University Hall Booking System

1. Introduction

Streamline your university's hall booking process with the University Hall Booking System, a web application designed for ease of use. Students, staff, and faculty can search, book, and manage reservations for classrooms, meeting rooms, event spaces, and more – all through a user-friendly interface.

2. Features

- **Interactive Calendar: View real-time availability of halls on a user-friendly calendar interface. Color coding or visual indicators can show booked and available times.**
- **Search Filters: Filter halls by:**
  - **Capacity (e.g., number of seats)**
  - **Location (building, floor)**
  - **Amenities (projector, whiteboards, audio/video equipment, accessibility features)**
  - **Keywords (e.g., "computer lab," "large presentation space")**
- **Recurring Bookings: Schedule regular meetings or classes in the same hall on a recurring basis (e.g., weekly, bi-weekly).**
- **Integration with University ID: Allow secure login and booking using existing university ID systems (e.g., LDAP, SSO).**
- **Automatic Notifications:**
  - **Send email or app notifications about upcoming bookings and any changes (e.g., cancellations, room changes).**
  - **Option for users to receive reminders before booked events.**
- **Approval Workflow:**

- - Implement a customizable approval process for bookings in designated halls.
    - Approvers can view booking details and approve/reject requests With explanation(optional) within the system.
    - Notifications are sent to users about the approval status of their bookings.
  - **Resource Management:**
    - Allow users to book additional resources alongside halls (e.g., projectors, microphones, furniture).
    - Track availability of these resources and prevent double booking.
  - **User Roles and Permissions:**
    - Implement different user roles with varying levels of access (e.g., student, staff, faculty, administrator).
    - Restrict functionalities based on user roles (e.g., only administrators can edit hall information).
  - **Reporting(Data-Driven Decisions):**
    - Generate reports on hall usage patterns, booking trends, and resource utilization.
    - Useful for identifying underutilized spaces or high-demand times.

3. System Usage

3.1 Login

Users will access the system through a web browser using their university ID and password.

3.2 Search for Halls

- Users can navigate a calendar view to see hall availability for specific dates and times.

- **Utilize search filters to narrow down options based on their needs.**
- **Detailed information about each hall, including capacity, amenities, and photos, can be displayed upon selection.**

3.3 Booking a Hall

- **Once a suitable hall is identified, users can initiate a booking request.**
- **The booking form will require details like:**
  - **Date and time**
  - **Duration of booking**
  - **Expected number of attendees**
  - **Purpose of booking**
  - **(Optional) Additional resource requirements**

3.4 Approval Workflow (if applicable)

- **For designated halls, the booking request will be routed to the designated approver(s).**
- **Approvers can view booking details and approve or reject the request within the system.**
- **Users will receive notifications regarding the approval status of their bookings.**

3.5 Managing Bookings

- **Users can view and manage their upcoming bookings within the system.**
- **This allows them to:**
  - **Edit booking details (subject to approval if applicable)**
  - **Cancel bookings**
  - **Extend booking duration (subject to availability)**

4. Administration

4.1 Hall Management

- **Administrators can add, edit, and delete hall information.**
- **This includes details like:**
  - **Hall name and location**
  - **Capacity**
  - **Amenities offered**
  - **Pictures**
  - **Accessibility features**

4.2 User Management

- **Administrators can create and manage user accounts.**
- **Assign user roles and permissions.**

4.3 Approval Workflow Configuration

- **Define which halls require an approval process.**
- **Specify who needs to approve bookings for those halls (e.g., by department, role).**

4.4 Reporting

- **Administrators can access reports on hall usage patterns, booking trends, and resource utilization.**

5. Technical Specifications

The University Hall Booking System will be built using the Node.js MVC pattern with the following technical stack:

- **Frontend: Utilize a templating engine like EJS for server-side rendering of HTML pages, offering a clean separation between presentation logic and application logic.**

- **Backend:**
  - **Express.js: This popular framework provides a foundation for building RESTful APIs and managing server-side logic.**
  - **SQLite: This lightweight relational database is suitable for storing user data, hall information, bookings, and resource management, offering efficient data access.**
  - **JWT (JSON Web Tokens): A secure authentication system will be implemented using JWT for user login and authorization. User credentials will be securely stored using hashed passwords, and access control will be enforced based on user roles defined within the system.**

This combination of technologies provides a secure, scalable, and maintainable foundation for the University Hall Booking System.

- **System should be:**
  - **Secure and compliant with relevant data privacy regulations.**
  - **Scalable to accommodate a large number of users and bookings.**
  - **Accessible and user-friendly for users with varying technical skills.**
  - **Responsive and work seamlessly across different devices (desktops, laptops, tablets, smartphones)**

6. Conclusion

The University Hall Booking System offers a comprehensive solution to streamline the hall booking process within universities. It promotes efficient space utilization, simplifies booking management, and enhances communication between users and administrators. This user-friendly web

application empowers students, staff, and faculty to easily find and reserve the

space they need for their academic and professional endeavors.

EL MEHDI FAIDA, IT Developer.
FMPM Service informatique
Tel: +212 667 650 868
Email: Contact@faidaily.com