Tour Management System with Travel Package Customization and Vendor Integration

1. Introduction

This Document Outlines the database design for a Tour Management System, which aims to provide a holistic solution for managing personalized travel experience. The system empowers users to create customized itineraries by selecting options from a variety of third-party vendors, including accommodations, transportation, meals and activities. Additionally, it supports payment tracking and enhances user satisfaction through robust data management and real-time service integration, ultimately simplifying the planning process for travelers seeking their ideal getaways.

2. Business Problems Addressed

The Tour Management system addresses several key business problems:

- Personalized Travel Experience: The system enables customers to create customized itineraries tailored to their preferences.
- Efficient Booking Management: optimizes booking process, reducing errors and improving reservation handling, which ultimately benefits both customers and travel providers.
- Real-Time Updates and Integration: It facilitates real-time integration with third-party vendors which provide customers with accurate availability and pricing for accommodation, transportation and activities.
- Enhanced Customer Satisfaction and Comprehensive Data Management: The system provides a centralized database to manage customer information, bookings, payment histories. Coupled with user-friendly interface for browsing and selecting services which enhances overall customer experience.

3. Entities Description

3.1 Customer: Represents individuals who books the tour and utilizes the services provided from the vendor.
- **Attributes:** Customer_ID (Primary Key), Name, Email, Phone_Number, Address, Date_of_Birth
- **Relationships:** makes a booking, guided by an employee

3.2 Tour: Represent all the tour packages where customers can choose from the available options.
- **Attributes:** Tour_ID (Primary Key), Tour_Name, Tour_Description, Price,Start_Date, End_Date
- **Relationships:** Curated by employees, booked by customers

3.3 Booking: Represents a customer booking details for a tour, including the date and the total
- **Attributes:** Booking_ID (Primary Key),Booking_Date, Total_Cost
- **Relationships:** Bookings made by customers, bill generated, monitored by employee

3.4 Vendor:Represents local service providers who offer accommodation, transport, meals, and additional activities.
- **Attributes:**Vendor_ID (Primary Key), Vendor_Name, Vendor_Type (Accommodation, Transport, Meals, Activity), Contact_Details
- **Relationships:** vendor provides services, communicates with employees

3.5 Service: Represents services provided by vendors. These services are customizable options for the customers.
- **Attributes:** Service_ID (Primary Key), Service_Name, Service_Type (Hotel, Car Rental, Restaurant, Tour Guide, etc.), Service_Price, Service_Availability
- **Relationships:** services are provided by different vendors, provides accommodation, transport, meals, activity choices to customers

3.6 Billing: Represents payment details for each booking.
- **Attributes:** Payment_ID (Primary Key), Payment_Amount, Payment_Date, Payment_Status (Pending, Completed, Failed)
- **Relationships:** bill generated

3.7 Transportation: Represents transport services, which are customizable and provided by vendors.
- **Attributes:** Transportation_ID (Primary Key), Vehicle_Type (Car, Bus, Van),Capacity, Departure_Time
- **Relationships:** arranged by vendor

3.8 Accommodation: Represents accommodation services offered by vendors, which customers can select based on their preferences.
- **Attributes:** Accommodation_ID (Primary Key), Room_Type (Single, Double, Suite), Check_In_Date, Check_Out_Date
- **Relationships:** set up by vendor

3.9 Meal:Represents meal options provided by restaurants or hotels as part of the tour package.
- **Attributes:** Meal_ID (Primary Key), Meal_Type (Breakfast, Lunch, Dinner), Cuisine_Type (Local, International)
- **Relationships:** served by vendor

3.10 Activity: Represents activities or excursions that customers can include in their tour package.
- **Attributes**:Activity_ID (Primary Key), Activity_Name, Activity_Type (Adventure, Cultural, Sightseeing), Duration
- **Relationships:** planned by vendor

4. Entity Relationships

4.1 Customer
Booking**:** One-to-Many (A customer may book multiple bookings)
Employee: Many-to-One (Multiple customers are managed by one employee)

4.2 Tour
Booking: One-to-Many (A single tour can have multiple bookings).
Employee: Many-to-Many (Multiple tours can be managed by multiple employees)

4.3 Booking
Customer: Many-to-One (One or more than one bookings can be made by one customer)
Tour: Many-to-One (A tour can have multiple bookings)
Billing: One-to-One (Each booking generates single bill)

4.4 Vendor
Employee: Many-to-One (One Employee can coordinate with multiple Vendors)
Service: One-to-Many (One Vendor can provide different Services)

4.5 Service
Vendor: Many-to-One(Many Services are linked to one vendor)
Meal: One-to-Many (A service can serve multiple meals)

Accommodation: One-to-Many (A service can set up multiple accommodations)
Transportation: One-to-Many (A service can arrange multiple transportations)
Activity: One-to-Many (Multiple activities are planned by a single service)

4.6 Billing
Booking: One-to-One (One bill is generated for a single booking)

4.7 Employee
Customer: One-to-Many (A single employee can manage many customers)
Booking: One-to-Many (Multiple bookings are monitored by single employee)
Tour: Many-to-Many (Multiple tours are curated by multiple employees)
Vendor: One-to-Many (A single employee coordinates with multiple vendors)

4.8 Transportation
Service: Many-to-One (Multiple Transportation is arranged by single service)

4.9 Accommodation
Service: Many-to-One (Multiple accommodations are set up by single service)

4.10 Meal
Service: Many-to-One (Multiple meals are served by single service)

4.11 Activity
Service: Many-to-One (Many activities are planned by single service)

5. Entity Relationship Diagram

Billing
- Billing ID
- Billing Amount
- Billing Date
- Payment Status

generated for

Customer
- Customer ID
- Name
- Phone Number
- Email
- Address
- Date Of Birth

Makes a

Booking
- Booking ID
- Booking Date
- Total Cost

Made for

Tour
- Tour ID
- Name
- Tour Description
- Duration
- Price
- Tour Type
- Start Date
- End Date

Monitored by

Refered by

Managed by

Curates

Coordinates with

Employee
- Employee ID
- Employee Name
- Employee Role
- Department
- Email
- Phone
- Hire Date
- Salary

Service
- Service ID
- ServiceName
- Service Type
- Service Price
- Service Availability

Provided by

Vendor
- Vendor ID
- Vendor Name
- Vendor Contact
- Vendor Type

Activity
- Activity ID
- Activity Name
- Activity Type
- Activity Duration

Planned in

Arranged by

Served by

Set up

Meal
- Meal ID
- Meal Type
- Cuisine Type

Accommodation
- Accommodation ID
- Room Type
- Check in date
- Check out Date

Transportation
- Transportation ID
- Vehicle Model
- Vehicle Capacity
- Departure Time