# Bus Ticket Booking System Database Design Document

## 1. Introduction

This document outlines the design of a database for a bus ticket booking system. The system will manage bus schedules, reservations, customers, and payment information to facilitate booking and managing bus travel.

## 2. Objectives

- Store and manage bus schedules, routes, and availability.

- Handle customer information and reservations.

- Process payments and track booking statuses.

- Provide efficient data retrieval for reporting and user interaction.

## 3. Entities and Relationships

The system involves the following primary entities:

1. Customer
2. Bus
3. Route
4. Schedule
5. Reservation
6. Payment

## 4. Entity Descriptions

1. Customer

   - Attributes :

     - CustomerID (Primary Key)

- Name
- Email
- Phone
- Address
- DateOfBirth

- Relationships :
  - A customer can make multiple reservations.

2. Bus
   - Attributes :
     - BusID (Primary Key)
     - BusNumber
     - Capacity
     - BusType (e.g., Sleeper, Semi-Sleeper)
   - Relationships :
     - A bus can be assigned to multiple schedules.

3. Route
   - Attributes :
     - RouteID (Primary Key)
     - Origin
     - Destination
     - Distance
   - Relationships :
     - A route can have multiple schedules.

4. Schedule

- Attributes :
  - ScheduleID (Primary Key)
  - BusID (Foreign Key)
  - RouteID (Foreign Key)
  - DepartureTime
  - ArrivalTime
  - AvailableSeats
- Relationships :
  - A schedule is associated with one bus and one route.
  - A schedule can have multiple reservations.

5. Reservation
   - Attributes :
     - ReservationID (Primary Key)
     - ScheduleID (Foreign Key)
     - CustomerID (Foreign Key)
     - SeatNumber
     - ReservationStatus (e.g., Confirmed, Cancelled)
     - ReservationDate
   - Relationships :
     - A reservation is linked to one customer and one schedule.

6. Payment
   - Attributes :
     - PaymentID (Primary Key)
     - ReservationID (Foreign Key)
     - PaymentDate

- Amount

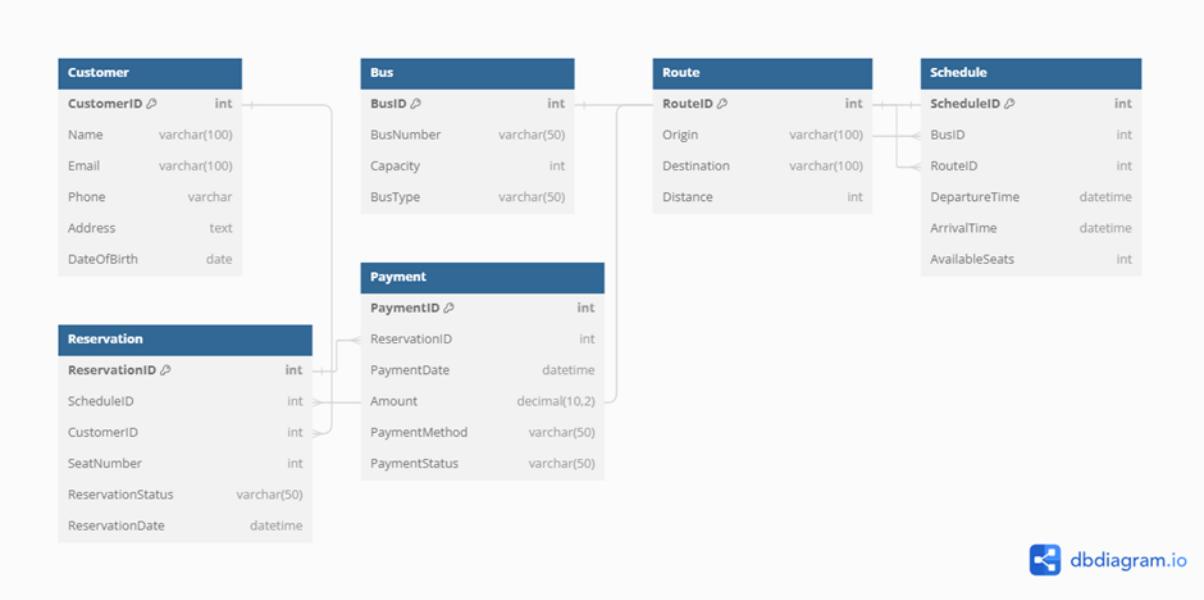
- PaymentMethod (e.g., Credit Card, GPal)

- PaymentStatus (e.g., Completed, Pending)

- Relationships :

- A payment is associated with one reservation.

5. ER Diagram



**Entity Relationship Diagram**