OOMD Lab 2022-23

Railway Reservation System

Problem Statement

A railway reservation system is needed to provide a convenient and efficient way for customers to book and manage their train journeys. It also aims to improve the operational efficiency and revenue generation of the railway department.

Introduction

* Purpose:

To provide a convenient and efficient way for customers to book and manage their train journeys. To improve the operational efficiency and revenue generation of the railway department.

* Scope of this document

The core of the system is to get the online registration form (with details such as name, address etc.,) filled by the applicant whose testament is verified for its genuineness by the Railway Reservation system with respect to the already existing information in the database. It adopts a comprehensive approach to minimize the manual work and schedule resources, time in a cogent manner.

* Overview

The Railway Reservation System provides an online interface to the user where they can fill in their personal details, submit the necessary documents and book tickets.

General Description:

Railway reservation is a complex and tedious process that involves booking tickets, checking seat availability, finding train schedules, and paying fares. The current manual system is prone to errors, delays, and frauds. Customers face many challenges such as long queues, limited payment options, lack of information, and poor customer service. A railway reservation system is needed to provide a convenient and efficient way for customers to book and manage their train journeys. It also aims to improve the operational efficiency and revenue generation of the railway department.

Functional Requirements:

* The system should allow the passengers to register themselves by providing their personal details, such as name, email, address, phone number, etc.
* The system should allow the passengers to check their PNR status by entering their PNR number.
* The system should allow the passengers to cancel their tickets by entering their PNR number and a cancel ticket request.
* The system should allow the railway department to add, edit, and delete the train information, such as train name, train code, train schedule, train route, train fare, etc.

Interface Requirements

* User Interface
  + UI should be simple, intuitive, responsive and consistent
  + Interface should support different languages and devices as needed
  + UI should display availability and location of books in the library
* Hardware Interface:
  + The system should be compatible with multiple operating systems such as Windows, Linux etc
  + The system should be reliable and secure when communicating with hardware devices
  + The system should use QR codes to scan passports, and to facilitate payments
* Software Interface:
  + A working OS
  + Front-end framework like React/Angular/Vue
  + RDBMS like MySQL, PostgreSQL etc
  + Containers and orchestration services like Kubernetes

Performance Requirements

* The number of pages should be minimized for the user’s convenience
* Verifying details should be a very swift process
* There should be a procedure for when there is loss of data due to failure of storage device or similar reason.

Design Constraints

* Working with the constraints set by the government
* Respect industry standards and follow best practices of software development