# ONLINE RAILWAY RESERVATION SYSTEM

## Low level Design (LLD)

# Online Railway Reservation System

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# INTRODUCTION

## Document Purpose

Railway Reservation system is designed to make the ticket booking process easier.

This system is designed to make a hustle free travel

It saves the time and efforts of the user.

Railway reservation system offers various functionalities such as search train by location ,book ticket,view train details and cancel ticket

## Overview

This system is designed for the online reservation of tickets for travel between two destinations.

This system includes quota to manage fare on payment . A maximum of six seats at a time ,for journey between any two stations served by a train

## Intended Audience

This document is intended as a reference for the following roles and stakeholders who are interested in the Railway Reservation System technical architecture.

| ROLE | NATURE OF ARCHITECTURE |
|---|---|
| passenger | To whom the services will be provided to. |
| admin | The person responsible for functioning of the system |



## Problem Statement

The need of this system arises because as is the known fact that India has the largest railway network and to handle it manually is quite a tough job.

By automating it, we will be able to overcome many of its limitations such as we can manage passenger record in database instead of hardcopy and will be able to make it more efficient.

It will save time and efforts of the users and well as the system admin as they don’t need to manually manage the data .

With the help of this system we can manage the users time and efforts and provide smooth functioning of management of large data.

# Requirements

## Hardware Requirements

- Operating Systems- Windows, macOS, Linux, Chrome OS ▪ Windows 8.0, 8.1 and 10, 11 (32-bit and 64-bit)
- Random Access Memory (RAM) - 1 GB RAM minimum; 8 GB RAM recommended.
- 1.6 GHz or faster processor.
- Internet Connection (20MBps or above)

## Software Requirements

- Microsoft Windows XP or later versions
- A standard web browser.
- .Net framework.
- Visual Studio Code above 2014



## Technology Used

Technologies which are going to use in this Application are as follows:

- **Angular** -Angular is an open-source, javascript framework written in typescript.Its primary purpose is to develop single-page applications.It is a component-based framework for building scalable web applications ·

- **Bootstrap -** Bootstrap is a free, open-source front-end development framework for the creation of websites and web apps.

- **C#** - It is an object-oriented programming language provided by Microsoft that runs on .Net Framework. For logical purpose we use C# in our application.

- **ASP .NET MVC** - The MVC (Model-View-Controller) is an application development pattern or design pattern which separates an application into three main components. Model, View, Controller.

- **Asp .Net Web API -** ASP.NET Web API is a framework that helps you to build services by making it easy to reach a wide range of clients including browsers, mobiles, tablets, etc. It is a framework for building HTTP services.

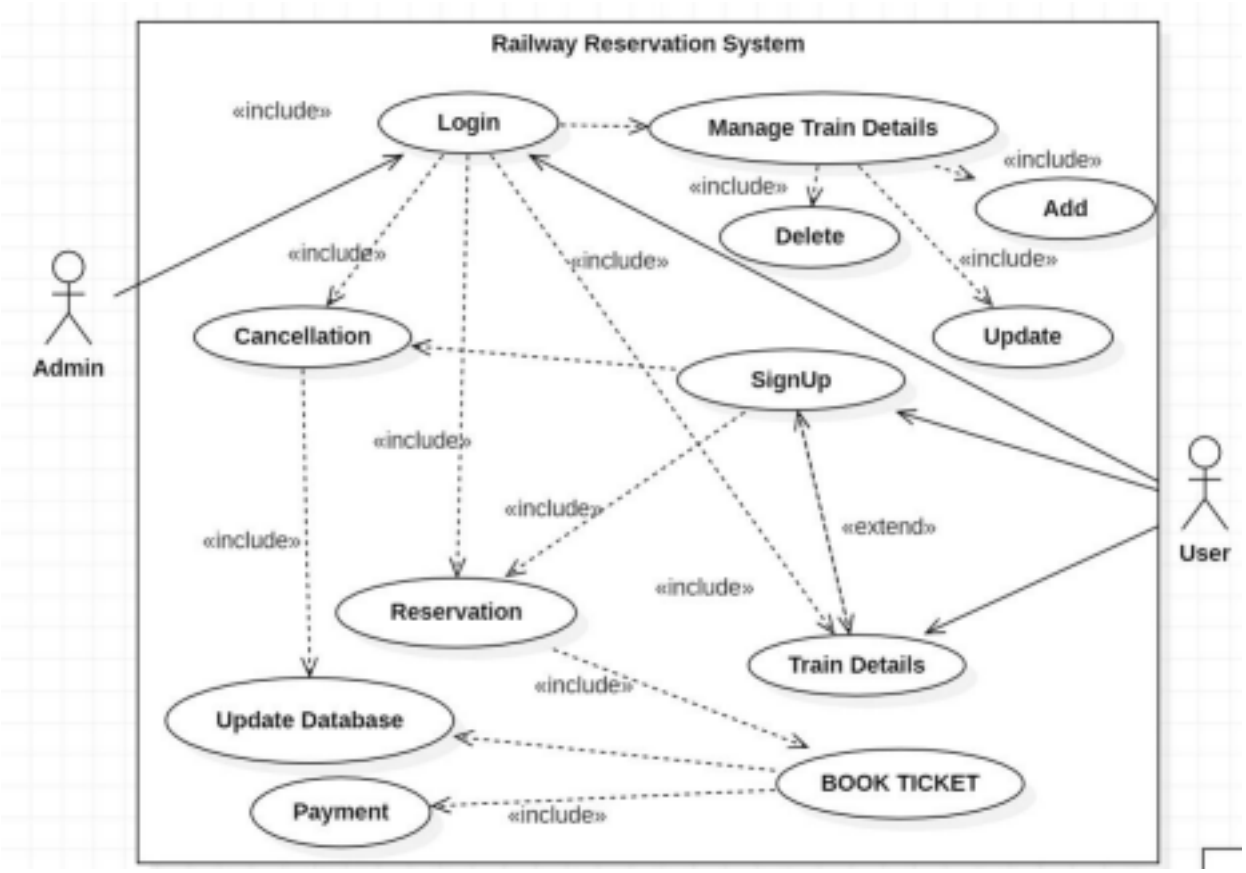
- **Entity Framework -** Entity Framework is an open-source ORM (Object Relational Mapping) Framework for the .NET applications supported by Microsoft. It enables the developers to work with the data using the objects of domain-specific classes. Entity Framework can generate the necessary database commands for reading or writing the data in the database and execute them for us.



- **SQL -** SQL (Structured Query Language) is used to perform operations on the records stored in the database, such as updating records, inserting records, deleting records, creating, and modifying database tables, views, etc.

# UML Diagram

## Use Case Diagram



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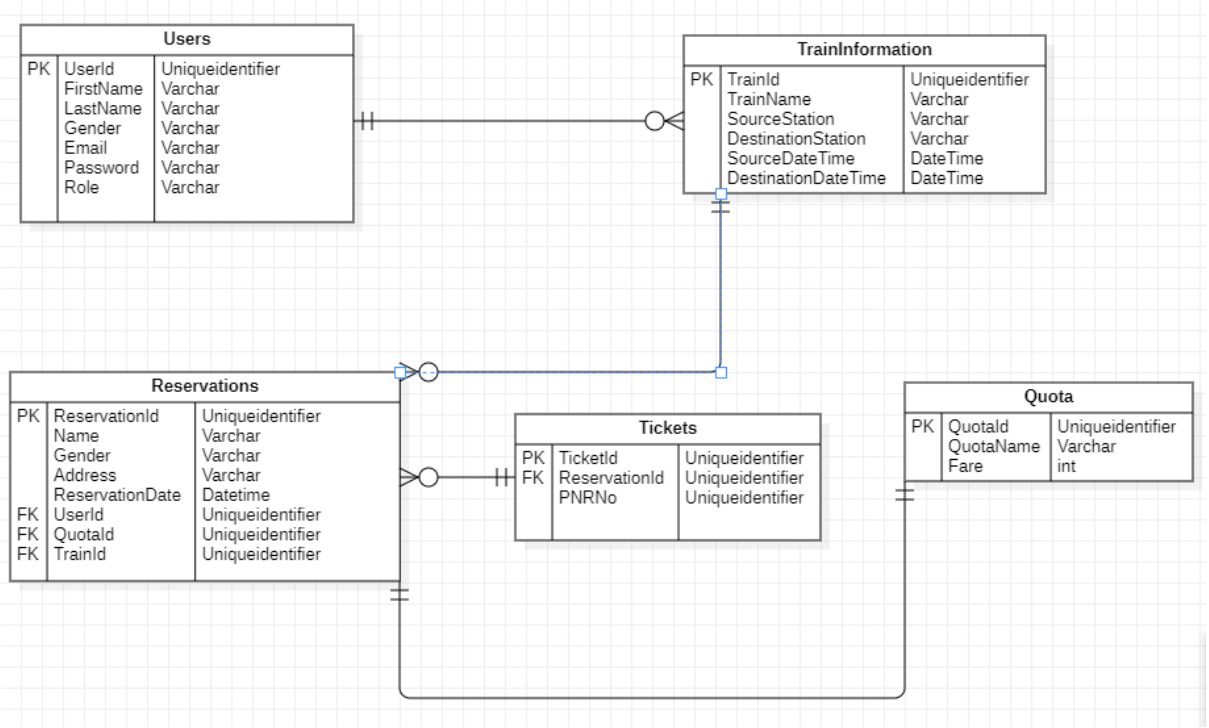
## Database Schema

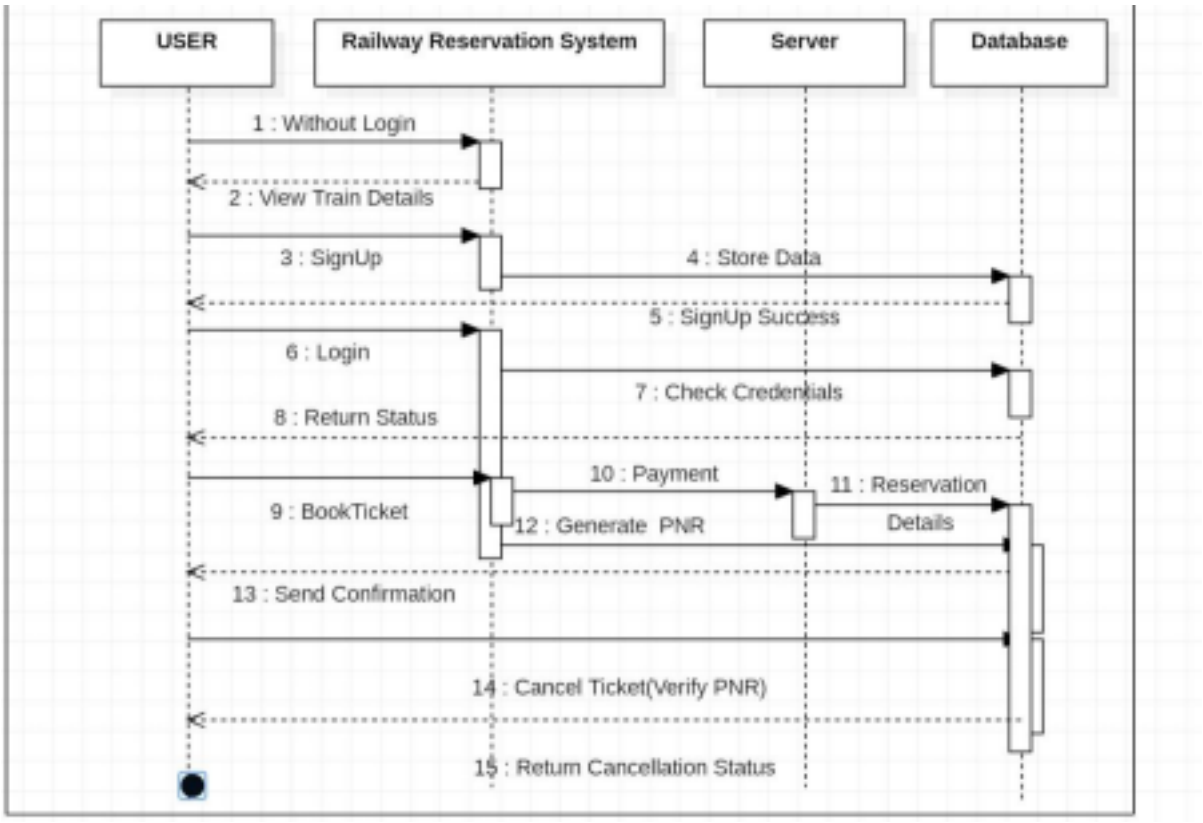







# Sequence Diagram

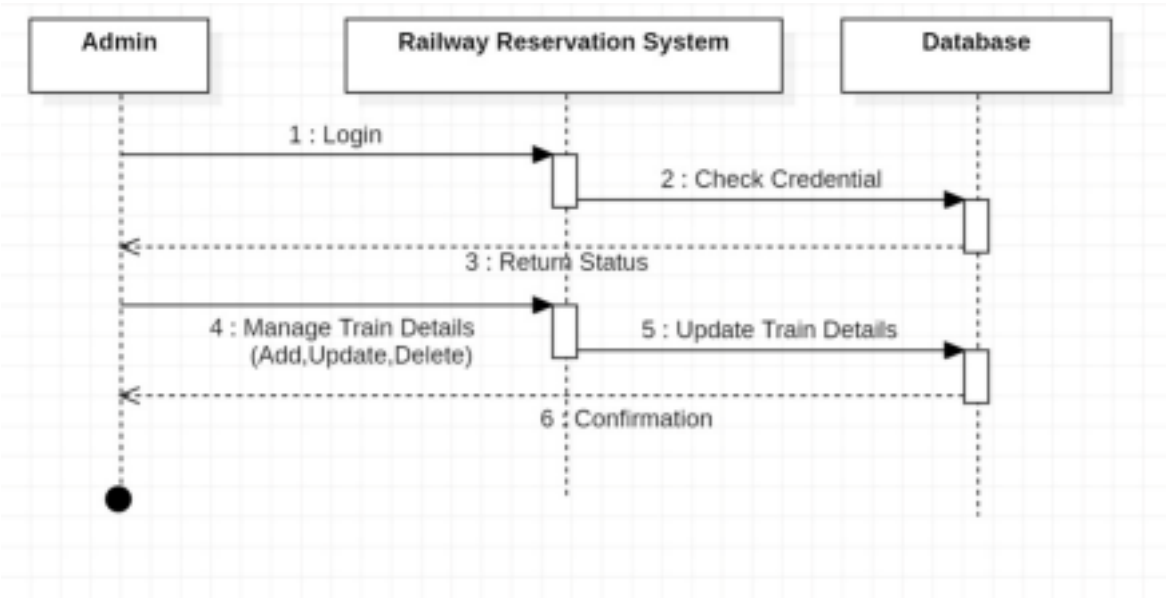
# User Sequence Diagram





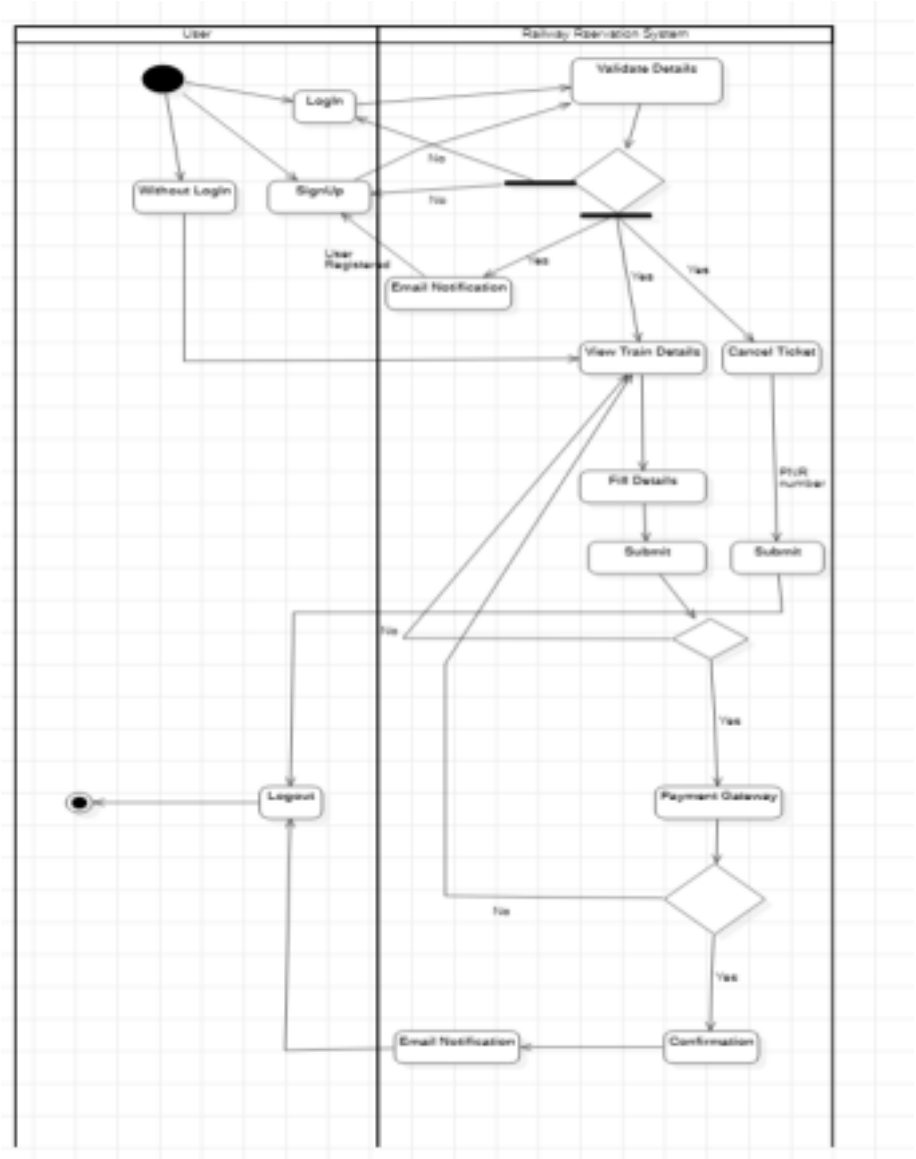



## Admin Sequence Diagram



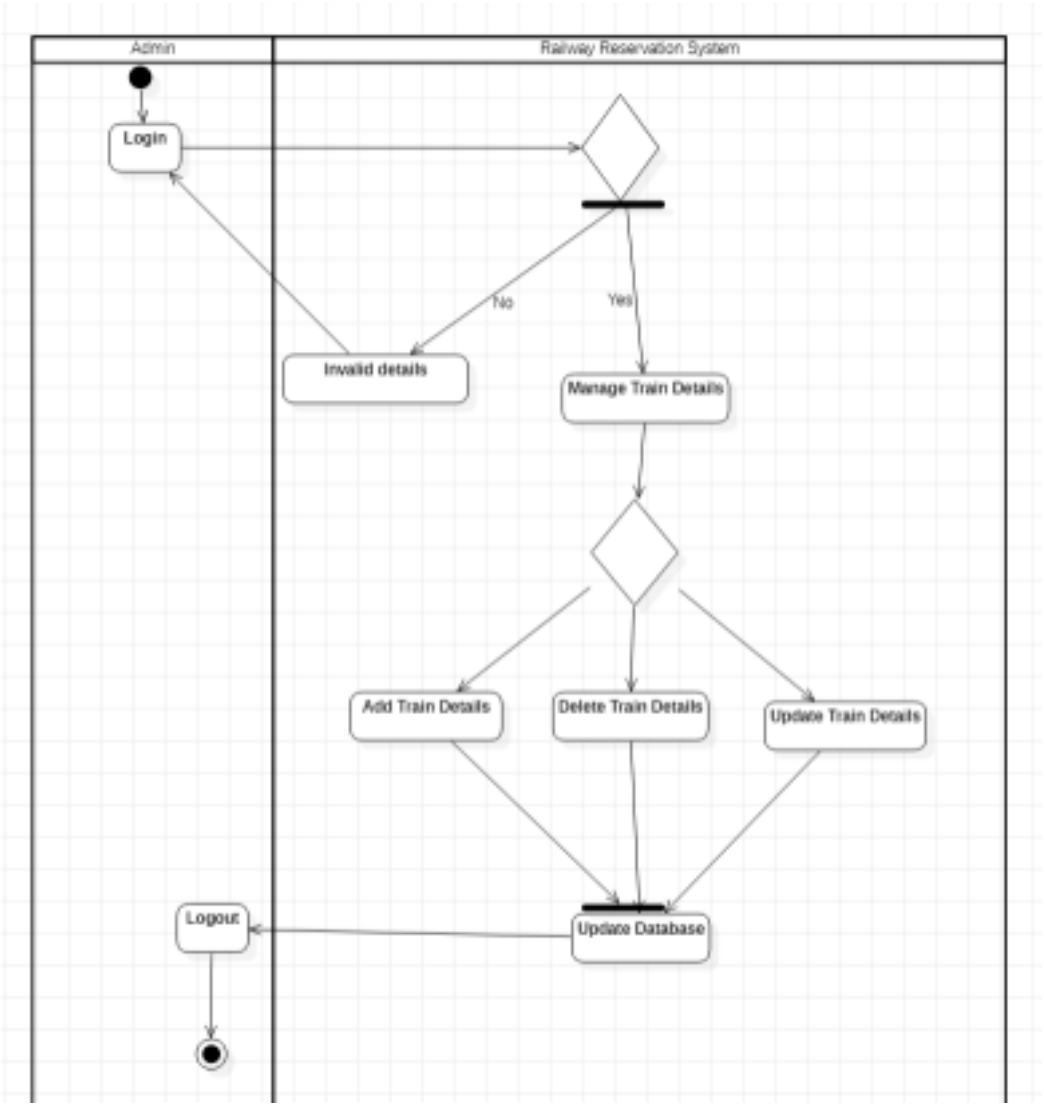
# Activity Diagram

## User Activity Diagram






## Admin Activity Diagram


Admin
Railway Reservation System
Login
No
Yes
Invalid details
Manage Train Details
Add Train Details
Delete Train Details
Update Train Details
Logout
Update Database