

FULL STACK WORK FLOW

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Project ID	13
Module Name	Vehicle Management System

TECHNICAL COMPONENTS:

COMPONENT	SPRING BOOT STACK (JAVA)
Backend	Java with Spring Boot
Frontend	angular/React.js
Database	PostgreSQL/MySQL
API	Open API

1. ABOUT PROJECT:

1.1. Purpose:

The purpose of this document is to present a detailed description of the Vehicle management system(Vehicle booking portal for faculty. It will explain the purpose and features of the system ie how the portal works based on the requirements gathered.

1.2. Scope of Project:

- This software system will serve as a portal for the Campus (BIT), enabling faculty can reserve vehicles for college activities(Industrial visits,guest pickup etc) and receive their result (Approved or rejected).
- Administrators (Transport team) have the ability to accept or reject the vehicles according to the necessity. Once a vehicle is approved, faculty can schedule to their work.

1. System Overview

1.1. Users:

Faculty: They can log in to the system to make reservations for specific dates and times.they can also receive notifications about the status of their reservations including approvals,cancellations.They can check the status through notifications sent by the admin.

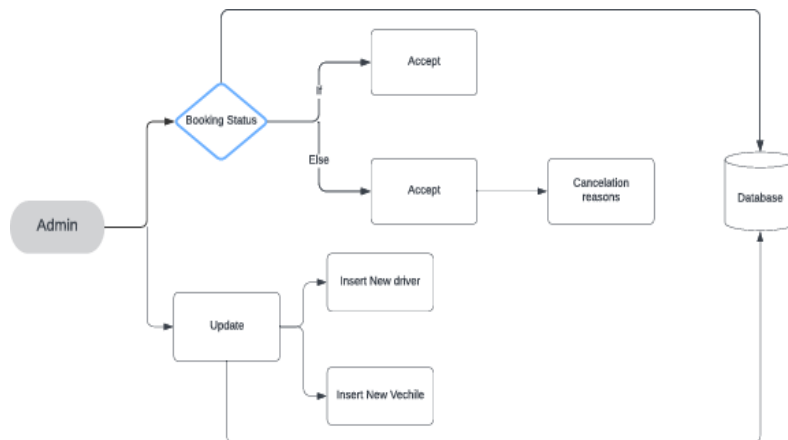
Admins: Admins can approve or deny vehicle reservation requests submitted by faculty.They can update the driver and vehicle details.

REGISTRATION FORM ENTITY

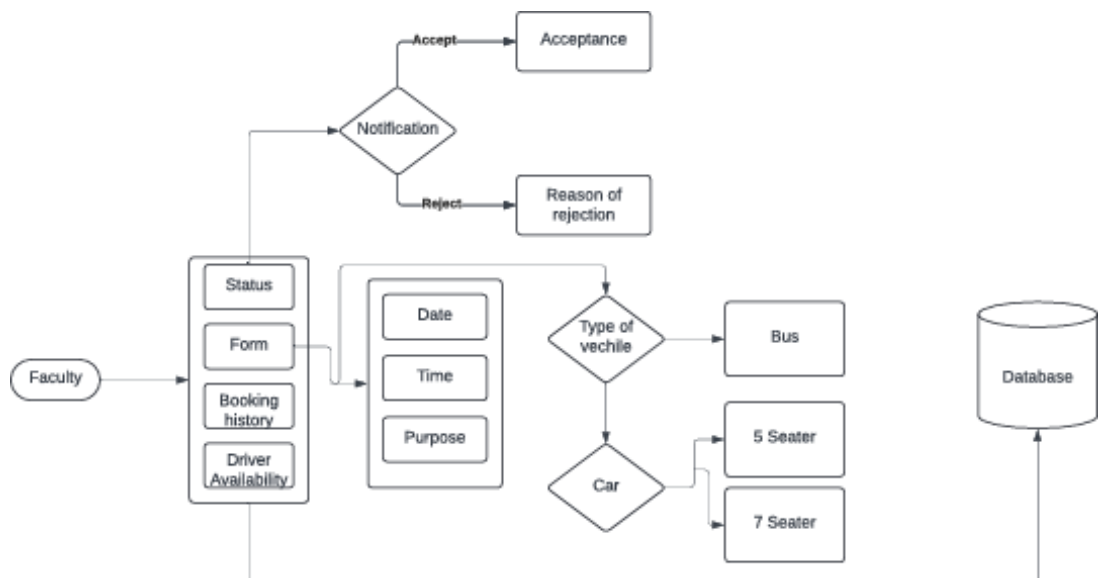
Date	DATE
Time	INT
Purpose	STRING
Type of vehicle	INT
Number of seats(if needed)	INT

Flow Chart:

Admin interface



User interface



System Requirements Specification:

3.1 Functional Requirements:

3.1.1 Faculty dashboard

Form details

- Faculty can register the bus or car according to their needs. The number of seats needed is also mentioned in the form.

Application form contains

- Type of vehicle
- Date
- Time
- Purpose

If the type of vehicle is car then the faculty has to specify the number of seats.

Driver availability

- The faculty can view the availability of drivers at the time of booking a vehicle.

Application status

- Faculty can receive notifications as the booking status is completed or not.
- When the booking is accepted get notified and when rejected the reason for rejection is mentioned.

Booking History

- Faculty can view the previous booking history along with date and time.
- Filtrations can be made for date and time.

Admin Dashboard:

- Admin can sign up or log in.
- Admin have the access to view the booking status and sends whether the booking is approved or rejected along with the reason.

- Admins have the access to update the new vehicle details and new driver details.

3.2. Non-Functional Requirements:

- **Performance:** The system must respond to user actions within 2 seconds to ensure efficient usability and must handle a concurrent user load of at least 100 users without significant performance degradation.
- **Security:** User data must be encrypted during transmission and storage, and access to sensitive functionalities should be restricted to authorized admin users through secure authentication mechanisms.
- **Usability:** The user interface should be intuitive and user-friendly, with clear and concise error messages provided to guide users in case of input errors or system failures.
- **Reliability:** The system should be available 24/7 with minimal downtime and should have a backup and recovery mechanism in place to prevent data loss in case of system failures or crashes.
- **Scalability:** The system should be designed to accommodate an increasing number of users and data volume over time, and it should be scalable to support additional features and functionalities as per future requirements.