

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

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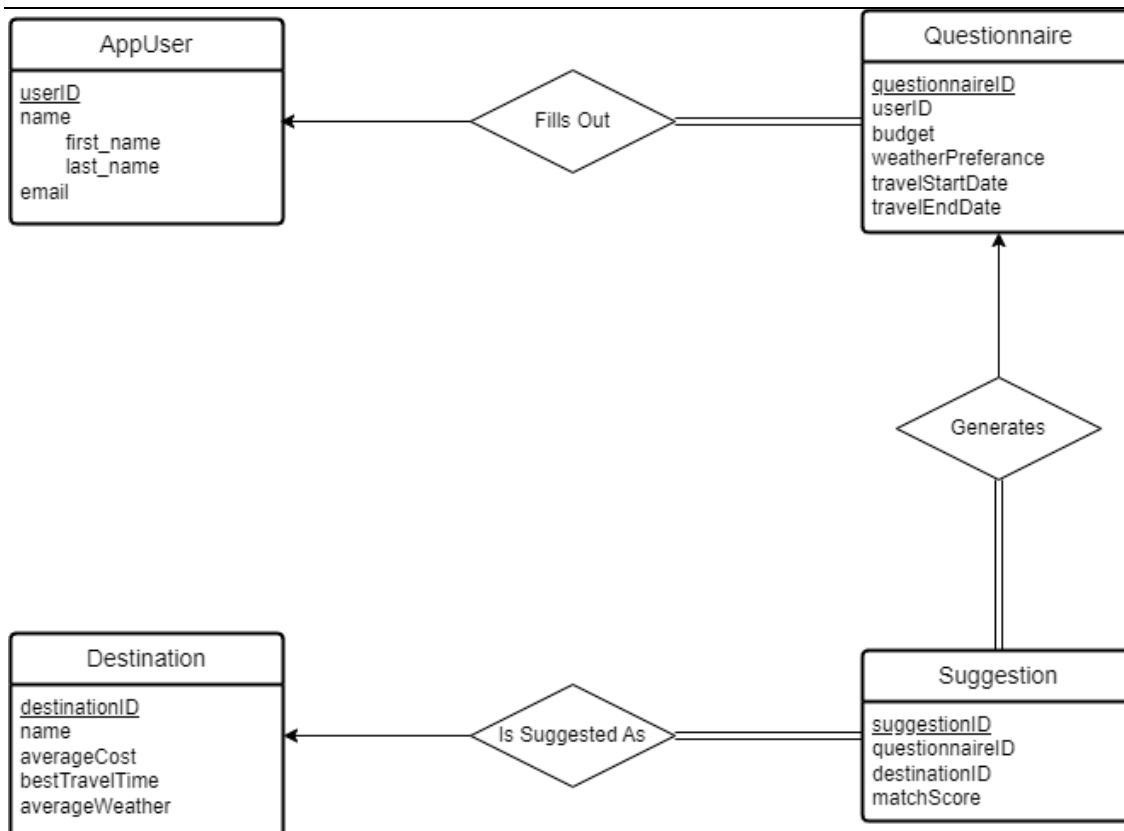
1.2. Relationships

- 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



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3. Source Code

```
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

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