Travel Guide Application

Index

1. Entity Relationship Description and Application Basic Structure

1.1. Entities

- Client
  - Represents each user who registers on the application.
  - **Attributes**: client_id (PK), first_name, last_name, email, password
- Destination
  - Represents each travel destination.
  - **Attributes**: destination_id (PK), name, average_cost, best_travel_time, average_weather
- Questionnaire
  - Represents each set of answers provided by the user.
  - **Attributes**: questionnaire_id (PK), client_id (FK), budget, weather_preference, travel_start_date, travel_end_date
- Suggestion
  - Represents travel destination suggestions for each user.
  - **Attributes**: suggestion_id (PK), questionnaire_id (FK), destination_id (FK), match_score

Travel Guide Application

1.2. Relationships

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

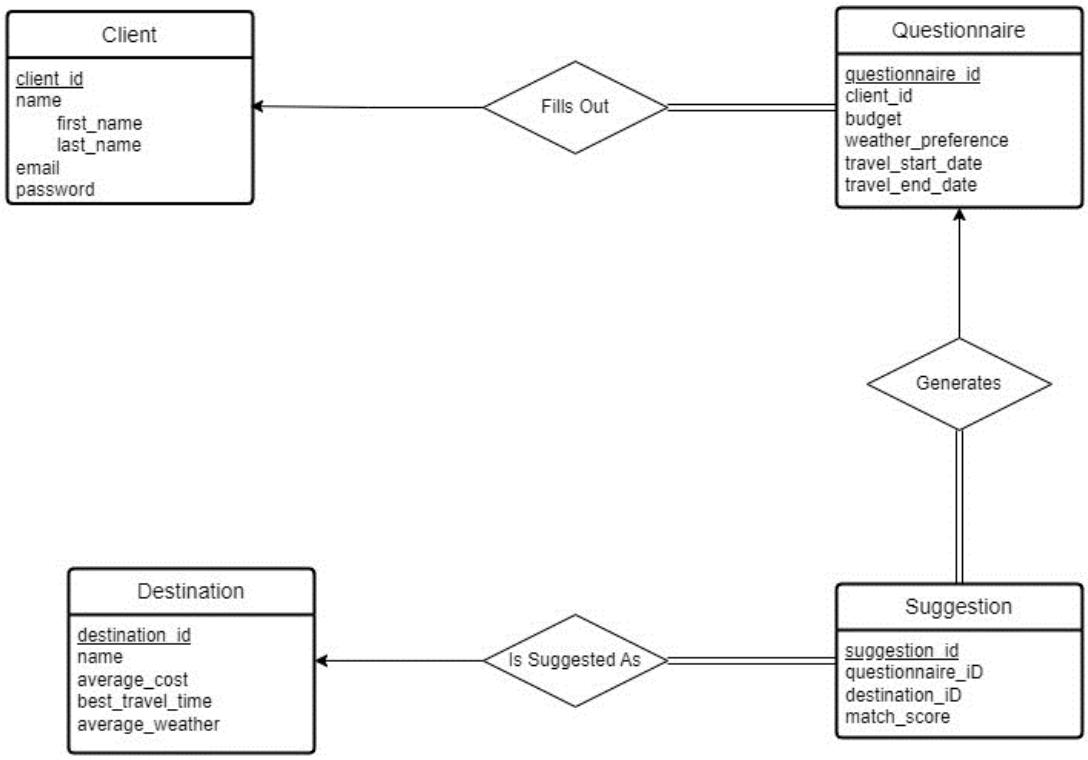
- Questionnaire – Suggestion (Generates)
  - One-to-Many from *Questionnaire* to *Suggestion*: based on a single questionnaire, multiple travel suggestions can be generated. Each suggestion corresponds to exactly one questionnaire.

- 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



Travel Guide Application

3. Source Code: Relational Schema

```sql
CREATE TABLE client (
    client_id SERIAL PRIMARY KEY,
    first_name VARCHAR(255) NOT NULL,
    last_name VARCHAR(255) NOT NULL,
    email VARCHAR(255) NOT NULL UNIQUE,
    password VARCHAR(255) NOT NULL
);

CREATE TYPE temperature_preference AS ENUM ('Freezing', 'Cold', 'Cool', 'Mild',
'Warm', 'Hot', 'Very Hot');

CREATE TABLE questionnaire (
    questionnaire_id SERIAL PRIMARY KEY,
    client_id INT NOT NULL,
    budget DECIMAL(10, 2),
    weather_preference temperature_preference,
    travel_start_date DATE,
    travel_end_date DATE,
    FOREIGN KEY (client_id) REFERENCES client(client_id),
    CHECK (travel_end_date > travel_start_date)
);

CREATE TABLE destination (
    destination_id SERIAL PRIMARY KEY,
    name VARCHAR(255) NOT NULL,
    average_cost DECIMAL(10, 2), -- average cost per day
    best_travel_time VARCHAR(255), -- Stores lists like "January,February,March"
    average_weather temperature_preference
);

CREATE TABLE suggestion (
    suggestion_id SERIAL PRIMARY KEY,
    questionnaire_id INT NOT NULL,
    destination_id INT NOT NULL,
    match_score DECIMAL(5, 2),
    FOREIGN KEY (questionnaire_id) REFERENCES questionnaire(questionnaire_id),
    FOREIGN KEY (destination_id) REFERENCES destination(destination_id)
);
```

4. Project Members and Github Repository

- Mohamad Dib Fares (A20482852)
- Hamza Taheir Bu Obaid (A20500711)
- Mehal Gosalia (A20484633)
- Rajdeep Singh Konthoujam (A20493036)

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