

# DBMS Project Architecture

Project Moment

By: Team CSE Moment

Classroom allocation management portal for Mahindra University

Ananta Srikar P. - 19XJ1A0507

Sanjana Alluri - 19XJ1A0567

Shagufta Anjum - 19XJ1A0568

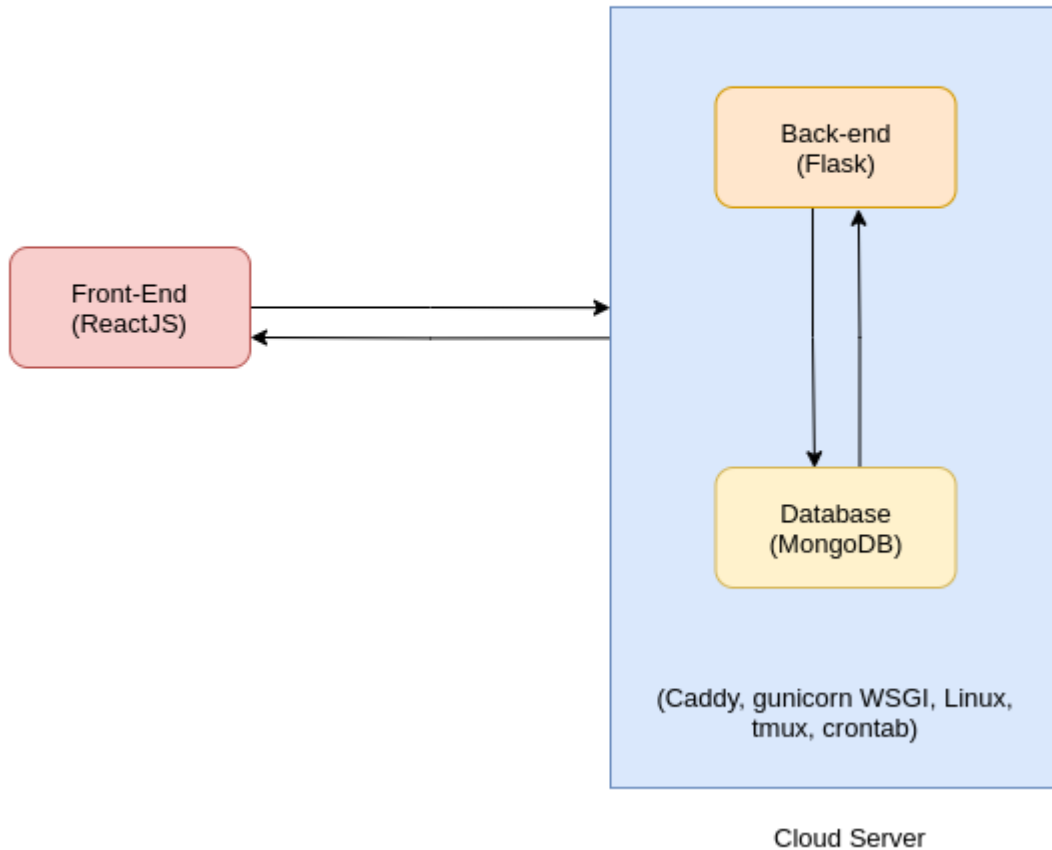
## Overview

At Mahindra University, classrooms are allocated manually - either at the beginning of the semester for day-to-day classes, or when students request Mr. Sudhakar for access. This process involves a lot of human intervention, making it quite tedious and inefficient.

We want to attempt to design an optimal solution to this problem of classroom allocation at MU. Our goal is to help the students, professors, clubs and the management to conveniently manage the booking of rooms for various events and activities.

We want to create a portal where users can easily filter through available classrooms on the required date and time based on the capacity and location of the rooms, and place a request. The user would be able to check the allocation status and cancel the request as well. The admin would be responsible for approving the requests placed on the portal.

## Application architecture



# Frontend

## Features

- Framework - ReactJS
- Hosting platform - Netlify
- CI/CD configuration

## Pages

Home page

- User login
- Admin login

## **User pages**

1. Login
2. User home page
3. View Allocations (Top level view of MU classrooms layout)
4. Room Booking
  - Filter available classrooms based on date, time, location and capacity
  - View available classrooms
  - Request access to a particular classroom and provide details regarding intended use
5. My requests
  - View all room requests placed
  - Check allotment status
  - Cancel a booking

## **Admin pages**

1. Login
2. User account handling
  - Add account
  - Edit account
  - Delete account
3. View Allocation
4. View Requests
  - Approve a request
  - Reject a request
  - Notify the user
  - Notify the campus security

# Backend

## Features

- Framework: Flask
- DB Connection: MongoDB-python driver
- Linux server
- Caddy reverse proxy
- Crontab for uptime

# Database

DBMS - MongoDB

## Tables

### 1. Users Table

- ID
- Password
- Role (students, faculty, other staff)

(Should we split this into multiple tables?)

### 2. Admin Table

- ID
- Password

### 3. Classroom table

- Classroom ID
- Location (floor)
- Capacity (no. of people it can host)
- Availability (is the room usable)

### 4. Schedule table

- Classroom ID
- User ID (user who booked the room)
- Start Time
- End Time
- Purpose
- Authorized by (admin ID of the authorizer)

### 5. Request Table

- Request ID
- User ID (user who requested the room)
- Classroom ID (room requested)
- Start Time
- End Time
- Purpose