Database Design Documentation

Database Choice

We chose PostgreSQL as our database management system due to the following reasons:

1) Relational Integrity: PostgreSQL enforces strong referential integrity with constraints, ensuring consistency.
2) Scalability: It supports large datasets and is highly optimized for querying and indexing.
3) AWS RDS Compatibility: PostgreSQL is used with AWS RDS, providing automated backups, performance monitoring, and high availability.
4) Security: PostgreSQL includes robust access control and auditing mechanisms.

Normalization

Our database follows 3rd Normal Form (3NF) to eliminate redundancy and ensure data integrity. Key benefits:

1) Minimization of duplicate data.
2) Efficient updates and reduced anomalies.
3) Structured relationships between refugee, student, and service-related entities.

Introduction

This document outlines the database design for the Thrive International website, focusing on three intake forms: "Thrive Intake Form", "New Student Registration Form", and "Community Outreach and Education Form". The database is designed to store and manage data collected from these forms, ensuring data integrity, relationships, and constraints are properly enforced.

Entity-Relationship (ER) Diagram

The ER Diagram illustrating the entities, relationships, primary keys, foreign keys, and constraints is attached as ER-Diagram.pdf

Entities and Relationships

1. Refugee

- **Description**: Stores core information about refugees.
- **Primary Key**: `refugee_id`
- **Attributes**:
  - `first_name`, `last_name`, `date_of_birth`, `gender`, `country_of_origin`, `phone_number`, `email`, `address`
- **Relationships**:

- One-to-One with `Student`, `CommunityOutreach`
- One-to-Many with `ImmigrationStatus`, `ServicesNeeded`, `HouseholdMembers`, `ProgramEligibility`

2. Student

- **Description**: Stores information about students registered in programs.
- **Primary Key**: `refugee_id` (Foreign Key referencing `Refugee`)
- **Attributes**:
  - `full_name`, `address`, `gender`, `school`, `current_grade`, `languages_spoken`, `country_of_origin`, `parent_name`, `parent_languages_spoken`, `parent_phone_number`, `parent_email`, `preferred_contact_method`
- **Relationships**:
  - One-to-One with `Refugee`
  - One-to-Many with `LiabilityAgreements`

3. CommunityOutreach

- **Description**: Stores information about participants in community outreach programs.
- **Primary Key**: `refugee_id` (Foreign Key referencing `Refugee`)
- **Attributes**:
  - `first_name`, `middle_name`, `gender`, `country_of_origin`, `preferred_language`, `phone_number`, `email`, `street_address`, `city`, `zip_code`, `state`, `county`, `mailing_address`, `same_as_residential`, `dshs_client_id`, `alien_number`, `is_head_of_household`, `relationship_to_head`
- **Relationships**:
  - One-to-One with `Refugee`
  - One-to-Many with `ServicesProvided`

4. ImmigrationStatus

- **Description**: Stores immigration status details for refugees.
- **Primary Key**: `id`
- **Attributes**:
  - `refugee_id` (Foreign Key referencing `Refugee`), `status`, `asylum_date_granted`, `eligibility_date`
- **Relationships**:
  - Many-to-One with `Refugee`

5. ServicesNeeded

- **Description**: Stores services required by refugees.
- **Primary Key**: `id`
- **Attributes**:
  - `refugee_id` (Foreign Key referencing `Refugee`), `service_type`
- **Relationships**:
  - Many-to-One with `Refugee`

6. ServicesProvided

- **Description**: Stores services provided to participants in community outreach programs.
- **Primary Key**: `id`
- **Attributes**:
  - `outreach_id` (Foreign Key referencing `CommunityOutreach`), `service`, `date_of_service`, `next_step`, `notes`
- **Relationships**:
  - Many-to-One with `CommunityOutreach`

7. HouseholdMembers

- **Description**: Stores information about household members of refugees.
- **Primary Key**: `id`
- **Attributes**:
  - `refugee_id` (Foreign Key referencing `Refugee`), `name`, `date_of_birth`, `relationship`, `immigration_status`, `intake_eligibility_needs`
- **Relationships**:
  - Many-to-One with `Refugee`

8. ProgramEligibility

- **Description**: Stores eligibility criteria for program participation.
- **Primary Key**: `id`
- **Attributes**:
  - `refugee_id` (Foreign Key referencing `Refugee`), `receiving_services`, `age_over_16`, `lives_in_washington`, `arrived_after_july_2021`, `approved_immigration_status`, `eligible_for_services`, `immigration_status_copy`, `consent_form_completed`, `release_form_completed`
- **Relationships**:
  - Many-to-One with `Refugee`

9. LiabilityAgreements

- **Description**: Stores liability agreements signed by students or their guardians.
- **Primary Key**: `id`
- **Attributes**:
    - `student_id` (Foreign Key referencing `Student`), `insurance_liability`, `insurance_liability_signature`, `waiver_and_release`, `waiver_and_release_signature`, `media_release`, `media_release_signature`
- **Relationships**:
    - Many-to-One with `Student`

Constraints

1. **Primary Keys**: Each table has a primary key to uniquely identify records.
2. **Foreign Keys**: Relationships between tables are enforced using foreign keys with `ON DELETE CASCADE` to maintain referential integrity.
3. **Data Types**: Appropriate data types are used to ensure data integrity (e.g., `DATE` for dates, `BOOLEAN` for true/false values).

Conclusion

This database design ensures efficient storage and retrieval of data from the three intake forms. The ER Diagram and table structures provide a clear blueprint for implementation, ensuring data consistency and scalability.