

# DB Design Documentation

## Domain Description and Relevance:

The chosen domain for this project is Employee Travel Management. In modern organizations, managing employee travel efficiently is crucial for both cost management and employee satisfaction. This system facilitates the management of travel requests, approvals, accommodations, and expenses, streamlining the entire process and ensuring compliance with company policies and budgets. Through automation and centralization of travel-related activities, organizations can optimize resource utilization, enhance transparency, and improve decision-making.

## Detailed Table Descriptions:

### Employee Table:

- > employee\_id (INT): Unique identifier for each employee.
- > employee\_name (VARCHAR): Name of the employee.
- > phone (VARCHAR): Contact number of the employee.
- > email (VARCHAR): Email address of the employee.
- > address (VARCHAR): Address of the employee.
- > position (VARCHAR): Position/title of the employee within the organization.

### Location Table:

- > location\_id (INT): Unique identifier for each location.
- > location\_name (VARCHAR): Name of the location.
- > address (VARCHAR): Address of the location.
- > city (VARCHAR): City where the location is situated.
- > country (VARCHAR): Country where the location is situated.

### TravelRequest Table:

- > request\_id (INT): Unique identifier for each travel request.
- > employee\_id (INT): References the employee making the travel request.

- > source (INT): References the source location.
- > destination (INT): References the destination location.
- > date (DATE): Date of the travel request.
- > no\_of\_days (INT): Number of days for the travel.

#### Approval Table:

- > approval\_id (INT): Unique identifier for each approval.
- > request\_id (INT): References the travel request associated with the approval.
- > approver\_id (INT): Identifier of the approver. References employee\_id of Employee table
- > date (DATETIME): Date and time of approval.
- > status (ENUM): Status of the approval (e.g., approved, pending, rejected).

#### Accommodation Table:

- > accommodation\_id (INT): Unique identifier for each accommodation.
- > check\_in\_date (DATE): Date of check-in.
- > check\_out\_date (DATE): Date of check-out.
- > stay\_location (INT): References location\_id of Location Table
- > approval\_id (INT): References the approval associated with the accommodation.
- > accommodation\_expense (DECIMAL): Expense incurred for accommodation.

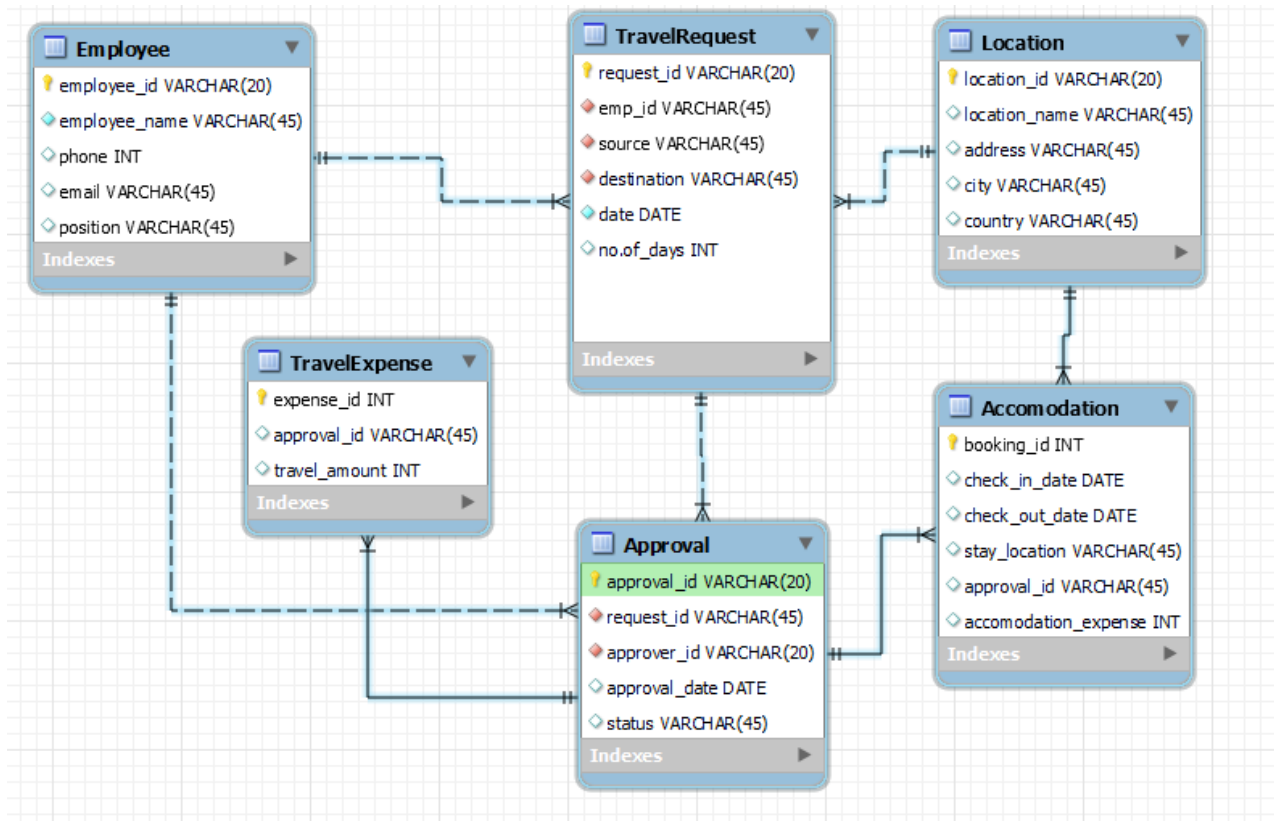
#### TravelExpense Table:

- > expense\_id (INT): Unique identifier for each travel expense.
- > approval\_id (INT): References the approval associated with the expense.
- > travel\_amount (DECIMAL): Amount of travel expense incurred.

#### **Normalization Process:**

All tables are in 3NF format

## ER - Diagram



## **Relationship between Tables**

### **1. Employee Table:**

- One-to-Many Relationship with TravelRequest Table : An employee can make multiple travel requests.

### **2. TravelRequest Table:**

- Many-to-One Relationship with Employee Table : Many travel requests can be associated with one employee.
- Many-to-One Relationship with Location Table : Many travel requests can have a single source location. Many travel requests can have a single destination location.

### **3. Approval Table:**

- Many-to-One Relationship with TravelRequest Table : Many approvals can be associated with one travel request.

### **4. Accommodation Table:**

- Many-to-One Relationship with Approval Table : Many accommodations can be associated with one approval.

### **5. TravelExpense Table:**

- Many-to-One Relationship with Approval Table : Many travel expenses can be associated with one approval.