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Project Milestone Four

- **Database Software, and Database Creation Scripts**
  - The database itself is created using the following SQL script executed directly in the terminal:

```sql
CREATE DATABASE bchat;
CREATE USER 'bchatadmin'@'localhost' IDENTIFIED BY 'adminbchat';
GRANT ALL PRIVILEGES ON bchat.* TO 'bchatadmin'@'localhost';
```

This is done in order for Laravel to connect to the database. However, after this, no DBMS is needed and writing SQL directly is no longer needed. This is because Laravel uses a system called migrations. Migrations essentially act as a Git repository for databases. Each migration has a date attached to it and the associated PHP functions that perform the migration function. For example, consider the very first migration:

```php
/**
 * Run the migrations.
 *
 * @return void
 */
public function up()
{
    Schema::create('users', function (Blueprint $table) {
        $table->increments( column: 'id');
        $table->string( column: 'name');
        $table->string( column: 'email')->unique();
        $table->timestamp( column: 'email_verified_at')->nullable();
        $table->string( column: 'password');
        $table->rememberToken();
        $table->timestamps();
    });
}

/**
 * Reverse the migrations.
 *
 * @return void
 */
public function down()
{
    Schema::dropIfExists('users');
}
```

This migration has an up and down function. The up function perform the migration, and the down function reverses it, which provides the "version control"-esque system for migrations since migrations run one after the other in order to bring the database to the "master" state. The up function for this migration creates the users table with the required column shema. All of the remaining migration scripts are located here: https://github.com/lukemcd1994/bChat/tree/master/database/migrations
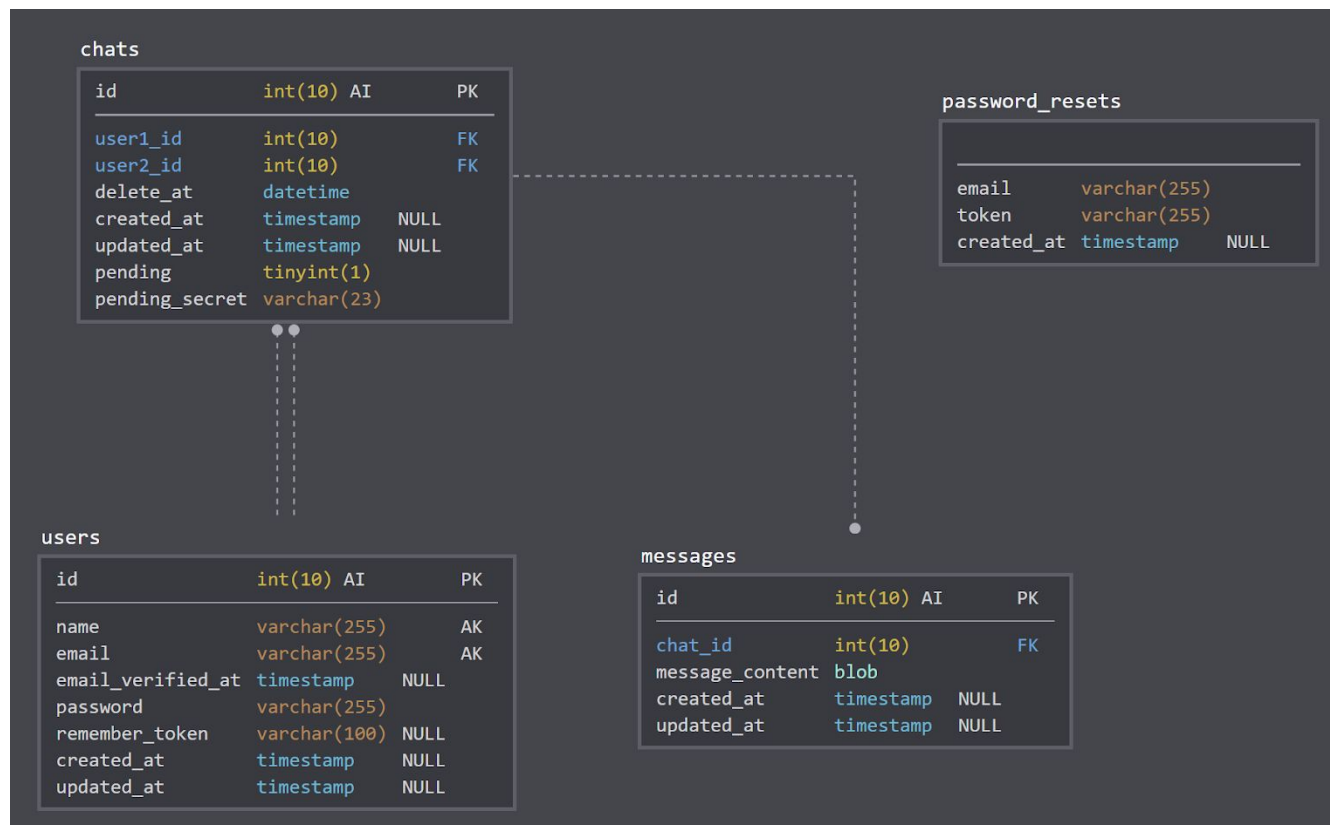
The SQL script to populate the database with sample data is found here: https://github.com/lukemcd1994/planb-milestones/blob/master/bchat.sql

● **Data Model**

The current data model (barring any new features) is shown below:

  ○ PK refers to primary key
  ○ FK refers to foreign key
  ○ AK refers to an alternate key that must be unique within the table
  ○ The dotted line with the circle at one end represents a one-to-many relationship