

ONLINE RAILWAY RESERVATION SYSTEM

A COURSE PROJECT REPORT

Submitted by

Sai Vardhan Reddy Pallapolu

[RA2111030010186]

Under the Guidance of

Dr. A. Arun

(Assistant Professor, Department of Networking and Communications)

In partial fulfilment for the Course of

18CSC303J

DATABASE MANAGEMENT SYSTEMS

In

COMPUTER SCIENCE ENGINEERING

with specialization in CYBER SECURITY



SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR – 603203 APRIL 2024



COLLEGE OF ENGINEERING & TECHNOLOGY SRM INSTITUTE OF
SCIENCE & TECHNOLOGY S.R.M. NAGAR, KATTANKULATHUR – 603203

BONAFIDE CERTIFICATE

RegisterNo. RA2111030010186, Certified to be the bonafide work done by SAI VARDHAN REDDY PALLAPOLU of III Year/VI Sem B. Tech Degree Course in the Database Management Systems in SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Kattankulathur during the academic year 2023 – 2024.

SIGNATURE

Dr. A. Arun

Assistant Professor
Department Of Networking

and Communications

SRMIST – KTR.

SIGNATURE

Dr. Annapurani Panaiyappan K

Professor and Head
Department of Networking

and Communications

SRMIST – KTR

ACKNOWLEDGEMENT

I would like to express my sincere appreciation to all those who have contributed to the completion of this project.

Firstly, I extend my gratitude to Dr. A. Arun Sir for his guidance and support throughout the duration of this Social Media Database Analysis project.

Their expertise and feedback were instrumental in shaping the project's direction and ensuring its successful completion.

I also want to thank SRM University for providing the necessary resources and facilities for conducting this project.

Additionally, I am grateful to the open-source community for the tools, libraries, and frameworks that were utilized in the development of this project.

Finally, I would like to acknowledge the countless hours of effort put into this project, which has been a rewarding learning experience.

This project is the culmination of my efforts, but it would not have been possible without the support and guidance of these individuals and institutions.

ABSTRACT

This project presents the design and implementation of a Social Media Database Analysis system, which aims to provide insights into user interactions within a social media platform. The system comprises a backend database management system and a frontend user interface allowing users to analyze various aspects of their social media activity.

The backend database stores user data including profiles, posts, likes, comments, and relationships between users such as followers and followees. By leveraging this database, the frontend interface enables users to view and analyze their social network interactions comprehensively.

Key functionalities of the system include the ability to view user profiles, explore followers and followees, analyze posts, likes, and comments. Additionally, the system provides features for visualizing trends and patterns within the social network data.

The project employs database management techniques to efficiently store and manage large volumes of social media data, ensuring scalability and performance. The frontend design focuses on user-friendliness, allowing users to easily navigate and interact with their social media analytics.

Overall, this project provides a comprehensive solution for social media database analysis, empowering users to gain valuable insights into their social network activities and interactions.

INTRODUCTION

The aim of the Online Railway Reservation System is to provide a user-friendly platform for passengers to check train schedules, make reservations, purchase tickets, and manage their bookings online. The system should also support administrative functions for managing train schedules, seat availability, and financial transactions.

Description: The RRS includes several essential modules:

1. User Management: This module manages user profiles, registration, login, and authentication.
2. Train Management: Admins can add and manage train schedules, including train details, routes, departure times, and seat availability.
3. Reservation and Ticketing: Passengers can search for trains, book seats, and purchase tickets.
4. Payment and Invoicing: Handles payment processing and generates invoices for confirmed reservations.

5. Ticket Cancellation: Allows users to cancel their bookings and receive refunds based on the cancellation policy.

6. Reports and Analytics: Provides insights into reservation trends, revenue generation, and passenger data.

Certainly, here is the information you provided in a tabular form:

1)users Passengers can register with the system using their personal information. Users are required to create a username and a secure, encrypted password. After successful registration, users can log in to the system.

UserID (Primary Key)	Username	Password	Name	Email	Contact Information

2) Trains:

Admins are responsible for updating and managing train schedules.

Train details include the train name, source station, destination station, departure time, available seats, and ticket prices.

TrainID	Train Name	Source Station	Destination Station	Departure Time	Available Seats	Ticket Price

3) Reservation and Ticket Booking:

*Passengers can search for trains based on source and destination.

*Users can select their preferred train and provide the number of seats they want to reserve.

*The system calculates the total fare and generates an invoice.

*Passengers can confirm the reservation and proceed to payment.

ReservationID	UserID	TrainID	Reservation Date and Time	Number of Seats	Total Fare

4) Passenger Details:

*Passengers are required to provide their details, including name, age, and gender, for each reserved seat.

*This information is stored in the database and is used for passenger validation.

PassengerID	ReservationID	Passenger Name	Age	Gender

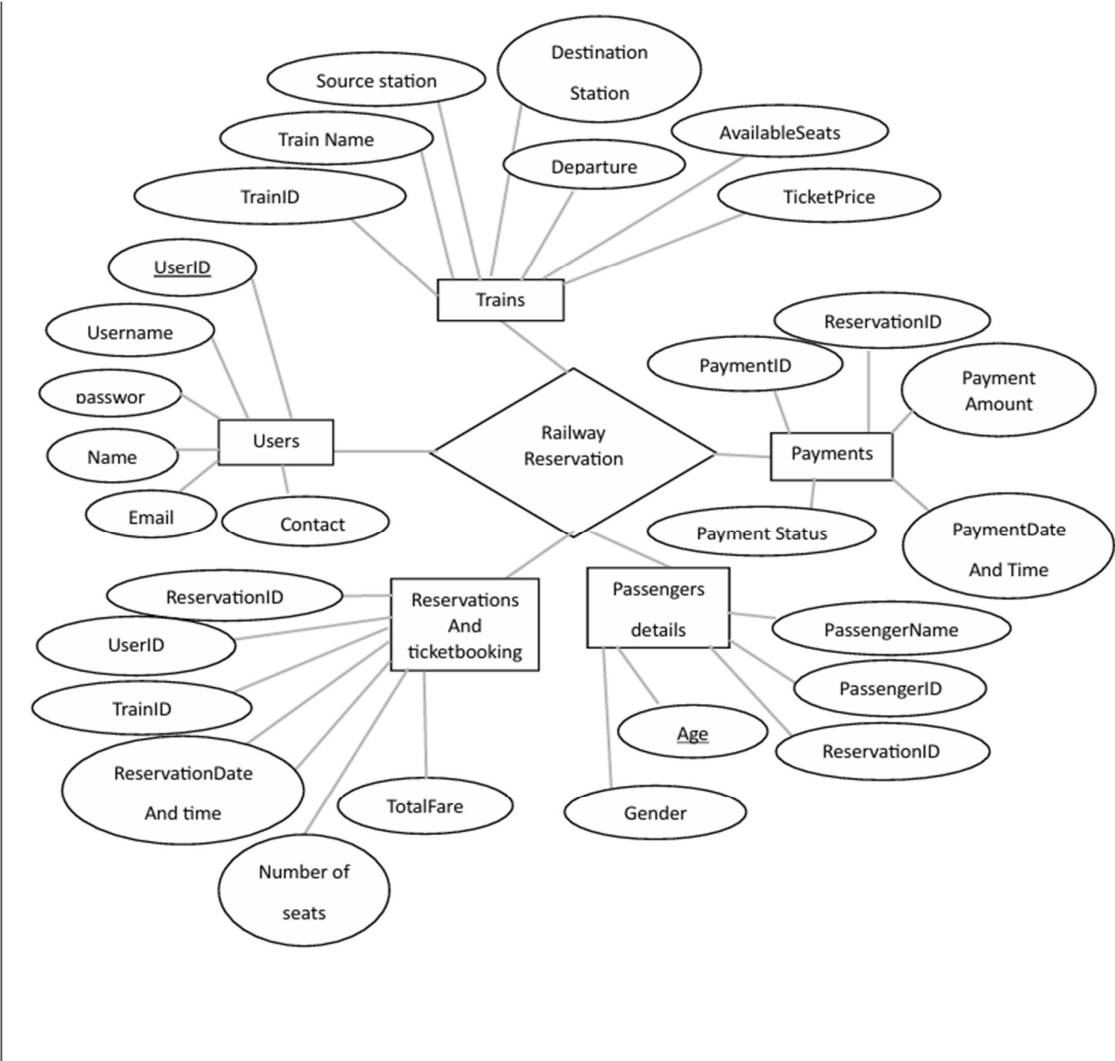
5) Payments:

The system supports various payment methods, including credit cards, digital wallets, and net banking.

Once the payment is made, the system updates the payment status and records the payment date and time.

PaymentID	ReservationID	Payment Amount	Payment Status	Payment Date and Time

E-R Diagram:



Relational database schema:

1.Users (UserID [PK], Username, Password, Name, Email, Contact Information)

2.Trains (TrainID [PK], Train Name, Source Station, Destination Station, Departure Time, Available Seats, Ticket Price)

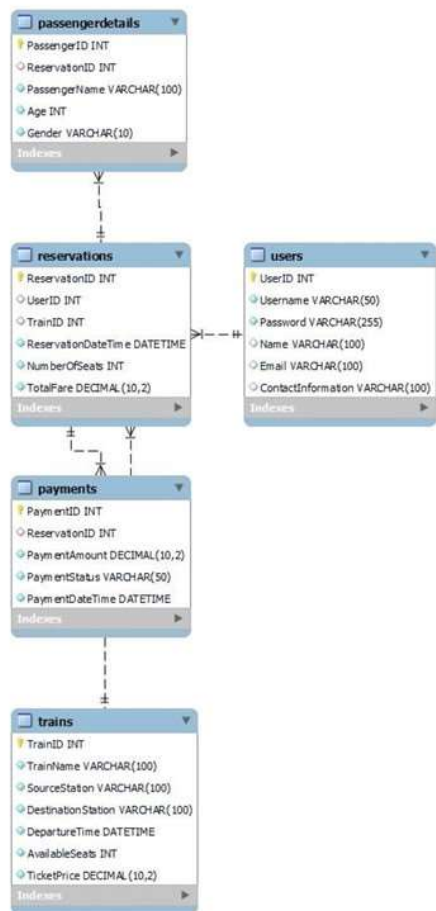
3.Reservations (ReservationID [PK], UserID [FK], TrainID [FK], Reservation Date and Time, Number of Seats, Total Fare)

4.Passenger Details (PassengerID [PK], ReservationID [FK], Passenger Name, Age, Gender)

5.Payments (PaymentID [PK], ReservationID [FK], Payment Amount, Payment Status, Payment Date and Time)

6.Guests: Stores first name, last name, contact information, and additional details for each guest

7.Invoices: Stores invoices issued to guests



SQL Code :

create database casestudy;

use casestudy;

-- Users Table

CREATE TABLE Users (

UserID INT PRIMARY KEY,

Username VARCHAR(50) NOT NULL,

Password VARCHAR(255) NOT NULL, -- Store
securely hashed and salted passwords

Name VARCHAR(100),

Email VARCHAR(100),

ContactInformation VARCHAR(100)

);

-- Insert sample data into the Users table

INSERT INTO Users (UserID, Username, Password,
Name, Email, ContactInformation)

VALUES

(1, 'Sai Dheeraj', 'hashed_password', 'Sai Dheeraj',
'saidheeraj@gmail.com', '123-456-7890'),

(2, 'Sai', 'hashed_password', 'Jane Smith',
'sai1@gmail.com', '987-654-3210');

select * from Users;

-- Trains Table

CREATE TABLE Trains (

TrainID INT PRIMARY KEY,

TrainName VARCHAR(100) NOT NULL,

SourceStation VARCHAR(100) NOT NULL,

DestinationStation VARCHAR(100) NOT NULL,

```
DepartureTime DATETIME NOT NULL,  
AvailableSeats INT NOT NULL,  
TicketPrice DECIMAL(10, 2) NOT NULL  
);  
  
-- Insert sample data into the Trains table  
  
INSERT INTO Trains (TrainID, TrainName,  
SourceStation, DestinationStation, DepartureTime,  
AvailableSeats, TicketPrice)  
  
VALUES  
  
    (1, 'Express 1', 'Station A', 'Station B', '2023-11-01  
09:00:00', 100, 50.00),  
  
    (2, 'Local 2', 'Station B', 'Station C', '2023-11-01  
10:00:00', 80, 30.00);  
  
select * from Trains;
```

-- Reservation and Ticket Booking Table

-- Passenger Details Table

```
CREATE TABLE PassengerDetails (  
    PassengerID INT PRIMARY KEY,  
    ReservationID INT,  
    PassengerName VARCHAR(100) NOT NULL,
```

```
Age INT NOT NULL,  
Gender VARCHAR(10) NOT NULL,  
FOREIGN KEY (ReservationID) REFERENCES  
Reservations(ReservationID)  
);
```

```
-- Insert sample data into the PassengerDetails table
```

```
INSERT INTO PassengerDetails (PassengerID,  
ReservationID, PassengerName, Age, Gender)  
VALUES
```

```
(1, 1, 'Passenger 1', 30, 'Male'),  
(2, 1, 'Passenger 2', 25, 'Female'),  
(3, 2, 'Passenger 3', 40, 'Male'),  
(4, 2, 'Passenger 4', 22, 'Female'),  
(5, 2, 'Passenger 5', 55, 'Male');
```

```
select * from PassengerDetails;
```

```
-- Payments Table
```

```
CREATE TABLE Payments (  
PaymentID INT PRIMARY KEY,  
ReservationID INT,  
PaymentAmount DECIMAL(10, 2) NOT NULL,  
PaymentStatus VARCHAR(50) NOT NULL,
```

```
PaymentDateTime DATETIME NOT NULL,  
FOREIGN KEY (ReservationID) REFERENCES  
Reservations(ReservationID)  
);  
  
-- Insert sample data into the Payments table  
  
INSERT INTO Payments (PaymentID, ReservationID,  
PaymentAmount, PaymentStatus, PaymentDateTime)  
VALUES  
  
    (1, 1, 100.00, 'Paid', '2023-11-01 10:30:00'),  
    (2, 2, 90.00, 'Paid', '2023-11-01 12:00:00');  
  
select * from Payments;
```

Conclusion :

The implementation of an online reservation system offers numerous benefits for both businesses and customers alike. It streamlines the booking process, enhances convenience, reduces errors, and improves overall efficiency.

By providing users with a seamless experience, businesses can increase customer satisfaction and loyalty, ultimately leading to higher revenue and growth opportunities.

Moreover, the data generated from online reservations can be leveraged to gain insights into customer preferences and behavior, enabling businesses to make informed decisions and tailor their services accordingly.

As technology continues to advance, investing in an online reservation system has become not just a convenience, but a necessity for businesses looking to stay competitive in today's digital landscape.

References :

It has been a matter of immense pleasure, and challenge to have this opportunity to take up this project and complete it successfully.

We have obtained information from various resources to design and implement our project. We have acquired most of the knowledge from the Internet.

The following are some of the resources:

- . www.w3schools.com
- . www.tutorialspoint.com
- . <https://medium.com/>