

User Manual

Smart Meeting Automaton

Version 1.0

28th May 2021

Group Members:

- E/16/022 - Amarasinghe D.L.C.
- E/16/025 - Amasith K.T.D.
- E/16/222 – Madushanka S.D.W.

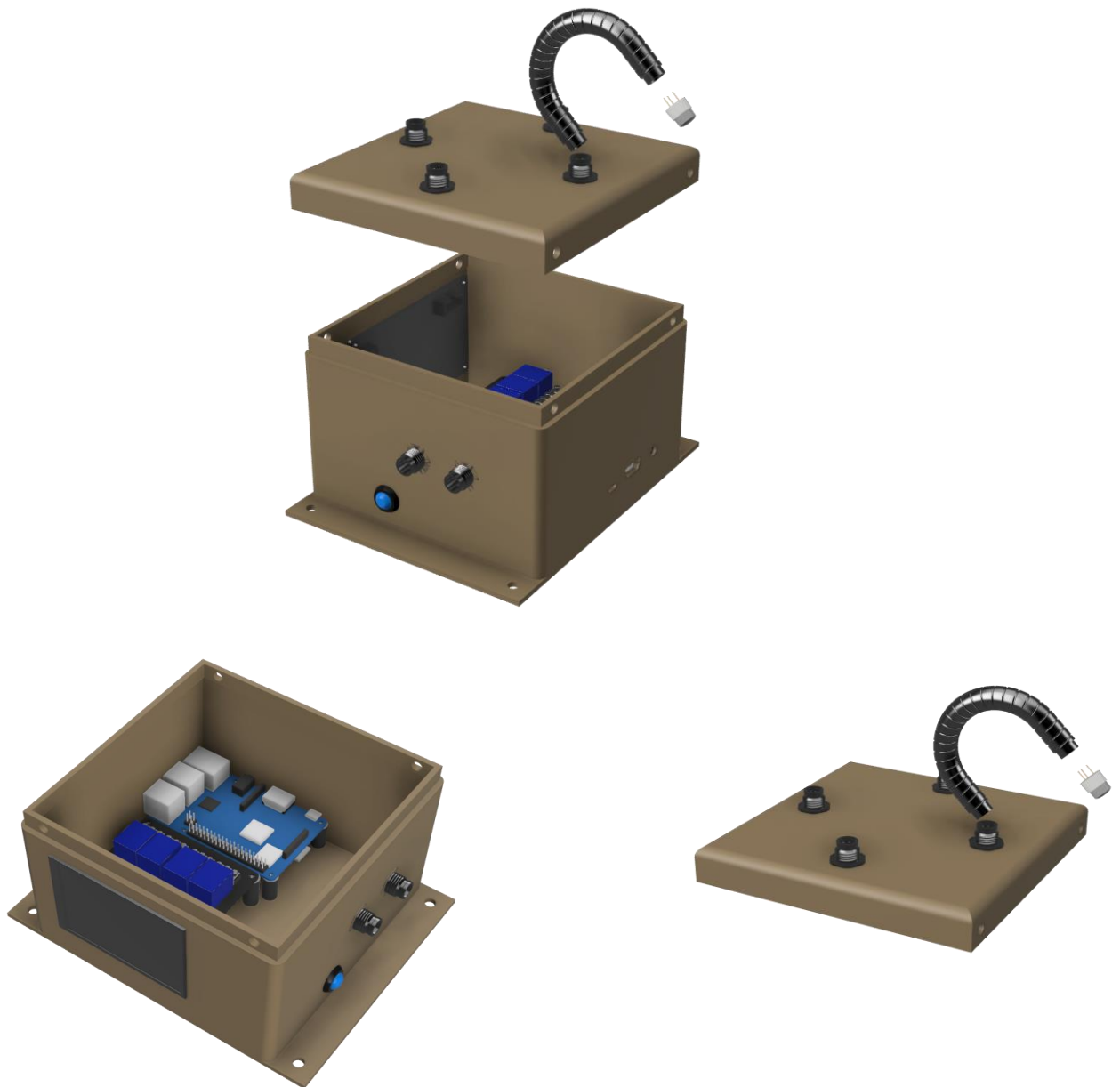
Table of Contents

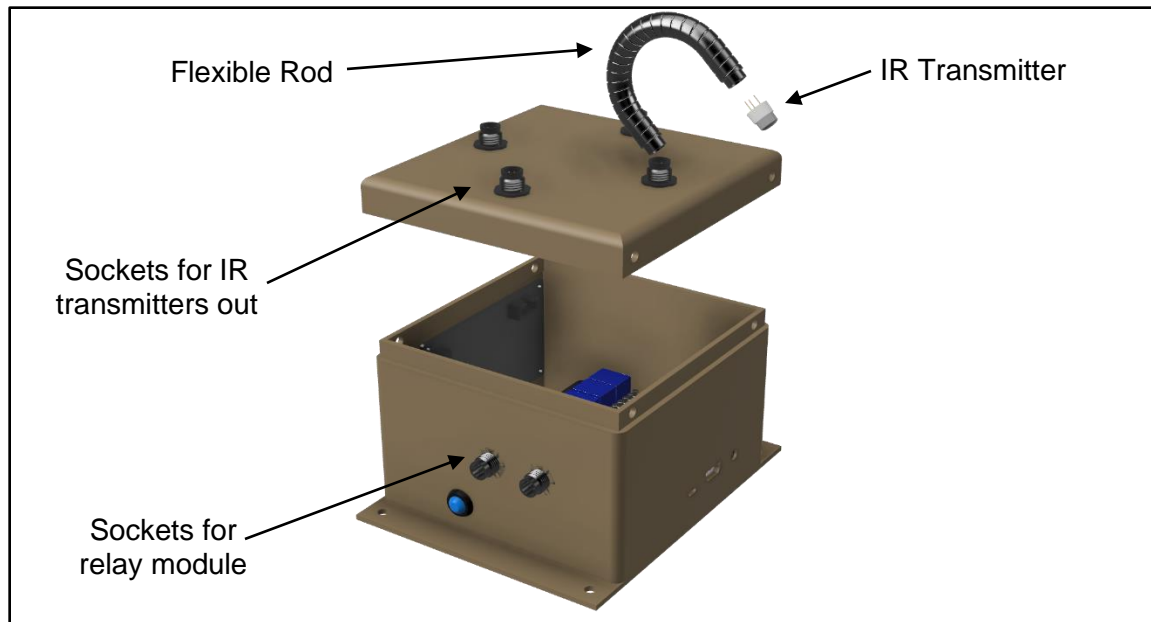
General Information	3
Hardware Overview	3
Physical Structural Design	3
PCB Design	5
Schematics Design	6
Software Overview	8
REST APIs available on the software	9
User Portal	11
Web Application	11
Mobile Application	19

General Information

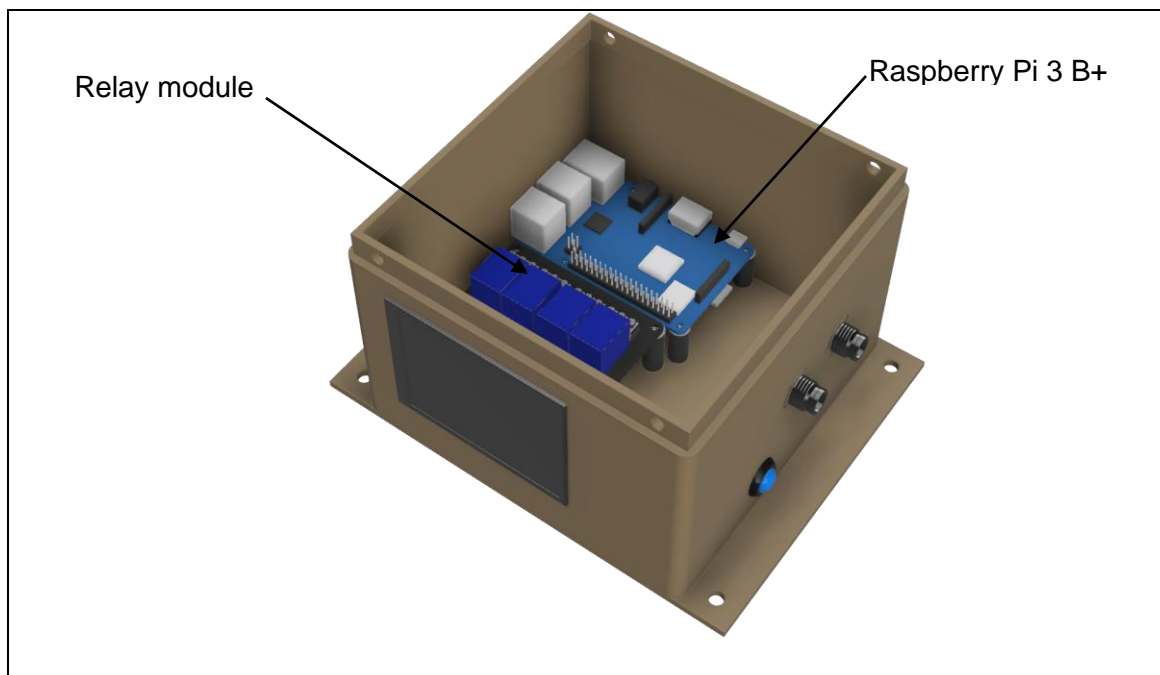
Hardware Overview

Physical Structural Design



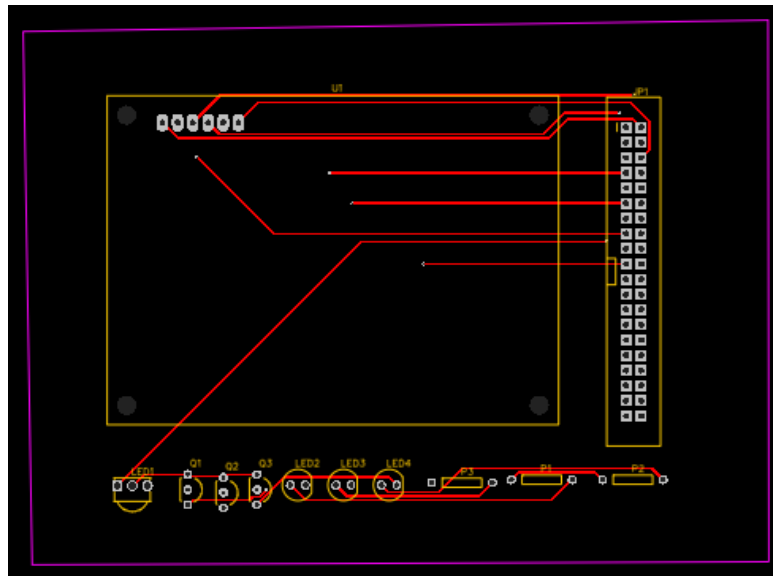


Few main component placements

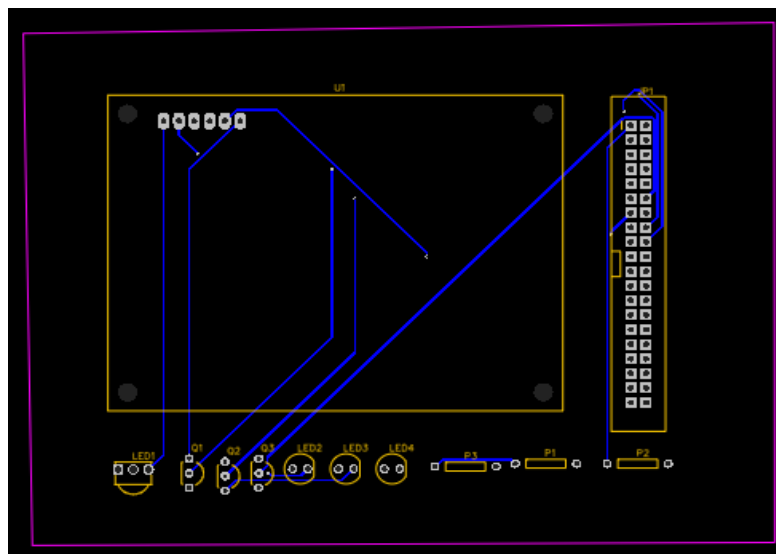


Few main component placements

PCB Designs



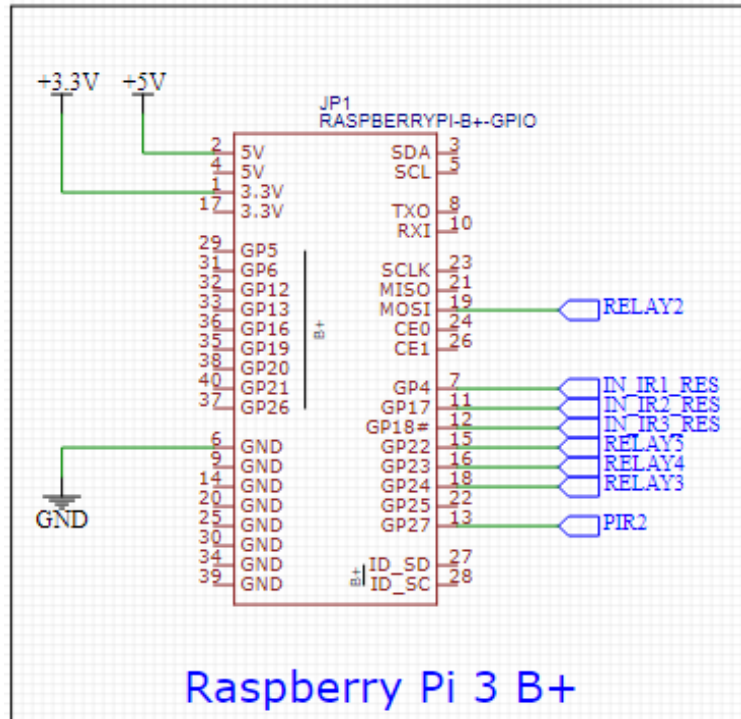
Top View of the PCB Layout Design



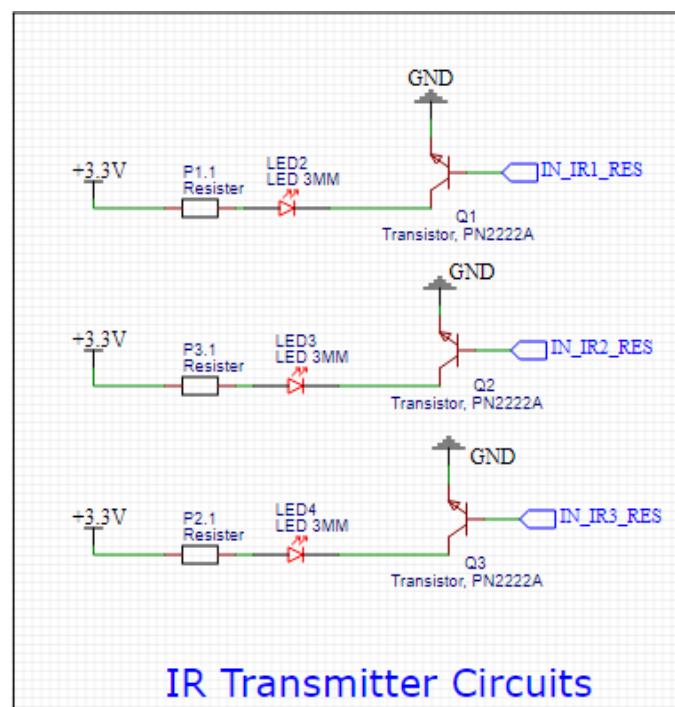
Bottom View of the PCB Layout Design

Schematic Designs

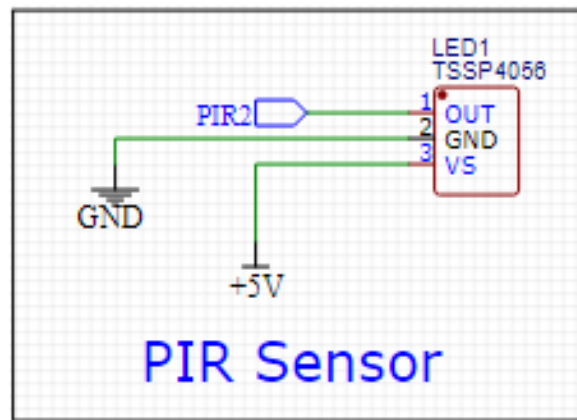
1. Raspberry Pi 3 B+



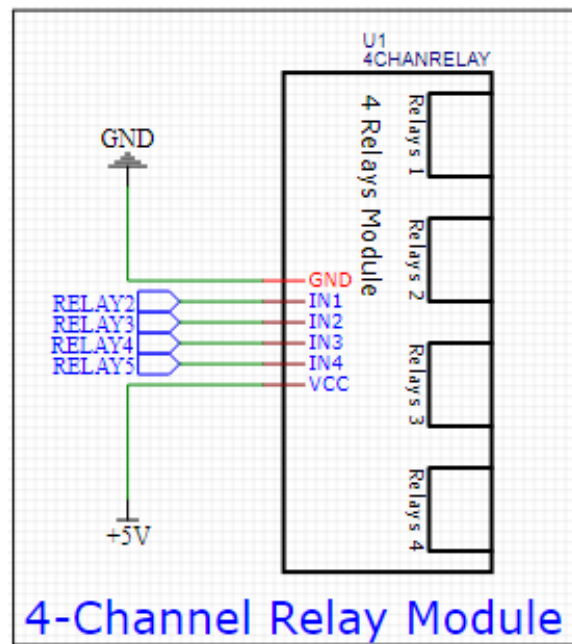
2. IR Transmitter



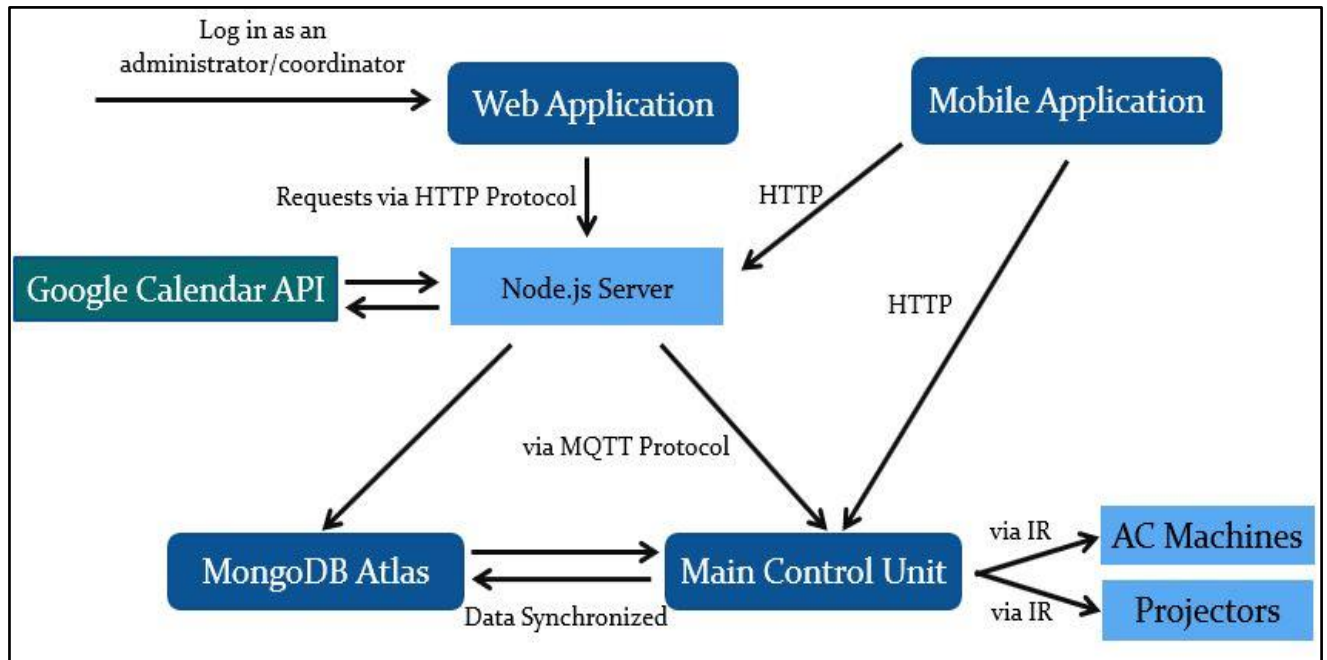
3. PIR Motion Sensor



4. Relay Module with 4 Channels



Software Overview



Users can use web application to log in to the system. It communicates with Node.js server which serves data to MongoDB Atlas Cloud and control units in meeting rooms. The local server that is running within hardware nodes (control units) control AC machines and projectors. The mobile application can connect the main control unit through QR code scanning pertaining to each meeting room. Data within main control unit synchronizes with MongoDB Atlas cloud database periodically. Node.js server is using Google calendar API to regularize data that sends to the database and control units.

REST APIs available on the software

1. User can get a timetable for a day

`http://{backend_ip}/main/timetable/user/today`

2. Get all the rooms in the system

`http://{backend_ip}/main/table`

3. To get all the components in a room

`http://{backend_ip}/main/get/roomCompData`

4. Update the rooms with AC and projectors

`http://{backend_ip}/main/update/room`

5. Delete schedules by its id

`http://{backend_ip}/main/delete/schedule/:id`

6. To get the status of the meeting room

`http://{backend_ip}/main/rooms/status`

7. To get free rooms available at a given start time and end time

`http://{backend_ip}/main/free/rooms/custom`

8. To get free rooms available at a given time

`http://{backend_ip}/main/free/rooms`

9. To get all schedules relevant for the user

`http://{backend_ip}/main/get/schedule/user`

10. To get all schedules relevant for the user from now till the end of the day

`http://{backend_ip}/main/get/schedule/all`

11. Add a schedule

`http://{backend_ip}/main/add/schedule`

12. Add a room

`http://{backend_ip}/main/add/room`

13. To get all details of the room

`http://{backend_ip}/main/room/:id`

14. delete room by id

`http://{backend_ip}/main/deleteroom/:id`

15. remove user from system by id

`http://{backend_ip}/main/removeuser/:id`

16. Get room component data

`http://{backend_ip}/controlUnit/get/roomCompData`

17. Get schedules for a room

`http://{backend_ip}/controlUnit/room/get/schedule`

18. Authenticate control unit

`http://{backend_ip}/login/controlUnit/`

19. Get logged in user details

`http://{backend_ip}/api/auth`

20. Auth user & get token when login

`http://{backend_ip}/api/auth (POST)`

21. User first time registration

`http://{backend_ip}/api/register`

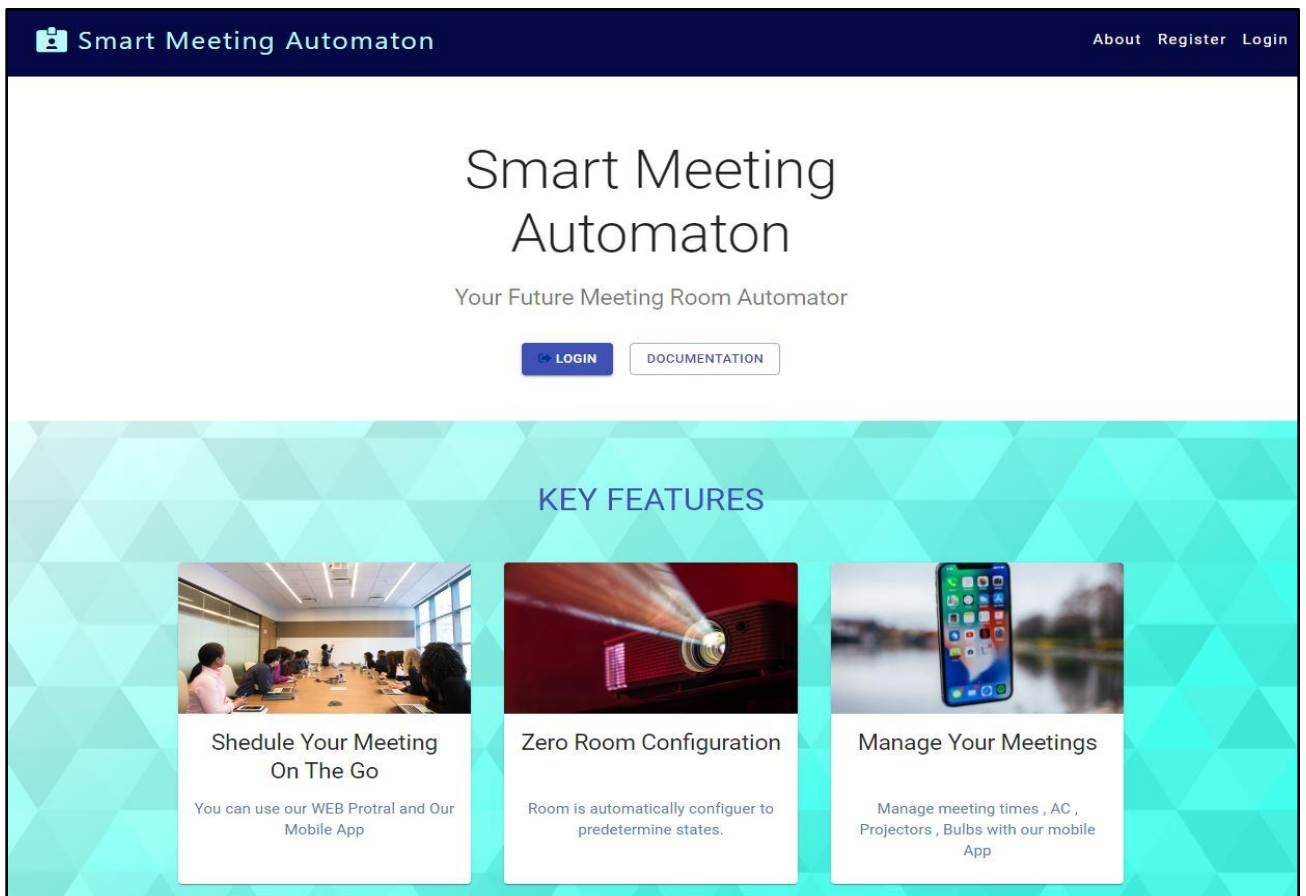
22. Admin add new user

`http://{backend_ip}/api/newuser/ (POST)`

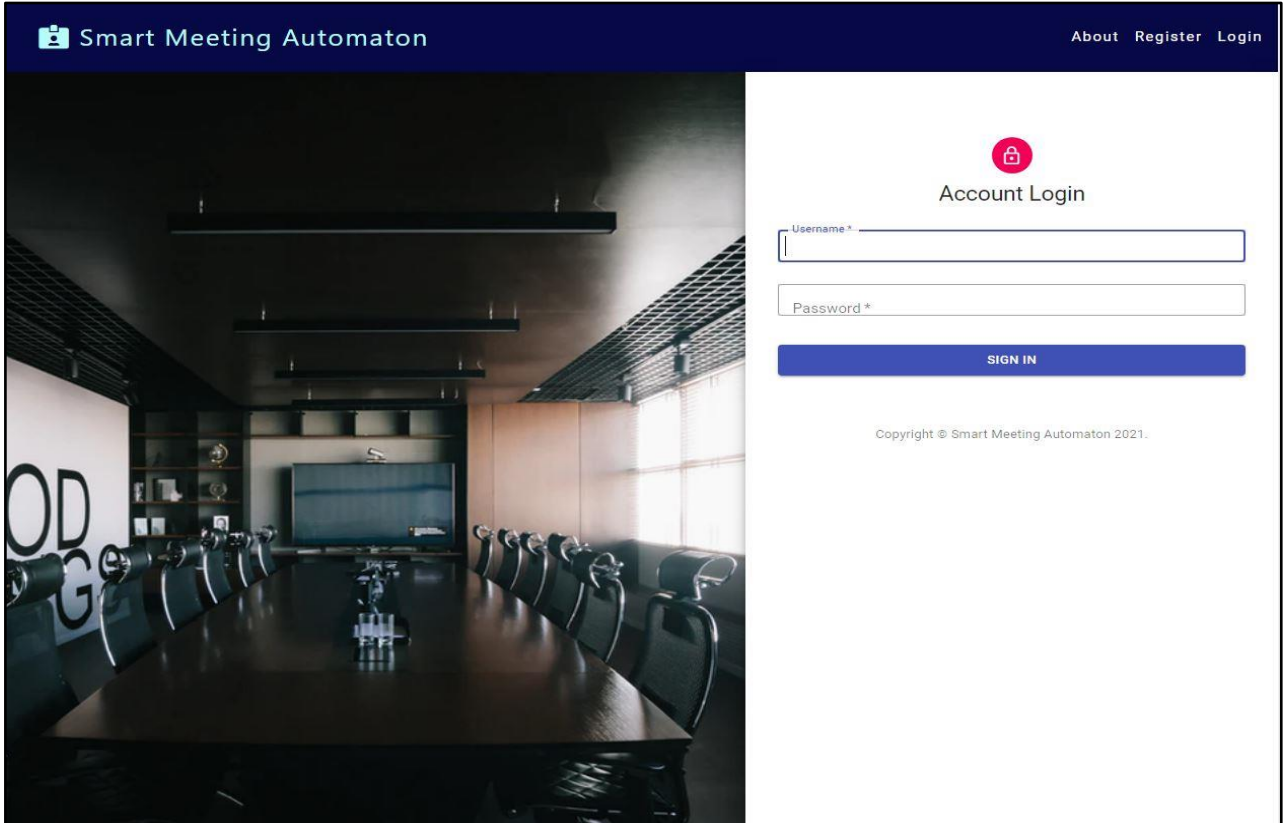
User Portal

Web Interface

- Landing page



- **Login window**



Smart Meeting Automaton

About Register Login

Account Login

Username *

Password *

SIGN IN

Copyright © Smart Meeting Automaton 2021.

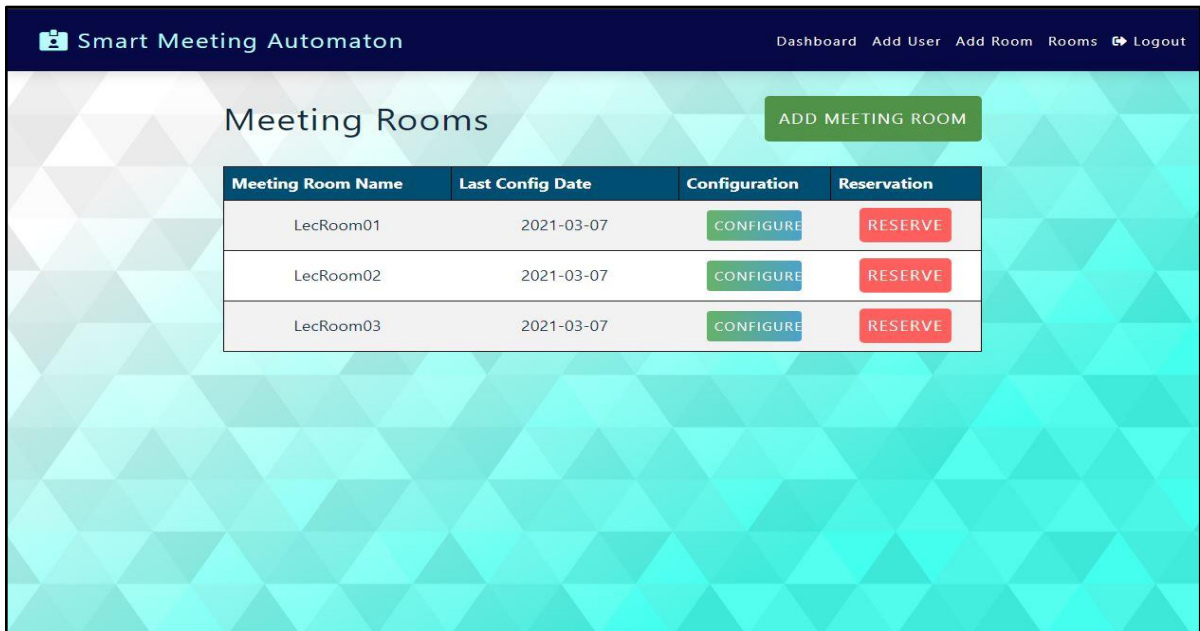
Users can login to the system using their username and password. There are two types of users.

- Administrator users
- Coordinator users

Tasks for administrator user

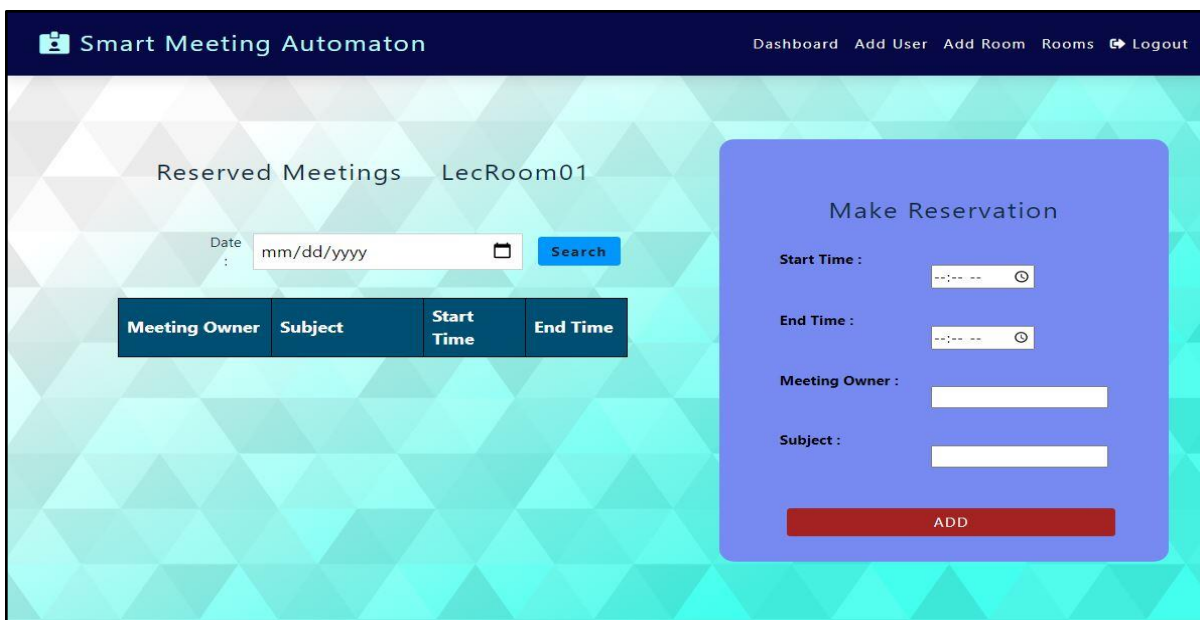
1. Meeting room reservation
2. Configure devices within a meeting room
3. Registering new coordinator users
4. View status of meeting rooms
5. Adding new meeting rooms with control units to the system

- **Administrator dashboard**



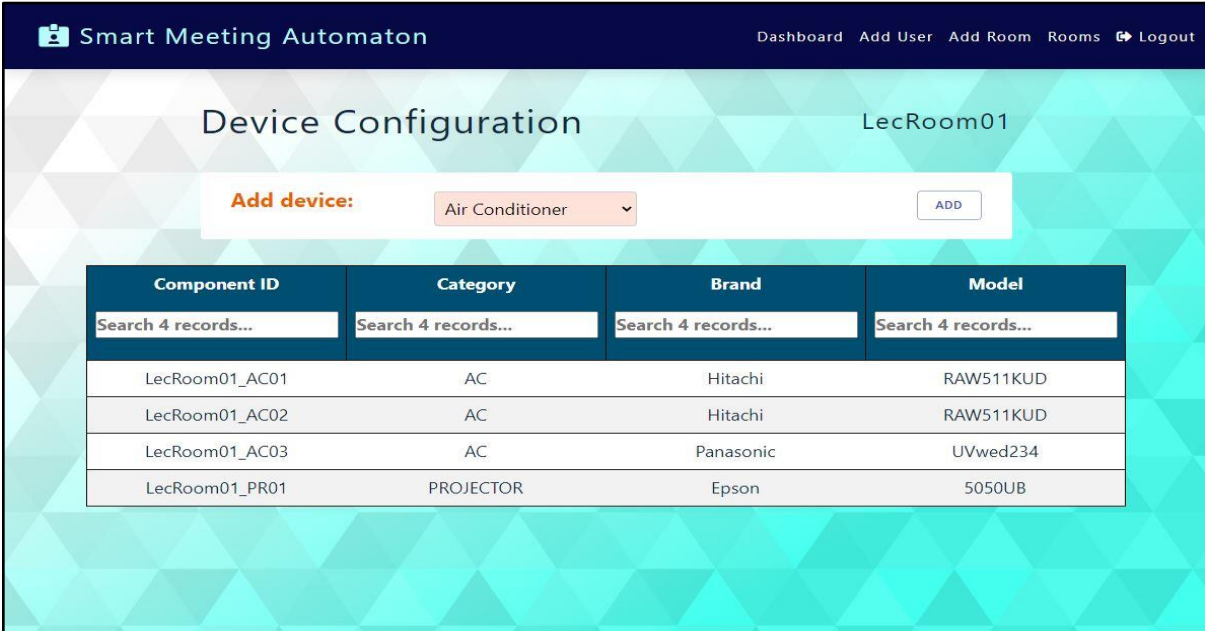
This is the dashboard of the administrator. All the lecture rooms having a control unit are displayed here with last configured dates. Here, meeting room reservation and meeting room configuration can be done.

1. Meeting room reservation



Administrator can search existing scheduled meetings in relation to a particular date for a selected meeting room. A meeting can be scheduled for the same day for that meeting room by allocating a free time slot.

2. Configure devices within a meeting room



Smart Meeting Automaton

Dashboard Add User Add Room Rooms Logout

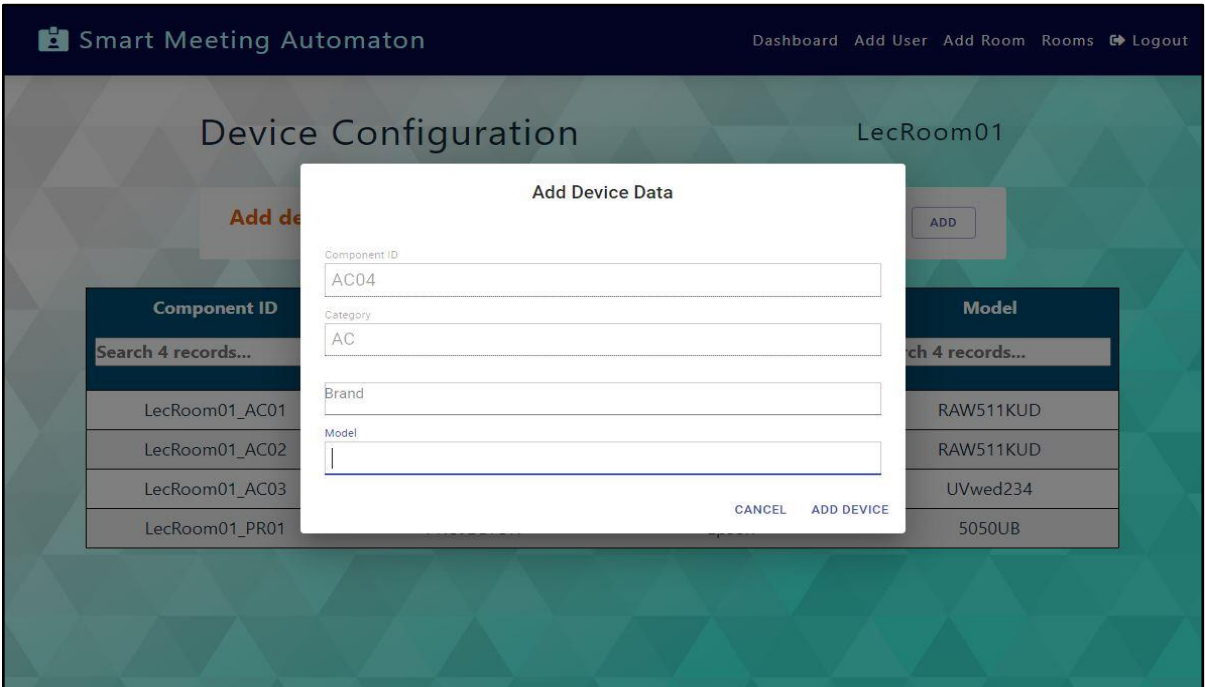
Device Configuration

LecRoom01

Add device: Air Conditioner

Component ID	Category	Brand	Model
<input type="text" value="Search 4 records..."/>	<input type="text" value="Search 4 records..."/>	<input type="text" value="Search 4 records..."/>	<input type="text" value="Search 4 records..."/>
LecRoom01_AC01	AC	Hitachi	RAW511KUD
LecRoom01_AC02	AC	Hitachi	RAW511KUD
LecRoom01_AC03	AC	Panasonic	UVwed234
LecRoom01_PR01	PROJECTOR	Epson	5050UB

Depending on the device, air conditioner or projector, administrator can add devices.



Smart Meeting Automaton

Dashboard Add User Add Room Rooms Logout

Device Configuration

LecRoom01

Add device:

Component ID

LecRoom01_AC01

LecRoom01_AC02

LecRoom01_AC03

LecRoom01_PR01

Category

AC

Brand

Model

RAW511KUD

RAW511KUD

UVwed234

5050UB

According to the selected device, component id is generated. Administrator has to provide the brand and model of the air conditioner or projector to proceed adding each device relevant to a particular meeting room.

3. Registering new coordinator users

The screenshot shows the 'Add User' form in the Smart Meeting Automaton application. The form is set against a teal geometric background. It includes input fields for Username, Name, Email, and Onetimeid. A green 'Generate' button is positioned below the Onetimeid field. A large blue 'Add User' button is at the bottom of the form. The top navigation bar contains links for Dashboard, Add User, Add Room, Rooms, and Logout.

Administrator can add a user with username, name and email. "Onetimeid" can be generated by the system which is given to the user privately at the time of adding that user.

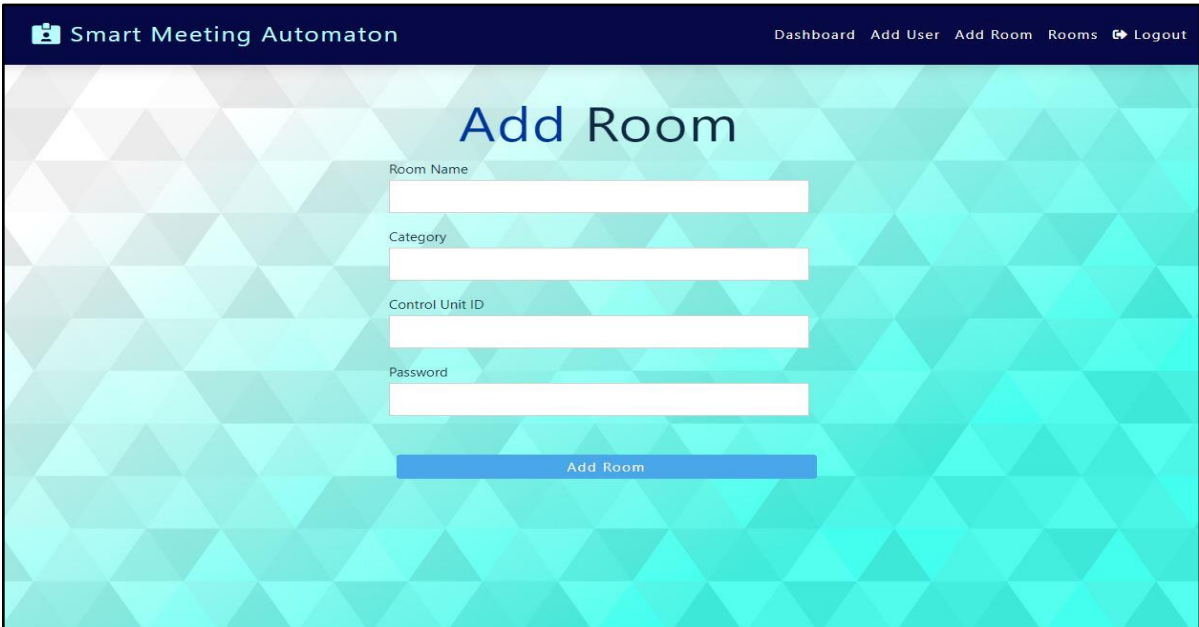
4. View status of meeting rooms

The screenshot shows the 'Room Status' table in the Smart Meeting Automaton application. The table has five columns: Room name, Status, Duration, MeetingName, and Meeting Owner. The data is as follows:

Room name	Status	Duration	MeetingName	Meeting Owner
LecRoom03	FREE			
LecRoom01	IN MEETING	17:30-18:30	co228	LecID01
LecRoom02	IN MEETING	18:10-19:00	Co224	LecID01

Administrator can view meeting rooms that are reserved and meeting rooms that are available for reservations.

5. Adding new meeting rooms with control units to the system



The screenshot shows the 'Add Room' page of the 'Smart Meeting Automaton' application. The page has a dark blue header with the application name on the left and navigation links (Dashboard, Add User, Add Room, Rooms, Logout) on the right. The main content area has a teal and white geometric background. The title 'Add Room' is centered at the top. Below it, there are four input fields labeled 'Room Name', 'Category', 'Control Unit ID', and 'Password'. At the bottom, there is a blue button labeled 'Add Room'.

Smart Meeting Automaton

Dashboard Add User Add Room Rooms Logout

Add Room

Room Name

Category

Control Unit ID

Password

Add Room

Administrator can add new meeting rooms where control units are newly installed. Room name, category and unique control unit id along with a password are required to add a new meeting room.

Tasks for Coordinator User

1. View status of meeting rooms
2. View profile
3. Reserve meeting rooms

1. View status of meeting rooms

Smart Meeting Automaton

Meetings ADD Meetings Profile Logout

My Meetings

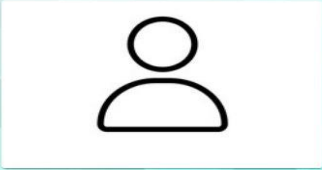
Subject	Start Time	End Time	Date	Room Name	Cancellation
co324	13:00	14:00	2021-03-08	LecRoom02	Cancel
Co224	10:00	13:00	2021-03-10	LecRoom01	Cancel

Coordinator user can view all his scheduled meetings. He has permission to cancel his meetings that have been scheduled previously.

2. View user profile

Smart Meeting Automaton

Meetings ADD Meetings Profile Logout



USERID :
LecID02

NAME :
Amasith K.T.D

EMAIL :
amasith@gmail.com

PHONE :
9776229720

3. Meeting Room Reservation

Smart Meeting Automaton

Meetings ADD Meetings Profile Logout

Add Meeting

Date : 05/31/2021 Start Time : 06:45 PM End Time : 07:45 PM Search

LecRoom01 RESERVE

LecRoom02 RESERVE

LecRoom03 RESERVE

User can search for meeting rooms which are available for reservations by giving date that a meeting should be scheduled and a desired start time, end time as convenient for the user.

Smart Meeting Automaton

Meetings ADD Meetings Profile Logout

Add Meeting

Date : 05/28/2021 Start Time : 03:49 PM Search

LecRoom01 RESERVE

LecRoom02 RESERVE

LecRoom03 RESERVE

Room No. RESERVE

Add Meeting

Duration : T 13:49 to 15:49

Date : D 2021-05-28

Room : R LecRoom02

Owner : U LecID02

Subject

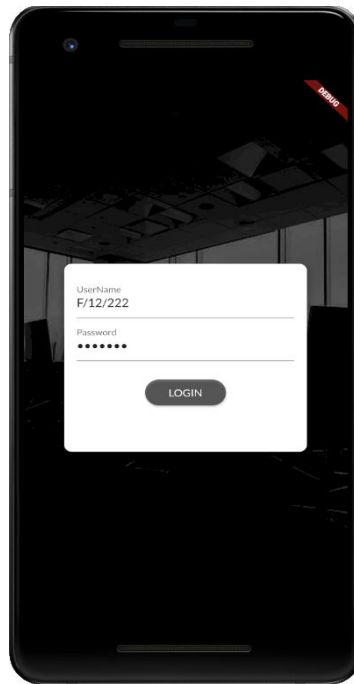
CANCEL ADD MEETING

After choosing a meeting room, the meeting can be confirmed by giving a subject name.

Mobile Application

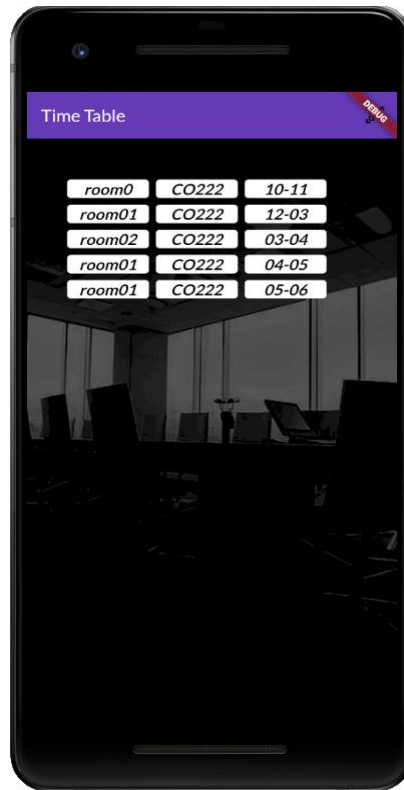
Mobile application is used to connect to the control units in each room by scanning the QR code corresponding to meeting room. So, meeting owners can control the devices within meeting room using mobile application.

- **Login page**



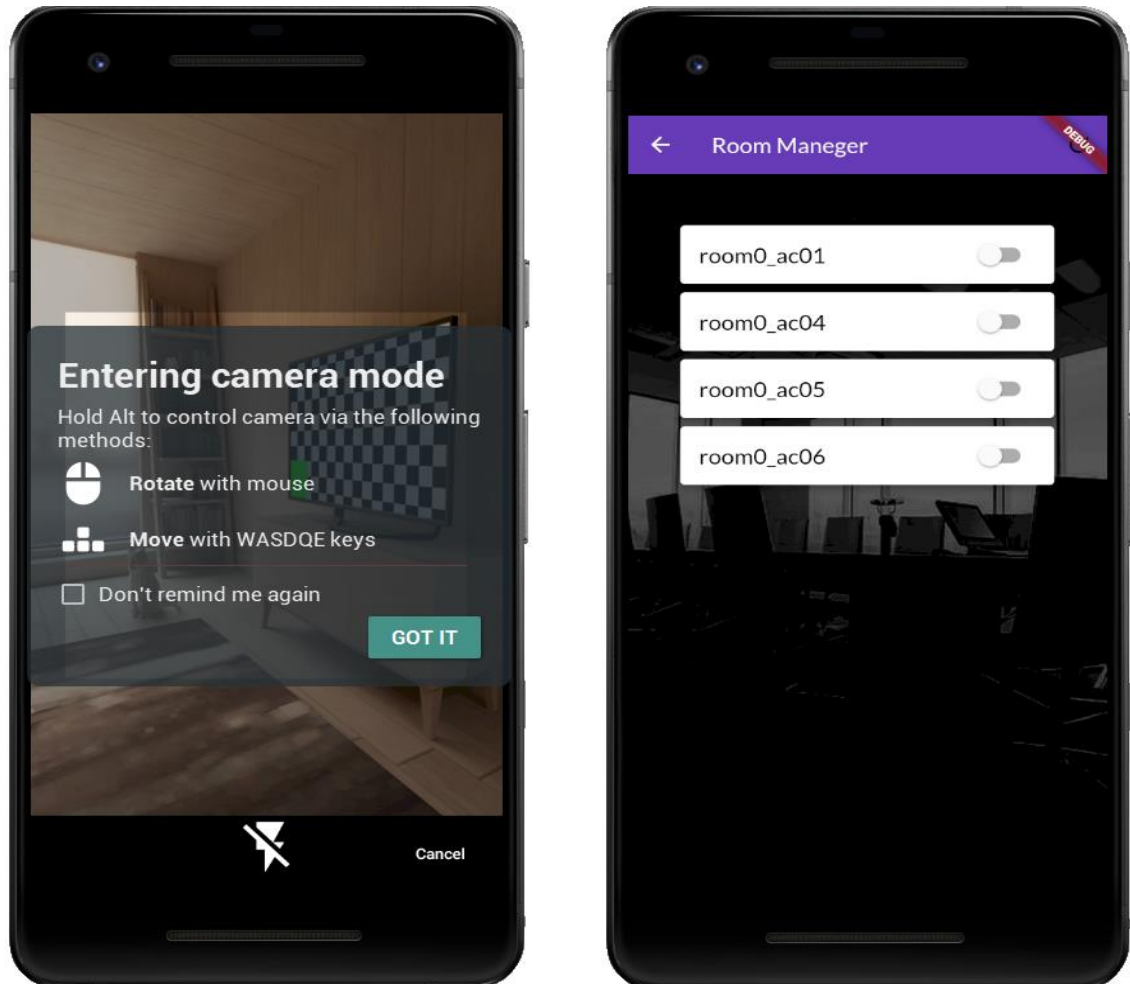
Meeting owner can log into the mobile app using his/her login credentials for the web application.

- **Dashboard**



User can view all his meeting schedules in the dashboard.

- **Controlling air conditioners and projectors**



By scanning the QR code relevant to the control unit/ meeting room, user can access to the controlling panel where air conditioners and projectors can be turned on/off.