International Standard University

Department of Computer Science and Engineering

Course Code: CSE 321
Course Name: Database Systems

A Course Project on
"Railway Reservation System"

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Objective

Bangladesh has established railways long ago, as it is one of the most important means of transportation, and it plays an important role in the field of transportation and communication. With the rapid economic development, railways, and passengers and with a huge customer base, they buy train tickets the problem was very prominent. E-commerce can solve the problem of railway tickets and make it easier for customers. The introduction of the new online ticketing system is not only a technical innovation but also an improvement Railway services, to some extent, solve the difficult problem of issuing railway tickets. The Railway Reservation System facilitates the passengers to enquire about the trains available on the basis of source and destination, Booking and Cancellation of tickets, enquire about the status of the booked ticket, etc. The aim of case study is to design and develop a database maintaining the records of different trains, train status, and passengers. This project contains Introduction to the Railways reservation system It is the computerized system of reserving the seats of train seats in advanced. It is mainly used for long route. On line reservation has made the process for the reservation of seats very much easier than ever before.

Scope of Work

In our country Bangladesh, there are number of counters for the reservation of the seats and one can easily make reservations and get tickets. Then this project contains entity relationship model diagram based on railway reservation system and introduction to relation model. There is also design of the database of the railway reservation system based on relation model.

The main features of a railway reservation system project typically Includes the following:

- ❖ Train schedule and availability: The system allows passengers to search for train schedules and check seat availability on specific trains.
- ❖ Ticket booking and cancellation: The system allows passengers to book and cancel train tickets online, including selecting their preferred seat or berth.
- ❖ Payment processing: The system allows passengers to pay for their train tickets online using various payment methods, such as credit cards or e-wallets.

- ❖ User account management: The system allows passengers to create and manage their user accounts, which can be used to store their booking history and personal information.

Table Description

The following tables along with their constraints are used in the Railway reservation system.

Customer: The customer table plays a crucial role in managing passenger information. The table will store Customer name, Date of birth, Mobile number and Email.

Constraint: The doc_no will be primary key.

Book: This table is used to manage ticket reservations and related information. The table will store book no, Status, Transaction, Ticket no.

Constraint: book_no will be primary key and doc_no is foreign key.

Ticket: The Ticket table plays a crucial role in managing ticket reservations. The table will store Ticket no, avail class, date journey.

Constraint: ticket_no is primary key.

Train Status: This table is used to manage the information about train seats, train no, booked seats, wait seats.

Constraint: status_no is a primary key,trn_no is primary key.

Train: This table give information about train name, train no, status no.

Constraint: train_no is primary key,status _no and tamta_no is foreign key.

Time: This table is used to Provide journey details, train no, departure, destination, and class type.

Constraint: tamta_no is primary key,station_no and trn no is foreign key.

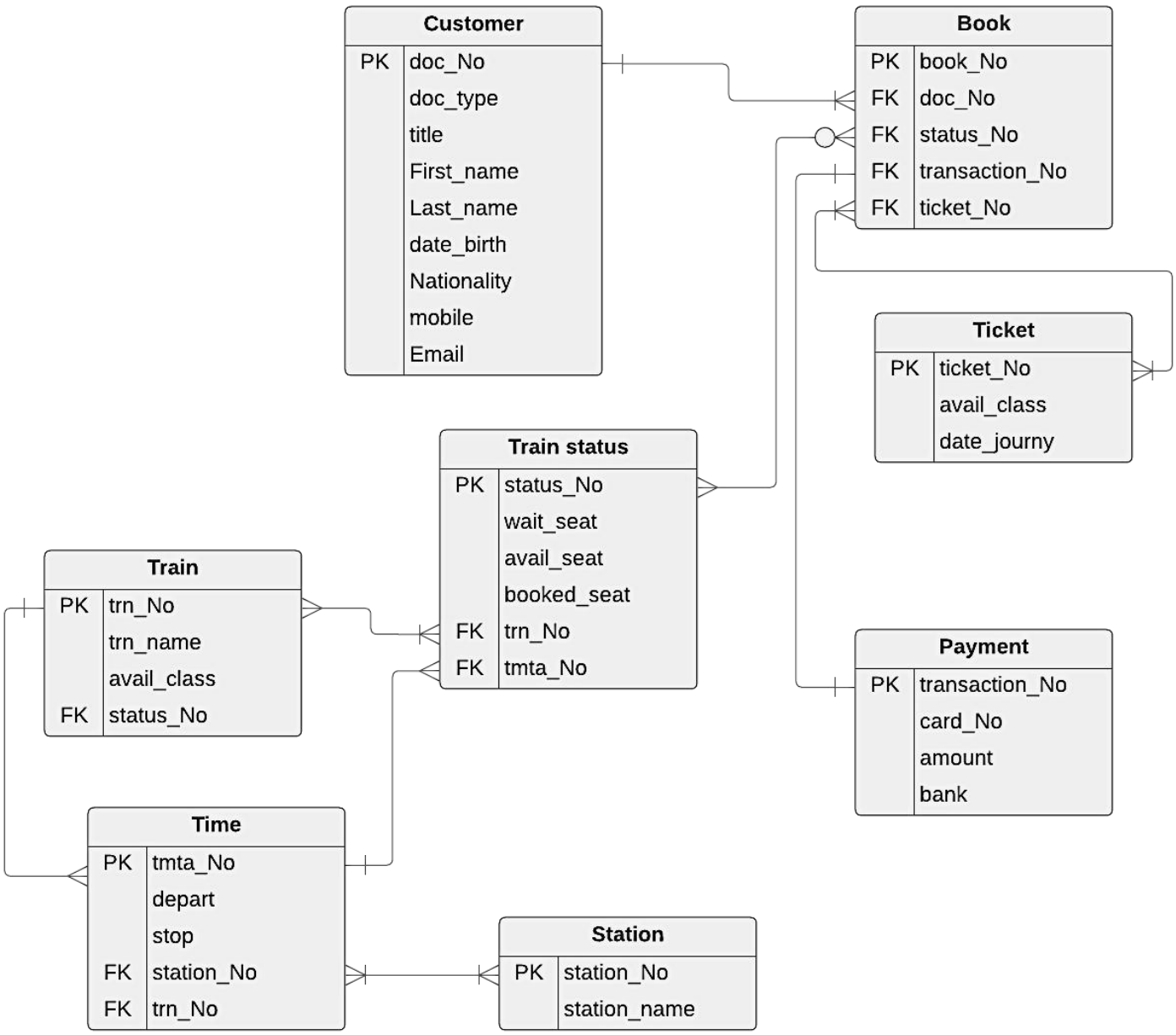
Station: This table give information about various train stations. The table will store station no, station name.

Constraint: station_no is primary key.

Payment: The payment table stores crucial information related to ticket payments. Indicates whether the payment was made online or offline (e.g., credit card, cash, net banking). The table will store transaction no, card no, amount, bank.

Constraint: transaction_no is primary key.

Entity Relationship Diagram of Railway Reservation System



Relation Database Schema for Railway Reservation System

1. Customer				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	doc_id	NUMBER	Primary Key	
2	doc_type	VARCHAR2 (50)		
3	title	VARCHAR2 (50)		
4	first_name	VARCHAR2 (50)		
5	last_name	VARCHAR2 (50)		
6	date_birth	DATE		
7	nationality	VARCHAR2 (50)		
8	mobile	NUMBER		
9	email	VARCHAR2 (30)		

2. Book				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	book_no	NUMBER	Primary Key	
2	doc_no	NUMBER	Foreign Key	
3	status_no	VARCHAR2 (30)	Foreign Key	
4	transaction_no	VARCHAR2 (50)	Foreign Key	
5	ticket_no	VARCHAR2 (50)	Foreign Key	

3. **Train Status**				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	status_no	VARCHAR2 (30)	Primary Key	
2	wait_seat	NUMBER		
3	avail_seat	NUMBER		
4	booked_seat	NUMBER		
5	trn_no	VARCHAR2 (30)	Foreign Key	
6	tamta_no	VARCHAR2 (30)	Foreign Key	

4. **Payment**				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	transaction_no	VARCHAR2 (50)	Primary Key	
2	card_no	VARCHAR2 (30)		
3	amount	NUMBER		
4	bank	VARCHAR2 (30)		

5. Ticket				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	ticket_no	VARCHAR2 (50)	Primary Key	
2	svail_class	VARCHAR2 (20)		
3	date_journy	DATE		

6. Train				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	trn_no	VARCHAR2 (30)	Primary Key	
2	trn_name	VARCHAR2 (30)		
3	avail_class	VARCHAR2 (30)		
4	status_no	VARCHAR2 (30)	Foreign Key	

7. Time				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	tamta_no	VARCHAR2 (30)	Primary Key	
2	depart	VARCHAR2 (50)		
3	stop	VARCHAR2 (50)		
4	station_no	VARCHAR2 (30)	Foreign Key	
5	trn_no	VARCHAR2 (30)	Foreign Key	

8. Station				
SL No.	Column Name	Data Type and Data Length	Constraint	Reference Table
1	station _no	VARCHAR2 (30)	Primary Key	
2	Station_name	VARCHAR2 (30)		

Conclusion

The purpose of this project is to develop a system and increase the effectiveness of the railway system, and database design is the focus of this system which are clearly and effectively designed by the business process diagrams and database ER diagram. Real-time tickets messages will be feedbacked to customers by the online railway booking system. The efficiency of booking is improved, manual booking errors is reduced, the management of railway passenger transport and customer booking is facilitated. which leads to ease of the system and increase customers. We also hope to develop the system by expanding it by increasing the number of stations.