

Automated Meeting Room Booking System

Project Scope

The system automates the procedure of booking a meeting room in a company. Employees can search and book a meeting room based on their requirements.

Description

The system consists of three types of Users (Employees)

1. Admin

- a. Creates and configures meeting rooms

2. Managers

- a. Search and books a room for a meeting

3. Members

- a. Part of a meeting

The system stores the data in a database. The data description is as defined below.

1. Meeting Room

- a. Unique Name
- b. Seating Capacity
- c. Ratings (based on feedbacks)
- d. Amenities Available
 - i. Projector
 - ii. WiFi Connection
 - iii. Conference call facility
 - iv. Whiteboard
 - v. Water dispenser
 - vi. TV
 - vii. Coffee machine
- e. Per hour cost (in credits)



2. Users

- a. Unique ID
- b. Name
- c. Email
- d. Phone
- e. Credits
- f. Role (Admin/Manager/Member)

3. Booking Information (Schedules)

- a. Unique ID
- b. Meeting Room
- c. Date
- d. Start time
- e. End time
- f. Booked By(User ID)

4. Meeting

- a. Unique ID
- b. Title
- c. Organized By(User ID)
- d. Meeting Date
- e. Start time

f. End time

- g. Type (of Meeting)
 - i. Classroom Training
 - ii. Online training
 - iii. Conference call
 - iv. Business

- h. List of members attending the meeting
- i. Information of Meeting room booking

↳ Additional Information

- o The meeting room has a per hour cost(in credits) based on the amenities.

| | |
|----------------------------|------------|
| Seating capacity <= 5 | 0 credits |
| Seating capacity > 5 <= 10 | 10 credits |
| Seating capacity > 10 | 20 credits |
| Projector | 5 Credits |
| WiFi Connection | 10 Credits |
| Conference call facility | 15 Credits |
| Whiteboard | 5 Credits |
| Water dispenser | 5 Credits |
| TV | 10 Credits |
| Coffee machine | 10 Credits |

The per hour cost is the sum of credits based on the amenities

- Users of type managers have 2000 credits points, when booking the room, they will have to pay the per hour cost from these credits.
- The manager credits are renewed back to 2000 points on every Monday morning.
- Mandatory Amenities required based on meeting type

| | |
|--------------------|--------------------------|
| Classroom Training | Whiteboard and Projector |
| Online training | WiFi and Projector |
| Conference call | Conference call facility |
| Business | Projector |

Screens & Use-cases

← Home Page

This is the home page.

The screen should display

1. Information about the application
2. List of meeting rooms
 - a. Each item should display the Name, Seating capacity, total number of meeting conducted, Ratings
3. Link to Import users
4. Link to Login

← Import users

This screen should provide a link/button when clicked request should go to the server and it should load the data from an internal file in the server (c:\somefile\data.xml)

The XML file will be an array of users. Each user object will have the data points

1. Name
2. Email
3. Phone
4. Role (Admin/Manager/Member)

Business Rules

1. All fields are mandatory
2. Email and Phone should be in the correct format, use regular expressions to validate the same.
3. If the role is manager, credits should be inserted as 2000, other users will have 0 credits.
4. Generate a unique ID

Login

The screen allows a user to login. Fields to capture

1. User ID

2. Email

After logging in the user is delegated to the

- Admin Page for admins
- Manager Page for managers
- Member page for members

Business Rules

1. All fields are mandatory
2. UserID and Email should valid

Admin

The screen allows admins to create and manage meeting rooms

The page displays



1. Admin information, Name, Email, last logged-in etc
2. A list of meeting rooms. The list item should be selectable and on selecting should navigate to the Edit Room page.
3. A link to Create Room.

↳ Create Room

The screen allows to create a meeting room. Fields to capture are

1. Name
2. Seating Capacity
3. Amenities Available (Checkboxes to select)
 - a. Projector
 - b. WiFi Connection
 - c. Conference call facility
 - d. Whiteboard
 - e. Water dispenser
 - f. TV
 - g. Coffee machine
4. Save and Cancel buttons

Business Rules

1. Name and Seating capacity is mandatory
2. Name should be unique
3. At least 2 amenities should be added
4. The per hours charges should be calculated
5. Unique ID should be generated

↳ Edit Room

The screen allows to edit a meeting room. Appropriate UI should be provided.

- Same Business rules for Create Room apply

↳ Organize Meeting

The screen allows a manager to organize a meeting and book a meeting room. Fields to capture

1. Title
2. Meeting Date
3. Start time
4. Duration
5. Meeting type
6. A UI to search for and add members
7. A UI to select a meeting room
8. Save and Cancel option

Business Rules

1. All fields are mandatory
2. Meeting date and time should be a later date time,
3. Meeting room should be available on the start datetime and the duration of the meeting.
4. Seating capacity of the meeting room should not be less than the total participants of the meeting

5. The project manager should have enough credits to books the meeting. The credits should be deducted if the meeting room is booked.
6. Validate amenities based on meeting type
7. Generate a Unique ID

Test Cases

★ Organize Meeting

- Meeting date and time should be a later date time,
- Meeting room should be available on the start datetime and the duration of the meeting.
- Seating capacity of the meeting room should not be less than the total participants of the meeting
- The project manager should have enough credits to books the meeting. The credits should be deducted if the meeting room is booked.

★ Create Room

- Name and Seating capacity is mandatory

- Name should be unique
- At least 2 amenities should be added
- The per hours charges should be calculated
- Unique ID should be generated

Application Design

1. Use an RDBMS server to store all business data. Data should be normalized. Decide the database design (tables and columns) based on the application and business requirement.
2. The application should be object oriented and easily extensible to add new features like new roles and other use cases
3. The web application should be based on MVC design pattern

4. Business rules should be implemented in a separate layer.
5. Implement a proper data-access layer.
6. Use proper exception handling.
7. Provide a logout option
8. Any one page should be designed as responsive

Functional Requirement

1. Security
 - a. Unauthorized users should not have to access the system
2. Logging
 - a. All unhandled exceptions should be logged.
3. Transactions

Guidelines



1. Use layered architecture with loose coupling.
2. Validate all user inputs with proper error handling.
3. The UI should use a layout with a header, footer and sidebar (with navigation links), which should be maintained on all pages.
4. Understand UI designing before coding
5. Optional: Explore the various CSS frameworks for designing the UI, The UI should look elegant.
6. Optional: Explore using frameworks for loggings. Application design should allow switching between frameworks

End of document ■