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Collection Connection Database Design

Database Technology - Relational Database

For the project, I will be using a relational database. I have chosen this technology as my application for the following reasons. The database will be frequently updated as users can add and remove items from their collection list as they need. The data and tables within my database are highly related with one another and the user as the database keeps track of which users have what collection and what items are within each collection. Within the database, many-to-many relationships exist. The user can have many collections and the collections can be assigned to more than one user. I have decided to use PostgreSQL as the actual technology for my database as it is an object-relational database.

Based on the data that my application contains and the functionality of my application, I will be primarily using arrays. The users will each have collections which are simply arrays. The collection array contains each item of the collection and the item itself is another array which contains information about the item. In addition to using arrays in this way, I will be using SQL to manipulate my data and search my data stored in the database.

There is a search function that users can use to find items in their collection. They search via the items name and the database is queried based on what they are trying to find.

Entity-Relationship Diagram

The ER diagram to the right shows each of my database tables and their relationship to other tables within the database. The users are primary users that create accounts and store their lists in the application. They have read and write access to the database. When they share their list to another individual via email, that user will only have read access. The user table stores the user account information. The user collection table stores which collections belong to which user. The collection table stores the collection name and ID. The collection items table stores the items that belong to the collection along with their information and which collection they are a part of. There is a bridge table between these two, the itemsInCollection table, that keeps track of which items belong to which collection.