# Railway System Database

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## PROJECT DESCRIPTION

- Railway Management System

We are motivated to create a Railway Systems Database to solve the problems related to managing and organizing information related to railway transportation. Some problems that occur in the current system are, outdated schedules, inefficient use of train routes, long wait times and poor communication between the staff and passengers.

This database aims to provide several features that will make it more efficient for the people taking the railway system. Algorithms will be used by our database system to improve train timetables and routes while also thinking about travel time, distance, and passenger demand. Passenger wait times will be cut down, and railroad operations will run more smoothly. Customers will be able to purchase tickets online, eliminating the need for long waits at railway stations. This will increase the precision and effectiveness of ticketing operations. The communication technologies in our database system will enable staff to interact with passengers more efficiently by giving them real time updates on train times, delays, and other important information. This will result in less frustration from both passengers and staff.

USE CASES

1. **Use Case:** Overbooking- Staff Shortage in Railway Management System

   **Actor:** Railway Ticketing Staff (Caleb), Passengers, Train Conductors

   **Description:** Caleb is a railway ticketing staff member who handles the reservation and booking of train tickets. Due to sometimes being short on staff or other circumstances, there are times when train conductors are not available during their scheduled time, which results in overbooking of the train. This leads to overcrowding and inconvenience for passengers. To improve this situation Caleb will need a system that stores the availability status of train conductors and their schedules.

2. **Use Case:** Train Delay Notification in Railway Management System

   **Actor:** Train Passengers, Train Conductors, Railway Management System

   **Description:** Train passengers often face delays due to many reasons such as weather, technical issues, or other circumstances. To provide better customer service and improve passenger satisfaction, the Railway Management System needs a feature that notifies passengers of train delays in a timely and accurate manner.

3. **Use Case:** Train Schedule Management in Railway Management System

   **Actor:** Train Schedulers, Train Conductors, Railway Management System

   **Description:** The Railway Management System needs a feature that enables schedulers to manage train schedules effectively. The train schedules needs to run correctly in order to ensure that train services are on time and that there are

no problems in train schedules. This feature will help in the overall management of train schedules.

4. **Use Case:** Fares and Ticketing in Railway Management System

   **Actor:** Passengers, Ticketing Agents, Railway Management System

   **Description:** Passengers need to purchase train tickets for wherever they are going, and the Railway Management System needs a feature that enables fare calculation and ticketing. This feature will help in the efficient calculation of fares and enable passengers to purchase tickets easily.

5. **Use Case:** Train Maintenance Scheduling in Railway Management System

   **Actor:** Train maintenance Crew, Railway Management System

   **Description:** Trains need to be maintained on a regular basis to make sure they are safe and efficient for operation. The Railway Management System needs a feature that enables train maintenance crews to schedule and manage train maintenance effectively.