to see the section details,instructor details and will be able to update or make changes in the newly created section.

Since, these related modules ,Admin's module and Faculty module are working fine together ,hence this test case is passed.

TEST CASE2:

When the logged in faculty wants to see the students for which he/she is the instructor can go for **See Students**. He/She can also view the students and make changes with respect to their details mentioned before,labs the student has been enrolled and scheduled for ,and ask whether the student and instructor should get confirmation mail or you can just return .

Since these relational modules are working fine together,hence this test case is passed.

TEST CASE 3:

When the instructor wanted to book lab for his/her students ,he/she can just go for **Book Lab** select the lab department and this directs to the page where slot is being booked by the faculty based on the section where the check in and check out time are also being mentioned , which also in turn sends a confirmation email to students of that section and instructor.

Since these relational modules are working fine together,hence this test case is passed.

TEST CASE 4:

When the instructor wanted to book lab resource for his/her students ,he/she can go for **Book Resources** where the instructor has to enter the detail for which time slot the resource has to be booked , type of resource and quantity of resource and can save the content or else and go to dashboard where content cannot be saved.

Since these relational modules are working fine together,hence this test case is passed.

TEST CASE 5:

When the instructor wants to view the booked lab then he/she can go to **View Booked Labs** where he/she will be able to see the booked lab details such as department,room number,check in and check out time and be able to delete the booking .

Since these relational modules are working fine together,hence this test case is passed.

TEST CASE 6 :

When the instructor wants to view the resources booked then he/she can go for **View Booked Resources** where he/she will be able to see the booked resource details such as for which time slot it has been booked , quantity of resource and status of resource and will be able to delete resources.

Since these relational modules are working fine together,hence this test case is passed.

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:

Repeated booking on the same time slot of the lab. When booking a lab slot , there is a chance of booking a slot in the while it's already booked.

Errors Found :

Bug 1 was found during this test. Otherwise the results were as expected.

Scenario 2 :

Problems arose when the Faculty was trying to delete a student from the database.

Errors Found :

Bug 2 was found during this test.
Otherwise the database will function normally.

Scenario 3 :

Low internet connection, blank screen visible for a long period while loading.

Errors Found :

Bug 3 was found during this test.

Otherwise the website's navigation will not be affected.

5. Found and Fixed Bug

In this section, the bugs we found during the first execution of test cases are listed. Also the fixes for bugs are listed. All bugs listed here are fixed.

BUG 1

BUG 1 Description:

When booking a lab slot , there is a chance of booking a slot in the while it's already booked.

Fix :

It is fixed by applying a filter using iteration using a database , whether it's available or not . Using this we fixed this bug.

BUG 2

BUG 2 Description:

Problem in deleting a student from the section by faculty, while deleting the whole data is being erased from the database .This deleted the student data in the students list of other faculty members as well.

Fix:

To fix this problem , we enabled the Faculty to add his/her own students in order to maintain a special list for the faculty .

BUG 3

BUG 3 Description:

It was found that if there is poor network coverage, the loading and database interaction activity shows the revolving circle for a prolonged period of time until the connection strengthens.

Fix:

It is advised to use this application over college Wi-Fi or any internet connection of stronger signal strength.

6. References

- https://www.youtube.com/watch?v=-9dhCQ7FdD0&list=PL_6Ho1hJirn8WbY4xfVUAIcn51E4cSbY
- <https://www.youtube.com/watch?v=1BaLWYUO1k4>
- <https://docs.djangoproject.com/en/3.1/topics/email/>

