

Project Report

Models Description

The schema defines four main classes: **`User_product`**, **`User`**, **`Product`**, and **`Category`**. Let me describe each of these classes:

1. **`User_product`**:

- This class represents the many-to-many relationship between users and products in the database.
- The **`id`** field is an auto-incrementing primary key, uniquely identifying each user-product relationship.
- The **`user_id`** field is a foreign key that references the primary key of the **`User`** table, establishing a link between users and the relationship.
- The **`product_id`** field is a foreign key that references the primary key of the **`Product`** table, establishing a link between products and the relationship.

2. **`User`**:

- This class represents the user entity in the database.
- The **`id`** field is an auto-incrementing primary key, uniquely identifying each user.
- The **`username`** field is a non-null and unique string that stores the username of the user.
- The **`password`** field is a string that stores the user's password, limited to 8 characters in this implementation.
- The **`email`** field is a string that stores the user's email address, and it must be unique for each user.
- The **`products`** field defines a many-to-many relationship with the **`Product`** table, utilizing the **`user_product`** association table to link users with their products.

3. **`Product`**:

- This class represents the product entity in the database.
- The **`id`** field is an auto-incrementing primary key, uniquely identifying each product.
- The **`name`** field is a string that stores the name of the product, limited to 50 characters.
- The **`price`** field is a float that stores the price of the product.
- The **`expdate`** field is a string that stores the expiration date of the product and is marked as non-nullable.
- The **`quantity`** field is an integer that stores the quantity of the product, and it is marked as non-nullable.
- The **`ms`** field is a string that likely stores additional information about the product.
- The **`desc`** field is a string that stores a brief description of the product, limited to 100 characters.
- The **`category_id`** field is a foreign key that references the primary key of the **`Category`** table, establishing a link between products and their respective categories.

4. **`Category`**:

- This class represents the category entity in the database.
- The **`id`** field is an auto-incrementing primary key, uniquely identifying each category.
- The **`name`** field is a non-null string that stores the name of the category. It is marked as unique, ensuring each category has a unique name.
- The **`c_item`** field defines a one-to-many relationship with the **`Product`** table, indicating that each category can have multiple associated products.

