

Ticket Booking System

Selection of Entities for the Module:

1. Passengers
2. Tickets
3. Ticket Type
4. Payment Method
5. Discount
6. Reservation
7. Refund
8. Bus
9. Bus Schedules
10. Bus Route
11. Bus Stop
12. Bus Station
13. Notifications
14. Journey History
15. Seat

Relationship Schema

- Passengers (Passenger_ID, Name, Age, Mobile_number, Degree, Institute, Year, Profession)
- Student(Passenger_ID, Major, Student_id)
- Service_holder(Passenger_id, Company Name, Position)
- Business_Man(Passenger_id, Business Name , Business Type)
- Freedom_Fighter(Passenger_id, Fighter Name, Award Received)
- Other(Passenger_id, Descriptions)

- Bus Routes (Route_Number, Starting_Point, Destination, Distance, Total Fare)

- Buses (Bus_Number, Seating_capacity, Model)

- Bus Stops (BusStop_ID, Name, Location)

- Bus Schedule (Schedule_ID , Departure_Time, Arrival_Time, Route_number)

- Ticket Types (Type_ID, Type_Name)

- Tickets (Ticket_Number, Issue_Date, Passenger_id, Type_id, Pay_method_id, Bus_number, Schedule_id, Discoount_id)

- Payment_Method (Pay_method_id, Method_Name)

- Discount (Discount_id, Discount_Type, Amount)

- Journey_History (History_id, Past_trip, Date, Ticket details, Passenger_id)

- Bus Stations (Station_id, Sation_Name, Location)

- Refund (Refund_id, Refund_Amount, Reason, Ticket_number)

- Notification (Notification_id, Message, Notification_type)
- Bus Reservation (Reservation_id, DateSeat_Number, Ticket_number)
- Seats (Bus_number, Reservation_id, Seat_id, Seat_number)

Relation Schema for Many to Many

1. Passenger - Notification (Many to many)
 - Notify (Passenger_ID, Notification_ID, Date_and_time)
2. Bus Route - Bus Stop (many to many)
 - Has (Route_Number, BusStop_ID)
3. Bus Route - Bus Station (many to many)
 - Station_Route (Route_Number, Station_ID)

SQL code

```
CREATE DATABASE IF NOT EXISTS Ticket_Booking_System;  
USE Ticket_Booking_System;
```

```
CREATE TABLE Passengers (  
    Passenger_ID INT AUTO_INCREMENT PRIMARY KEY,  
    Name VARCHAR(30),  
    Age INT,  
    Mobile_number VARCHAR(11),  
    Degree VARCHAR(20),  
    Institute VARCHAR(30),  
    Year INT,  
    Profession VARCHAR(10)  
);
```

```
CREATE TABLE Student (  
    Passenger_ID INT PRIMARY KEY,  
    Major VARCHAR(10),  
    Student_id INT,  
    FOREIGN KEY (Passenger_ID) REFERENCES Passengers(Passenger_ID)  
);
```

```
CREATE TABLE Service_holder (  
    Passenger_ID INT PRIMARY KEY,  
    Company_Name VARCHAR(20),  
    Position VARCHAR(10),  
    FOREIGN KEY (Passenger_ID) REFERENCES Passengers(Passenger_ID)  
);
```

```
CREATE TABLE Business_Man (  
    Passenger_ID INT PRIMARY KEY,  
    Business_Name VARCHAR(30),  
    Business_Type VARCHAR(15),  
    FOREIGN KEY (Passenger_ID) REFERENCES Passengers(Passenger_ID)  
);
```

```
CREATE TABLE Freedom_Fighter (  
    Passenger_ID INT PRIMARY KEY,  
    Fighter_Name VARCHAR(30),  
    Award_Received VARCHAR(20),  
    FOREIGN KEY (Passenger_ID) REFERENCES Passengers(Passenger_ID)
```

);

```
CREATE TABLE Other (  
    Passenger_ID INT PRIMARY KEY,  
    Descriptions TEXT,  
    FOREIGN KEY (Passenger_ID) REFERENCES Passengers(Passenger_ID)  
);
```

```
CREATE TABLE Bus_Routes (  
    Route_Number INT AUTO_INCREMENT PRIMARY KEY,  
    Starting_Point VARCHAR(30),  
    Destination VARCHAR(30),  
    Distance INT,  
    Total_Fare DECIMAL (10, 2)  
);
```

```
CREATE TABLE Buses (  
    Bus_Number INT AUTO_INCREMENT PRIMARY KEY,  
    Seating_capacity INT,  
    Model VARCHAR(10)  
);
```

```
CREATE TABLE Bus_Stops (  
    BusStop_ID INT AUTO_INCREMENT PRIMARY KEY,  
    Name VARCHAR(30),  
    Location VARCHAR(30)  
);
```

```
CREATE TABLE Bus_Schedule (  
    Schedule_ID INT AUTO_INCREMENT PRIMARY KEY,  
    Departure_Time DATETIME,  
    Arrival_Time DATETIME,  
    Route_number INT,  
    FOREIGN KEY (Route_number) REFERENCES Bus_Routes(Route_Number)  
);
```

```
CREATE TABLE Ticket_Types (  
    Type_ID INT AUTO_INCREMENT PRIMARY KEY,  
    Type_Name VARCHAR(20)  
);
```

```
CREATE TABLE Payment_Method (  
    Pay_method_id INT AUTO_INCREMENT PRIMARY KEY,  
    Method_Name VARCHAR(10)
```

);

```
CREATE TABLE Discount (  
    Discount_id INT AUTO_INCREMENT PRIMARY KEY,  
    Discount_Type VARCHAR(20),  
    Amount DECIMAL(10, 2)  
);
```

```
CREATE TABLE Tickets (  
    Ticket_Number INT AUTO_INCREMENT PRIMARY KEY,  
    Issue_Date DATE,  
    Passenger_id INT,  
    Type_id INT,  
    Pay_method_id INT,  
    Bus_number INT,  
    Schedule_id INT,  
    Discount_id INT,  
    FOREIGN KEY (Passenger_id) REFERENCES Passengers(Passenger_ID),  
    FOREIGN KEY (Type_id) REFERENCES Ticket_Types(Type_ID),  
    FOREIGN KEY (Pay_method_id) REFERENCES Payment_Method(Pay_method_id),  
    -- Referencing Payment_Method table  
    FOREIGN KEY (Bus_number) REFERENCES Buses(Bus_Number),  
    FOREIGN KEY (Schedule_id) REFERENCES Bus_Schedule(Schedule_ID),  
    FOREIGN KEY (Discount_id) REFERENCES Discount(Discount_id) -- Referencing  
    Discount table  
);
```

```
CREATE TABLE Journey_History (  
    History_id INT AUTO_INCREMENT PRIMARY KEY,  
    Past_trip VARCHAR(50),  
    Date DATE,  
    Ticket_details TEXT,  
    Passenger_id INT,  
    FOREIGN KEY (Passenger_id) REFERENCES Passengers(Passenger_ID)  
);
```

```
CREATE TABLE Bus_Stations (  
    Station_id INT AUTO_INCREMENT PRIMARY KEY,  
    Station_Name VARCHAR(30),  
    Location VARCHAR(30)  
);
```

```
CREATE TABLE Refund (  
    Refund_id INT AUTO_INCREMENT PRIMARY KEY,
```

```
Refund_Amount DECIMAL(10, 2),  
Reason TEXT,  
Ticket_number INT,  
FOREIGN KEY (Ticket_number) REFERENCES Tickets(Ticket_Number)  
);
```

```
CREATE TABLE Notification (  
Notification_id INT AUTO_INCREMENT PRIMARY KEY,  
Message TEXT,  
Notification_type VARCHAR(30)  
);
```

```
CREATE TABLE Bus_Reservation (  
Reservation_id INT AUTO_INCREMENT PRIMARY KEY,  
Date DATE,  
Seat_Number INT,  
Ticket_number INT,  
FOREIGN KEY (Ticket_number) REFERENCES Tickets(Ticket_Number)  
);
```

```
CREATE TABLE Seat (  
Seat_ID INT AUTO_INCREMENT PRIMARY KEY,  
Seat_Number INT,  
Bus_ID INT,  
FOREIGN KEY (Bus_ID) REFERENCES Buses(Bus_Number)  
);
```