**BANNARI AMMAN INSTITUTE OF TECHNOLOGY**
An Autonomous Institution Affiliated to Anna University - Chennai, Accredited by NAAC with A+ Grade
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**Seat No:** 23

**Project ID:** 12

**Project title:** VENUE BOOKING

## TECHNICAL COMPONENTS

| Component | Tech Stack |
|---|---|
| Backend | Express.js, Node.js |
| Frontend | Vue |
| Database | MongoDB |
| API | RESTful API |

## IMPLEMENTATION TIMELINE

| Phase | Deadline | Status | Notes |
|---|---|---|---|
| Stage 1 | 03/06/2024 | Approved | Planning and Requirement gathering |
| Stage 2 | | In progress | Design and Prototyping |
| Stage 3 | | Not started | DB Designing |
| Stage 4 | | Not started | Backend Implementation |
| Stage 5 | | Not started | Testing & Implementation |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to provide a detailed description of the requirements for the Venue Booking Application.

## 1.2 Scope

The Venue Booking Application is intended to facilitate the booking of venues such as classrooms, seminar halls, auditoriums, and labs in the college by faculty and admin users.

## 1.3 Definitions, Acronyms, and Abbreviations

- SRS: Software Requirements Specification
- UI: User Interface

# 2. Overall Description

## 2.1 Product Perspective

The Venue Booking Application will be a standalone web application that interfaces with a database to manage bookings.

## 2.2 User Classes and Characteristics

- Faculty: Users who are faculty members at the college.
- Admin: Users who manage and oversee the booking requests.

## 2.3 Operating Environment

The application will be accessed through a web browser on desktop and mobile devices.

## 2.4 Design and Implementation Constraints

The application will be developed using the MEVN stack (MongoDB, Express.js, Vue.js, Node.js).

# 3. Specific Requirements

## 3.1 Functional Requirements

- User Registration: Faculty users should be able to register for an account.
- User Login: Registered users (faculty) should be able to log in to the application.
- Resource Booking: Faculty users should be able to view available venues and book them for specific time slots.

- Admin Login: Admin users should be able to log in to the application.
- Admin Panel: Admin users should be able to approve or reject booking requests.
- Notifications: Users should receive notifications via email or text message once their booking is approved or rejected.
- Time Slot Selection: Users should be able to select time slots for booking, with options for both bulk time booking and minimum time booking.
- Availability Display: Available time slots should be displayed in a user-friendly format.

## 3.2 Non-functional Requirements

- Performance: The application should be able to handle multiple concurrent users without significant slowdowns.
- Security: User data should be stored securely and protected against unauthorized access.
- Usability: The user interface should be intuitive and easy to use.
- Reliability: The application should be reliable and available whenever users need to access it.

## 3.3 User Interfaces

- Login Page: Allows users (faculty and admin) to log in to their accounts.
- Venue Booking Page: Allows faculty users to view available venues and book them for specific time slots.
- Admin Panel: Allows admin users to approve or reject booking requests.

## 3.4 System Interfaces

- Database: The application will interface with a MongoDB database to store user and booking information.

# 4. Application Features

## 4.1 User-side Features

- Sort: Sort and filter available resources.
- Bulk Booking: Allow users to book a venue for a duration of up to 30 days, selecting a specific start date and end date for the booking.
- Multi-Venue Booking: Enable users to book multiple venues simultaneously, selecting different venues for different time slots.
- Editing and Modification: Provide users with the ability to edit or modify their booking details, such as changing the date, time, or venue.
- Booking Approval Status: Display the status of the booking request, indicating whether it is pending, approved, or rejected. Users can track the progress of their booking requests.

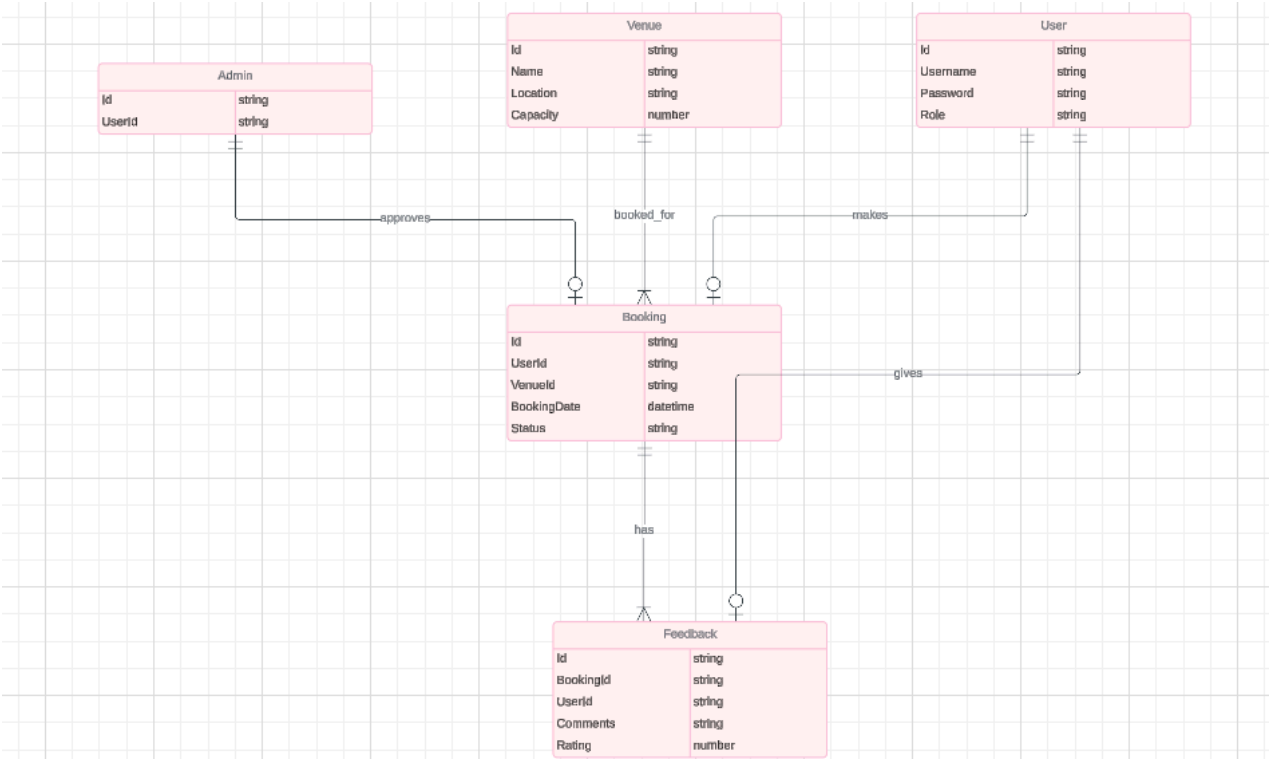
- Notification on Approval: Send a notification to the user when their booking request is approved by the admin, confirming the successful reservation.
- Booking Details and Reason: Allow users to view their booked venues, along with the reason for the booking.

## 4.2 Admin-Side Features

- Bulk Booking Management: Enable admins to handle bulk booking requests, reviewing and approving them for the requested duration and time slots.
- Multi-Venue Booking Management: Provide admins with the ability to manage multiple venue bookings made by a user, ensuring there are no conflicts or scheduling issues.
- Booking Modification Review: Allow admins to review and approve or reject modification requests from users who want to edit or modify their booked venues.
- Notification on Booking Approval: Notify the user who made the booking when their request is approved, confirming the successful reservation.
- Venue Availability Management: After approval, automatically mark the booked venues as unavailable for other users during the booked time slots, preventing double bookings.
- Booking Details and Reason Review: Admins can view the booking details and the reason provided by the user, ensuring the booking aligns with college policies and regulations.

# 5. Flow Chart


# ER DIAGRAM :




# 6. Technology Stack

## 6.1 Backend

- Node.js: Used for server-side logic and handling HTTP requests.
- Express.js: Framework for building the backend API and handling routing.

## 6.2 Frontend

- Vue.js: Used for building the user interface, providing a dynamic and responsive experience for users.

## 6.3 Database

- MongoDB: NoSQL database used for storing resource information, booking history, and user data.

## 6.4 Additional Libraries and Components

- Vue Router: For client-side routing in the Vue.js application, enabling navigation between different views.
- Vuetify: Vue component library for building a modern and visually appealing user interface.
- Full Calendar: JavaScript calendar library for displaying resource availability and booking dates.

# 7. Role of Each Component

## 7.1 Node.js and Express.js

- Backend Logic: Handle user authentication, booking requests, and interactions with the database.
- API Development: Create RESTful APIs for communication between the frontend and backend.

## 7.2 Vue.js

- User Interface: Build a dynamic and interactive user interface for booking resources and managing bookings.
- State Management: Manage application state and data flow using Vue's state management capabilities.

## 7.3 MongoDB

- Database Storage: Store resource information, booking history, and user data in a flexible and scalable manner.

## 7.4 Vue Router

- Client-Side Routing: Enable navigation between different views in the application without a page reload.

## 7.5 Vuetify

- UI Components: Use pre-built components for designing a modern and visually appealing user interface.

## 7.6 Full Calendar

- Resource Availability: Display resource availability and booking dates in a calendar format for easy visualization.