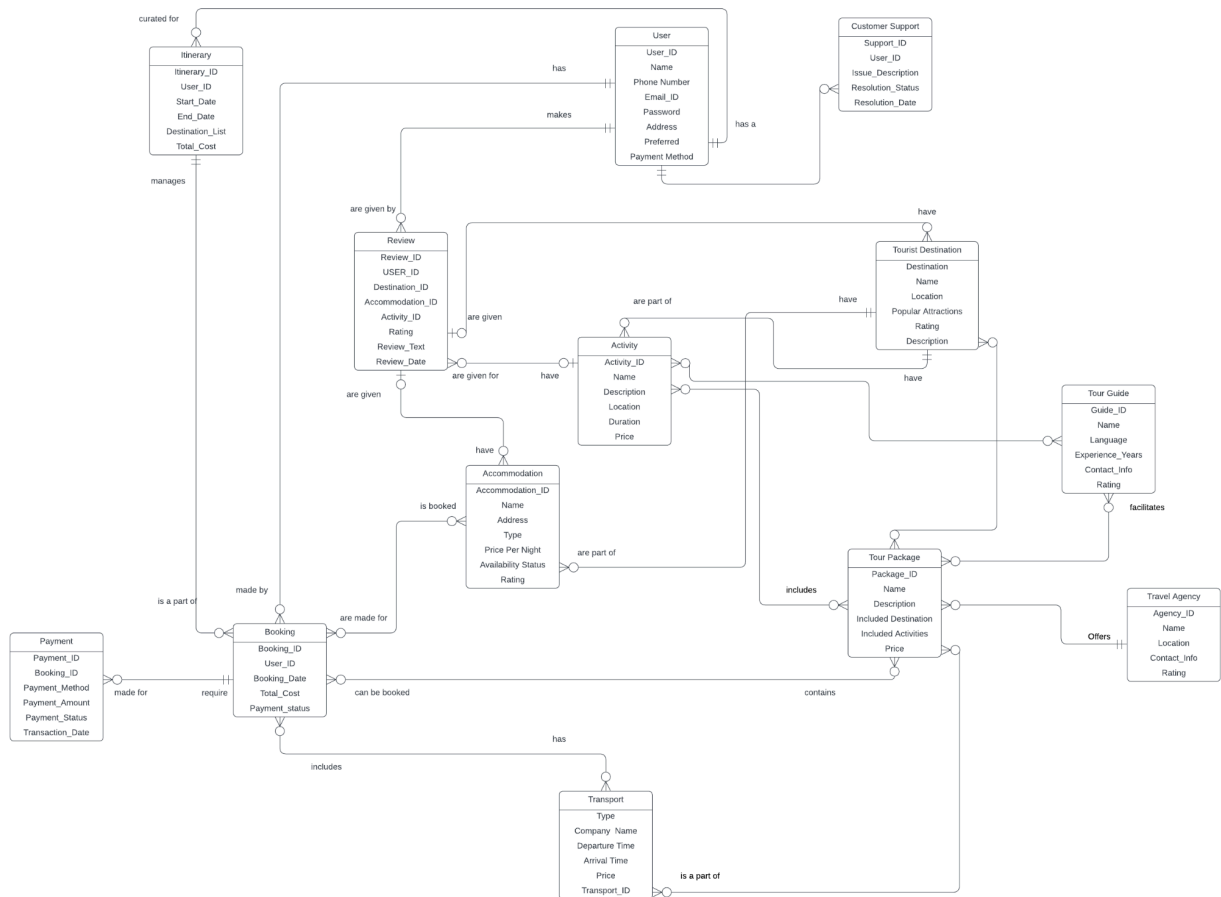


Tourism Management System

Group 8

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Business Problems Addressed by the Database

The database aims to streamline and manage information related to travel and tourism. It addresses the following business problems:

- **Efficient Itinerary Management:** Organizes user travel plans, including accommodations, activities, and transport.
- **Booking and Payment Integration:** Manages bookings and payments, reducing manual errors and ensuring smooth transactions.
- **User Experience Enhancement:** Stores user reviews and ratings for accommodations, activities, and destinations to help customers make informed decisions.
- **Tour Management:** Allows travel agencies to manage and offer tour packages that include destinations, activities, and transportation.
- **Customer Support Handling:** Keeps track of user issues and resolutions, improving customer service.

Business Rules

1. **User Management Rules :** Every user must provide a unique email and password to register. All fields marked as mandatory must be filled before a user can successfully register.
2. **Booking and Payment Rules :** A user can only book an accommodation, activity, or transport if it is marked as available for the selected dates.
3. **Payment Processing:** All bookings must be confirmed only after successful payment.
4. **Package Inclusions:** A tour package must include at least one accommodation, one activity, and one transport option. Customization of tour packages is allowed based on user preferences.
5. **Itinerary Management:** Users can create itineraries that include multiple bookings. An itinerary must have a specific start and end date and cannot overlap with other itineraries for the same user.

Entities and Their Relationships

1. User:

- **Why included:** Travelers utilizing the platform must be identified and managed by the system. This organization maintains critical user data, including payment methods, preferences, and personal information.
- **Attributes:** User_ID, Name, Phone_Number, Email_ID, Password, Address, Preferred_Payment_Method
- **Relationships:**
 - **One-to-Many with Itinerary:** A user can create multiple itineraries, but each itinerary belongs to only one user. This is because a user may plan multiple trips (past, present, or future), but each trip is specific to them.
 - **One-to-Many with Booking:** A user can make many bookings for accommodations, activities, or transport. Each booking, however, belongs to only one user.
 - **One-to-Many with Review:** A user can write multiple reviews, but each review is tied to a single user.
 - **One-to-Many with Customer Support:** Each user can have interactions with multiple customer support, but each support request is tied to only one user.

2. Itinerary:

- **Why included:** This entity is responsible for arranging and overseeing a user's travel arrangements, integrating reservations for accommodation, activities, and transportation into a seamless journey.
- **Attributes:** Itinerary_ID, User_ID, Start_Date, End_Date, Destination_List, Total_Cost
- **Relationships:**
 - **Many-to-One with User:** Each itinerary is created by one user, but a user can have many itineraries.
 - **One-to-Many with Booking:** An itinerary includes several bookings (for accommodation, transport, and activities). Each booking, however, is for a specific itinerary to keep things organized.

3. Tourist Destination:

- **Why included:** With details on the location, points of interest, and ratings, this entity represents well-known locations that users can visit. It's crucial for assisting users in making travel decisions.
- **Attributes:** Destination_ID, Name, Location, Popular_Attractions, Rating, Description
- **Relationships:**

- **One-to-Many with Review:** A destination can have many reviews written by different users, but each review is for one destination.
- **One-to-Many with Activity:** Each tourist destination offers several activities, but each activity is tied to one destination.
- **One-to-Many with Accommodation:** A destination can have several accommodations (hotels, etc.), but each accommodation is tied to one destination.

4. Review:

- **Why included:** Reviews offer commentary on lodging, events, and travel locations, assisting users in making wise selections. Because they provide social proof, reviews are an essential component of improving the user experience.
- **Attributes:** Review_ID, User_ID, Destination_ID, Accommodation_ID, Activity_ID, Rating, Review_Text, Review_Date
- **Relationships:**
 - **Many-to-One with User:** Each review is written by one user, but a user can write many reviews.
 - **Many-to-One with Destination, Accommodation, or Activity:** A review is tied to a specific destination, accommodation, or activity, but each of these entities can have many reviews from different users.

5. Activity:

- **Why included:** Activities are things that travelers can do while traveling. This helps users in scheduling and organizing activities for their trip.
- **Attributes:** Activity_ID, Name, Description, Location, Duration, Price
- **Relationships:**
 - **Many-to-One with Tourist Destination:** An activity takes place at one specific destination, but a destination can offer multiple activities.
 - **One-to-Many with Review:** Each activity can have several reviews, but a review is tied to one activity.
 - **One-to-Many with Booking:** Users can book several activities, but each booking is for one activity.

6. Accommodation:

- **Why included:** Accommodations refer to the places that travelers stay, such as hotels and resorts. This entity is essential to enabling users to make reservations for lodging.
- **Attributes:** Accommodation_ID, Name, Address, Type, Price_Per_Night, Availability_Status, Rating
- **Relationships:**

- **Many-to-One with Tourist Destination:** An accommodation belongs to one destination, but each destination can have many accommodations.
- **One-to-Many with Review:** Each accommodation can have many reviews, but a review is tied to one accommodation.
- **One-to-Many with Booking:** Users can book multiple accommodations, but each booking is tied to one specific accommodation.

7. Tour Guide:

- **Why included:** This entity is for people who provide activities or trips with guides. Tour guides provide knowledge and direction throughout activities, which improves the user's experience.
- **Attributes:** Guide_ID, Name, Language, Experience_Years, Contact_Info, Rating
- **Relationships:**
 - **One-to-Many with Tour Package:** A tour guide can manage multiple tour packages, but each package is assigned to one guide.

8. Tour Package:

- **Why included:** Tour packages include lodging, activities, and destinations to provide customers a fully immersive experience. This organization makes vacation planning easier by providing pre-planned travel experiences.
- **Attributes:** Package_ID, Name, Description, Included_Destination, Included_Activities, Price
- **Relationships:**
 - **Many-to-One with Tour Guide:** Each tour package is led by one tour guide, but a tour guide may lead multiple packages.
 - **One-to-Many with Booking:** A tour package can be booked by many users, but each booking belongs to one specific package.

9. Booking:

- **Why included:** This entity keeps track of a user's reservations for lodging, events, or transportation. It serves as the system's central component, guaranteeing that users can make and manage reservations.
- **Attributes:** Booking_ID, User_ID, Booking_Date, Total_Cost, Payment_Status
- **Relationships:**
 - **Many-to-One with User:** Each booking is made by one user, but a user can make many bookings.
 - **Many-to-One with Itinerary:** A booking belongs to one itinerary, but an itinerary can include multiple bookings.

- **Many-to-One with Accommodation, and Tour Package:** Each booking is for one accommodation, activity, or tour package, but each of these entities can have many bookings.

10. Transport:

- **Why included:** Travel arrangements between locations can be scheduled using modes of transportation like buses, trains, and airplanes. This organization is necessary to guarantee easy travel arrangements.
- **Attributes:** Transport_ID, Type, Company_Name, Departure_Time, Arrival_Time, Price
- **Relationships:**
 - **One-to-Many with Booking:** Users can book multiple transports, but each booking is for one specific transport.

11. Payment:

- **Why included:** The payment entity keeps track of booking-related transactions. This is essential for controlling user payments and guaranteeing that reservations are validated following successful transactions.
- **Attributes:** Payment_ID, Booking_ID, Payment_Method, Payment_Amount, Payment_Status, Transaction_Date
- **Relationships:**
 - **Many-to-One with Booking:** Each payment is tied to one booking, but each booking generates a payment.

12. Customer Support:

- **Why included:** This organization keeps track of user-posted complaints and their resolution. It guarantees that consumers will have a means of resolving issues that arise when making reservations or traveling.
- **Attributes:** Support_ID, User_ID, Issue_Description, Resolution_Status, Resolution_Date
- **Relationships:**
 - **Many-to-One with User:** Each support request belongs to one user, but a user can have multiple requests.

13. Travel Agency:

- **Why included:** This entity is a representative of the travel agency that provides services like lodging and tours. It controls user interactions and aids with the organization of the services offered.
- **Attributes:** Agency_ID, Name, Location, Contact_Info, Rating
- **Relationships:**
 - **One-to-Many with Tour Package:** A travel agency can offer several tour packages, but each tour package is managed by one travel agency.