

# Program 1: Library-room booking app

Due: September 23, 2016

You are tasked with creating a library room booking web application.

Points applicable throughout the booking app:

- Bookings can be made for 2 hour slots.
- A booking gets released automatically when the booking period is over or manually earlier.
- Bookings can be made up to a week in advance. The schedule of a room should be visible to all the users of the system.

There will be two types of users in the system:

- Admin
- Library member

## Admins

The system should have a preconfigured Admin, which cannot be deleted or modified.

Any admin user will have the following attributes: email (unique for each admin), name and password.

All admins can perform the following tasks:

- Log in with an email and password
- Edit her/his profile details
- Manage admins
  - Create new admins
  - View the list of all the admins and their profile details (except password)
  - Delete admins (except herself/himself and the preconfigured Admin)
- Manage rooms
  - Add a room to the system. A room will have the following attributes: Room Number (unique for each room), building, size, status
    - Possible values for the status attribute:
      - Booked - when a library member books the room or an admin books the room on behalf of a library member

- Available - otherwise
- Possible values for size:
  - Small - 4 chairs
  - Medium - 6 chairs
  - Large - 12 chairs
- Possible values for building:
  - D.H.Hill
  - James.B.Hunt
- View the list of all the rooms. View the schedule for the rooms
- View the details of a room. Also, show the library member who has the room if its status is “booked”.
- Edit the details of a room
  - Admin can also change the status of a room i.e., she/he can book or release a room on behalf of a library member.
    - Even if an admin book or releases a room on behalf of a library member, the information captured in your database should be same as if the room was booked by the library member itself.
- View the booking history of a room
- Delete a room from the system
- Manage Library Members
  - View the list of all the library members and their profile details (except password)
  - View the reservation history of a library member (i.e., a history of the reservations that the user made and did not cancel before the reservation started).
  - Delete a library member

## Library Members

A library member will have the following attributes: email (unique for each member), name and password.

Anyone can sign up as a library member using their email, name and password. After signup, she/he can do the following tasks:

- Log in with email and password
- Edit her/his profile details
- Search rooms using room number, size, building or status.

- search results should be a list of rooms matching the search criteria
- View the details of a room
- Book a room if its status is “Available”
- Release booked room
- View own booking history

## Miscellaneous

### Testing

- Thoroughly test one Model and one Controller. Feel free to use any testing framework.

### Deployment

Please ensure that your deployment is always accessible. You can use the following

- Heroku or any similar PaaS (OpenShift etc) with free plans
- Amazon AWS

### Bonus (Extra Credit)

You can do any or all of the below for extra credit (each item would be an extra credit item).

- If a library member has successfully booked a room, the system can send a notification message to other library members in his/her team with the details of the reservation (library member can add other members when reserve a room).
- A library member can reserve only one room at a particular date and time. Only after his/her reservation is released, he/she can proceed to reserve another room. But an admin can allow a library member to reserve multiple rooms at one time.

## Submission

Your submission in Expertiza should consist of the following-

- A link to your deployed application
- A link to your repository (**use github.com to host your repository**)
  - Credentials for the preconfigured admin and any other information that reviewers would find useful should be in the README.md file in this repository

- Some information that reviewers may find useful are:
  - how to test various features (e.g., how to access certain pages, what details to enter in the form etc.)
  - use cases for some of the edge case scenarios (e.g., what will happen if admin tries to delete a user who currently has a room checked out.).