TraveLIT
Relational Database Schema Overview

Introduction

This report provides a detailed overview of the relational database schema for TraveLIT, as defined in the `TraveLIT.sql` file. The schema is designed to support a comprehensive travel booking platform, encompassing various aspects of travel planning, including flight and hotel bookings, user management, and more.

Tables Overview

1. UsersInfo

- Purpose: Stores information about customers.

- Attributes:

 - `UserID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each user.

 - `FirstName` (VARCHAR(100)): First name of the user.

 - `LastName` (VARCHAR(100)): Last name of the user.

 - `Email` (VARCHAR(150)): Email address of the user.

 - `Password` (VARCHAR(100)): Password for the user's account.

 - `Phone` (VARCHAR(30)): Phone number of the user.

 - `DateOfBirth` (DATE): Date of birth of the user.

 - `Address` (VARCHAR(255)): Address of the user.

 - `City` (VARCHAR(200)): City where the user resides.

 - `State` (VARCHAR(200)): State where the user resides.

 - `Country` (VARCHAR(200)): Country where the user resides.

- `ZipCode` (VARCHAR(20)): Zip code of the user's address.

2. AirlinesInfo

- Purpose: Stores information about airlines.

- Attributes:

- `AirlineID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each airline.

- `AirlineName` (VARCHAR(250)): Name of the airline.

- `AirlineCode` (VARCHAR(3)): Code of the airline.

3. AircraftsInfo

- Purpose: Stores information about aircraft.

- Attributes:

- `AircraftID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each aircraft.

- `AircraftType` (VARCHAR(200)): Type of the aircraft.

- `Capacity` (INT): Capacity of the aircraft.

4. AirportsInfo

- Purpose: Stores information about airports.

- Attributes:

- `AirportCode` (VARCHAR(3), PRIMARY KEY): Code of the airport.

- `AirportName` (VARCHAR(200)): Name of the airport.

- `City` (VARCHAR(150)): City where the airport is located.

- `Country` (VARCHAR(150)): Country where the airport is located.

5. RoutesInfo

- Purpose: Stores information about flight routes.

- Attributes:

 - `RouteID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each route.

 - `DepartureAirportCode` (VARCHAR(3)): Code of the departure airport.

 - `ArrivalAirportCode` (VARCHAR(3)): Code of the arrival airport.

 - `Duration` (INT): Duration of the flight in minutes.

 - Foreign Keys:

   - `DepartureAirportCode` references `AirportsInfo(AirportCode)`.

   - `ArrivalAirportCode` references `AirportsInfo(AirportCode)`.

6. FlightsInfo

- Purpose: Stores information about flights.

- Attributes:

 - `FlightID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each flight.

 - `AirlineID` (INT): Identifier of the airline operating the flight.

 - `AircraftID` (INT): Identifier of the aircraft used for the flight.

 - `FlightNumber` (VARCHAR(10)): Flight number.

 - `RouteID` (INT): Identifier of the route for the flight.

 - `DepartureTime` (DATETIME): Departure time of the flight.

 - `ArrivalTime` (DATETIME): Arrival time of the flight.

 - `EconomySeats` (INT): Number of economy seats available.

 - `BusinessSeats` (INT): Number of business seats available.

 - `PNRnumber` (VARCHAR(13)): Passenger Name Record number.

 - `Price` (DECIMAL(10, 2)): Price of the flight.

- `Status` (ENUM('On-Time', 'Delayed', 'Cancelled', 'Departed', 'Arrived')): Current status of the flight.

- Foreign Keys:

  - `AirlineID` references `AirlinesInfo(AirlineID)`.

  - `AircraftID` references `AircraftsInfo(AircraftID)`.

  - `RouteID` references `RoutesInfo(RouteID)`.

7. FlightLayovers

- Purpose: Stores information about flight connections, including layovers.

- Attributes:

- `LayoverID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each layover.

- `DepartureFlightID` (INT): Identifier of the departure flight.

- `ArrivalFlightID` (INT): Identifier of the arrival flight.

- `LayoverDuration` (INT): Duration of the layover in minutes.

- `LayoverAirport` (VARCHAR(3)): Code of the airport where the layover occurs.

- Foreign Keys:

  - `DepartureFlightID` references `FlightsInfo(FlightID)`.

  - `ArrivalFlightID` references `FlightsInfo(FlightID)`.

  - `LayoverAirport` references `AirportsInfo(AirportCode)`.

8. FlightClassesInfo

- Purpose: Stores information about ticket classes for flights.

- Attributes:

- `ClassID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each flight class.

- `ClassName` (VARCHAR(150)): Name of the flight class.

9. LuggageInfo

- Purpose: Stores information about baggage details for flights.

- Attributes:

- `LuggageID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each luggage detail record.

- `FlightID` (INT): Identifier of the flight.

- `LuggageAllowance` (DECIMAL(10, 2)): Allowance for luggage in kilograms.

- Foreign Keys:

  - `FlightID` references `FlightsInfo(FlightID)`.

10. FlightPlansInfo

- Purpose: Stores information about flight plans.

- Attributes:

- `PlanId` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each flight plan.

- `PlanName` (VARCHAR(150)): Name of the flight plan.

- `LuggageID` (INT): Identifier of the luggage allowance for the flight plan.

- Foreign Keys:

  - `LuggageID` references `LuggageInfo(LuggageID)`.

11. PlanClass

- Purpose: Stores information about ticket availability for each flight class.

- Attributes:

- `PlanID` (INT): Identifier of the flight plan.

- `ClassID` (INT): Identifier of the flight class.

- `Price` (DECIMAL(10,2)): Price of the ticket for the specified flight class and plan.

- Primary Key: Composite key consisting of `PlanID` and `ClassID`.

- Foreign Keys:

  - `PlanID` references `FlightPlansInfo(PlanID)`.

  - `ClassID` references `FlightClassesInfo(ClassID)`.

12. TicketAvailability

- Purpose: Stores information about ticket availability for each flight class.

- Attributes:

- `AvailabilityID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each availability record.

- `FlightID` (INT): Identifier of the flight.

- `PlanID` (INT): Identifier of the flight plan.

- `ClassID` (INT): Identifier of the flight class.

- `AvailableSeats` (INT): Number of available seats for the specified flight class and plan.

- Foreign Keys:

  - `FlightID` references `FlightsInfo(FlightID)`.

  - `PlanID,ClassID` references `PlanClass(PlanID,ClassID)`.

13. FlightCancellationsInfo

- Purpose: Stores information about flight cancellations.

- Attributes:

- `CancellationID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each cancellation record.

- `FlightID` (INT): Identifier of the flight that was cancelled.

- `CancellationDate` (DATETIME): Date and time when the flight was cancelled.

- Foreign Keys:

  - `FlightID` references `FlightsInfo(FlightID)`.

14. CustomerPreferences

- Purpose: Stores information about customer preferences.

- Attributes:

- `PreferenceID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each preference record.

- `UserID` (INT): Identifier of the user.

- `FlightID` (INT): Identifier of the flight.

- `SeatPreference` (ENUM('Window', 'Aisle', 'Middle')): Seat preference of the user.

- `MealPreference` (VARCHAR(100)): Meal preference of the user.

- Foreign Keys:

  - `UserID` references `UsersInfo(UserID)`.

  - `FlightID` references `Flights

15. HotelsInfo

- Purpose: Stores information about hotels.

- Attributes:

- `HotelID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each hotel.

- `HotelName` (VARCHAR(200)): Name of the hotel.

- `City` (VARCHAR(150)): City where the hotel is located.
- `Country` (VARCHAR(150)): Country where the hotel is located.
- `Address` (VARCHAR(255)): Address of the hotel.
- `Ratings` (DECIMAL(1, 1)): Rating of the hotel.
- `Price` (DECIMAL(10, 2)): Average price per night for a room at the hotel.
- `AvailableRooms` (INT): Number of available rooms at the hotel.

16. HotelImages

- Purpose: Stores images associated with hotels.
- Attributes:
  - `ImageID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each image.
  - `HotelID` (INT): Identifier of the hotel associated with the image.
  - `ImageURL` (VARCHAR(255)): URL of the image.
- Foreign Keys:
  - `HotelID` references `HotelsInfo(HotelID)`.

17. RoomTypesInfo

- Purpose: Stores information about hotel room types.
- Attributes:
  - `RoomTypeID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each room type.
  - `TypeName` (VARCHAR(255)): Name of the room type.

18. HotelRoomsInfo

- Purpose: Stores information about hotel rooms.

- Attributes:

- `RoomID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each room.

- `HotelID` (INT): Identifier of the hotel where the room is located.

- `RoomNumber` (VARCHAR(10)): Room number.

- `RoomTypeID` (INT): Identifier of the room type.

- `Occupancy` (INT): Maximum number of guests the room can accommodate.

- `RoomPrice` (DECIMAL(10, 2)): Price per night for the room.

- Foreign Keys:

  - `HotelID` references `HotelsInfo(HotelID)`.

  - `RoomTypeID` references `RoomTypesInfo(RoomTypeID)`.

19. RoomAvailabilityInfo

- Purpose: Stores information about hotel room availability by date range.

- Attributes:

- `AvailabilityID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each availability record.

- `HotelID` (INT): Identifier of the hotel.

- `RoomID` (INT): Identifier of the room.

- `StartDate` (DATE): Start date of the availability period.

- `EndDate` (DATE): End date of the availability period.

- `AvailableRooms` (INT): Number of available rooms during the specified period.

- Foreign Keys:

  - `HotelID` references `HotelsInfo(HotelID)`.

  - `RoomID` references `HotelRoomsInfo(RoomID)`.

20. HotelReviews

- Purpose: Stores information about customer reviews for hotels.
- Attributes:
 - `ReviewID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each review.
 - `UserID` (INT): Identifier of the user who wrote the review.
 - `HotelID` (INT): Identifier of the hotel being reviewed.
 - `Rating` (DECIMAL(1, 1)): Rating given by the user.
 - `Feedback` (TEXT): Feedback or comments provided by the user.
 - `ReviewDate` (DATETIME): Date and time when the review was submitted.
 - Foreign Keys:
  - `UserID` references `UsersInfo(UserID)`.
  - `HotelID` references `HotelsInfo(HotelID)`.

21. HotelAmenitiesInfo

- Purpose: Stores information about hotel amenities.
- Attributes:
 - `AmenityID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each amenity.
 - `AmenityName` (VARCHAR(200)): Name of the amenity.

22. AmenityHotel

- Purpose: Stores information about hotel amenities associations.
- Attributes:
 - `HotelID` (INT): Identifier of the hotel.
 - `AmenityID` (INT): Identifier of the amenity.

- Primary Key: Composite key consisting of `HotelID` and `AmenityID`.
- Foreign Keys:
  - `HotelID` references `HotelsInfo(HotelID)`.
  - `AmenityID` references `HotelAmenitiesInfo(AmenityID)`.

23. HotelBookings

- Purpose: Stores information about hotel bookings.
- Attributes:
  - `HotelBookingID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each hotel booking.
  - `UserID` (INT): Identifier of the user who made the booking.
  - `HotelID` (INT): Identifier of the hotel.
  - `RoomID` (INT): Identifier of the room booked.
  - `RoomTypeID` (INT): Identifier of the room type.
  - `NumOfRooms` (INT): Number of rooms booked.
  - `NumOfGuests` (INT): Number of guests.
  - `CheckInDate` (DATE): Check-in date.
  - `CheckOutDate` (DATE): Check-out date.
  - `TotalPrice` (DECIMAL(10, 2)): Total price of the booking.
  - `PaymentMethod` (VARCHAR(50)): Payment method used for the booking.
  - `Status` (ENUM('In-Process', 'Success', 'Failed')): Status of the booking.
- Foreign Keys:
  - `UserID` references `UsersInfo(UserID)`.
  - `HotelID` references `HotelsInfo(HotelID)`.
  - `RoomID` references `HotelRoomsInfo(RoomID)`.
  - `RoomTypeID` references `RoomTypesInfo(RoomTypeID)`.

24. FlightBookings

- Purpose: Stores information about flight bookings.

- Attributes:

 - `FlightBookingID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each flight booking.

 - `UserID` (INT): Identifier of the user who made the booking.

 - `FlightID` (INT): Identifier of the flight.

 - `AvailabilityID` (INT): Identifier of the ticket availability record.

 - `TotalPrice` (DECIMAL(10, 2)): Total price of the booking.

 - `NumOfSeats` (INT): Number of seats booked.

 - `PaymentMethod` (VARCHAR(50)): Payment method used for the booking.

 - `Status` (ENUM('In-Process', 'Success', 'Failed')): Status of the booking.

 - Foreign Keys:

  - `UserID` references `UsersInfo(UserID)`.

  - `FlightID` references `FlightsInfo(FlightID)`.

  - `AvailabilityID` references `TicketAvailability(AvailabilityID)`.

25. Bookings

- Purpose: Stores information about bookings, including both flight and hotel bookings.

- Attributes:

 - `BookingID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each booking.

 - `UserID` (INT): Identifier of the user who made the booking.

 - `HotelBookingID` (INT): Identifier of the hotel booking.

 - `FlightBookingID` (INT): Identifier of the flight booking.

 - `TotalPrice` (DECIMAL(10, 2)): Total price of the booking.

- `PaymentMethod` (VARCHAR(50)): Payment method used for the booking.

- `PaymentStatus` (ENUM('In-Process', 'Success', 'Failed')): Status of the payment.

- Foreign Keys:

  - `UserID` references `UsersInfo(UserID)`.

  - `HotelBookingID` references `HotelBookings(HotelBookingID)`.

  - `FlightBookingID` references `FlightBookings(FlightBookingID)`.

26. BookingCancellations

- Purpose: Stores information about user cancellations for flight bookings.

- Attributes:

- `CancellationID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each cancellation record.

- `UserID` (INT): Identifier of the user who cancelled the booking.

- `BookingID` (INT): Identifier of the booking that was cancelled.

- `CancellationDate` (DATETIME): Date and time when the booking was cancelled.

- `RefundAmount` (DECIMAL(10, 2)): Amount refunded to the user.

- Foreign Keys:

  - `UserID` references `UsersInfo(UserID)`.

  - `BookingID` references `Bookings(BookingID)`.

27. UserPayments

- Purpose: Stores information about customer payments.

- Attributes:

- `PaymentID` (INT, PRIMARY KEY, AUTO_INCREMENT): Unique identifier for each payment record.

- `BookingID` (INT): Identifier of the booking associated with the payment.
- `PaymentDate` (DATETIME): Date and time when the payment was made.
- `Amount` (DECIMAL(10, 2)): Amount of the payment.
- `PaymentMethod` (VARCHAR(100)): Payment method used for the payment.
- `PaymentStatus` (ENUM('In-Process', 'Success', 'Failed')): Status of the payment.
- Foreign Keys:
  - `BookingID` references `Bookings(BookingID)`.

Conclusion

This report provides a comprehensive overview of the relational database schema for TraveLIT, detailing the tables, their attributes, and the relationships between them. The schema is designed to support a wide range of functionalities, including user management, flight and hotel bookings, and payment processing, ensuring a robust and scalable foundation for the TraveLIT platform.