Travel Guide Application

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1. Entity Relationship Description and Application Basic Structure

1.1. Entities

- User
  - ➢ Represents each user who registers on the application.
  - ➢ **Attributes**: userID (PK), name, email, password

- Destination
  - ➢ Represents each travel destination.
  - ➢ **Attributes**: destinationID (PK), name, averageCost, bestTravelTime, averageWeather

- Questionnaire
  - ➢ Represents each set of answers provided by the user.
  - ➢ **Attributes**: questionnaireID (PK), userID (FK), budget, weatherPreference, travelStartDate, travelEndDate

- Suggestion
  - ➢ Represents travel destination suggestions for each user.
  - ➢ **Attributes**: suggestionID (PK), questionnaireID (FK), destinationID (FK), matchScore

1.2. Relationships

- User – Questionnaire (Fills Out)
  - One-to-Many from *User* to *Questionnaire*: one user can fill out multiple questionnaires over time. Each *Questionnaire* entry corresponds to exactly one user.

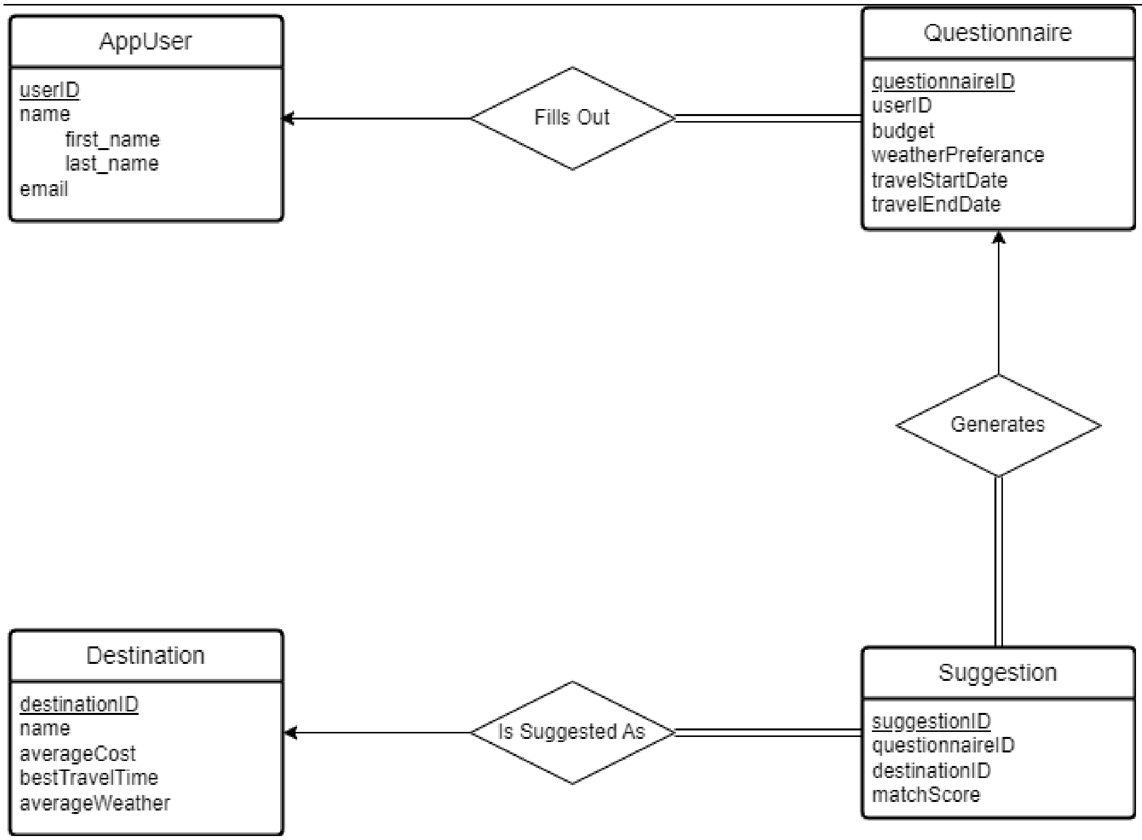
- Questionnaire – Suggestion (Generates)
  - One-to-Many from *Questionnaire* to *Suggestion*: based on a single questionnaire, multiple travel suggestions can be generated. Each suggestion corresponds to exactly one questionnaire.

- Destination – Suggestion (Is Suggested As)
  - One-to-Many from *Destination* to *Suggestion*: one destination can be suggested in multiple suggestions, but each suggestion points to exactly one destination.

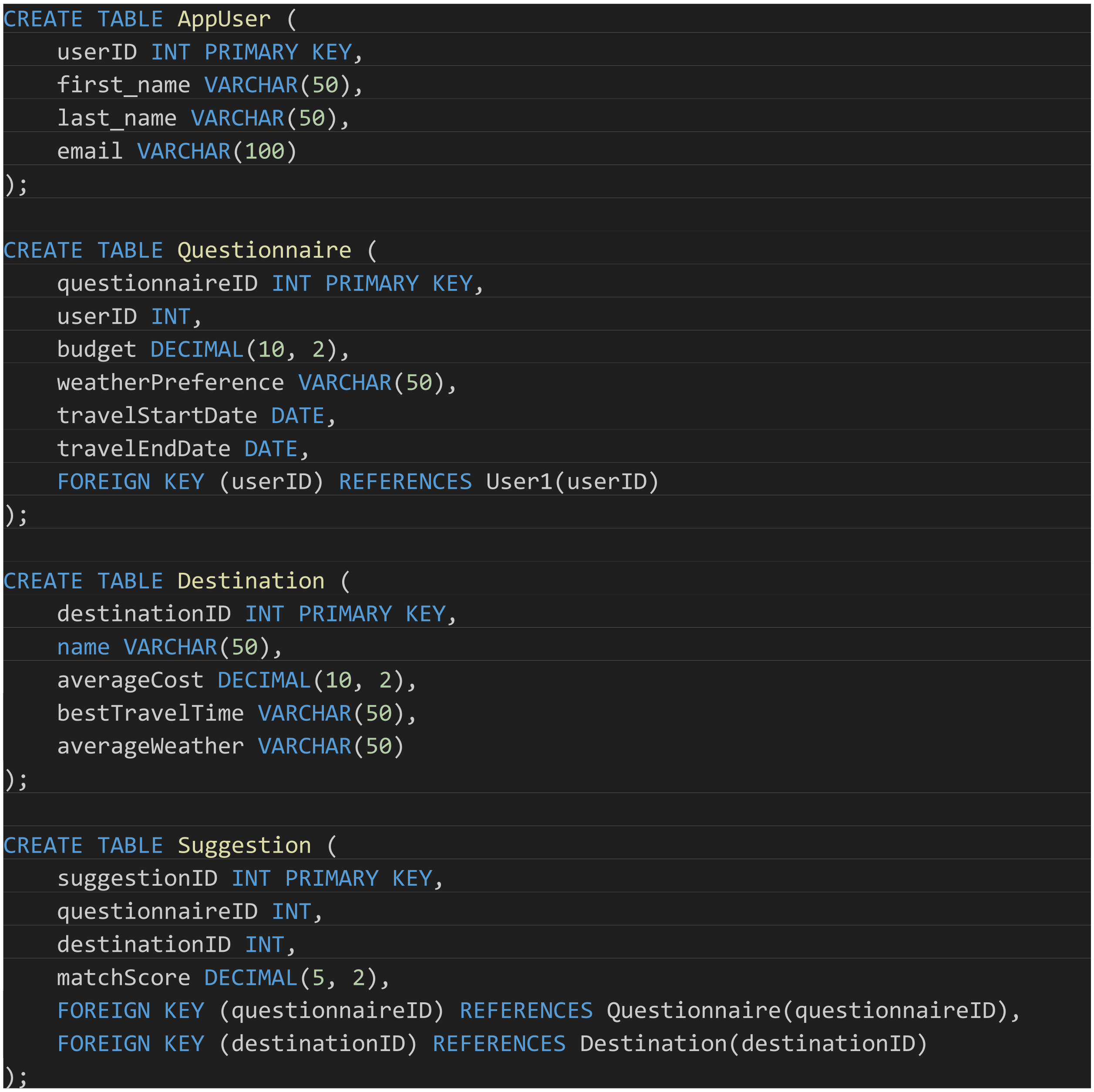
1.3. Working Mechanism

- Users register and login.
- Users fill out a questionnaire detailing their travel preferences.
- Our application will process this data and compare it with the attributes of various travel destinations. Based on matching criteria (like budget, preferred weather, and travel dates), the application generates a score for each destination for the specific user. The destinations with the highest scores will be suggested to the user, which will be saved as *Suggestion* entities linked to the specific *Questionnaire* entity.

2. Entity Relationship Diagram



3. Source Code



```sql
CREATE TABLE AppUser (
    userID INT PRIMARY KEY,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    email VARCHAR(100)
);

CREATE TABLE Questionnaire (
    questionnaireID INT PRIMARY KEY,
    userID INT,
    budget DECIMAL(10, 2),
    weatherPreference VARCHAR(50),
    travelStartDate DATE,
    travelEndDate DATE,
    FOREIGN KEY (userID) REFERENCES User1(userID)
);

CREATE TABLE Destination (
    destinationID INT PRIMARY KEY,
    name VARCHAR(50),
    averageCost DECIMAL(10, 2),
    bestTravelTime VARCHAR(50),
    averageWeather VARCHAR(50)
);

CREATE TABLE Suggestion (
    suggestionID INT PRIMARY KEY,
    questionnaireID INT,
    destinationID INT,
    matchScore DECIMAL(5, 2),
    FOREIGN KEY (questionnaireID) REFERENCES Questionnaire(questionnaireID),
    FOREIGN KEY (destinationID) REFERENCES Destination(destinationID)
);
```

4. Project Members and Github Repository

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- Github repository: https://github.com/Moody162/Travel-Guide/tree/main