Project Phase III

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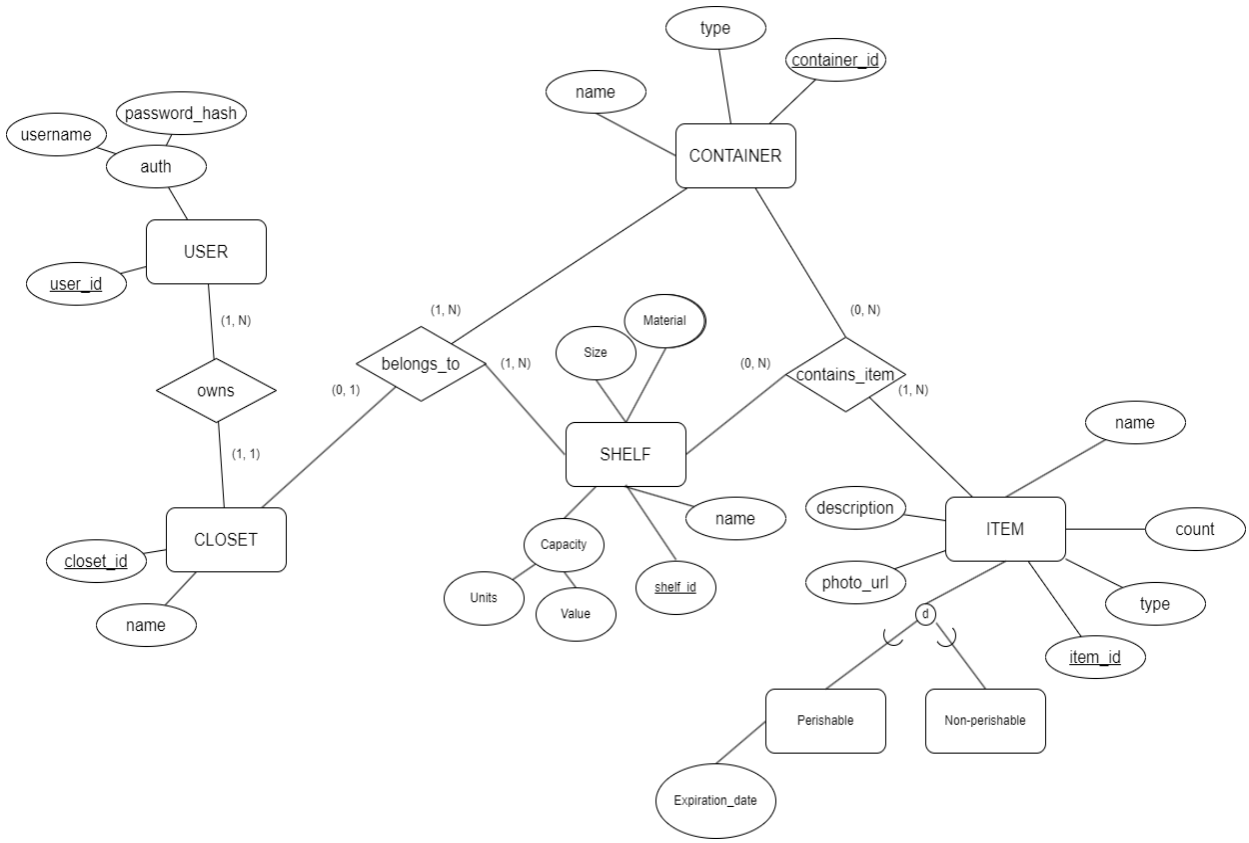
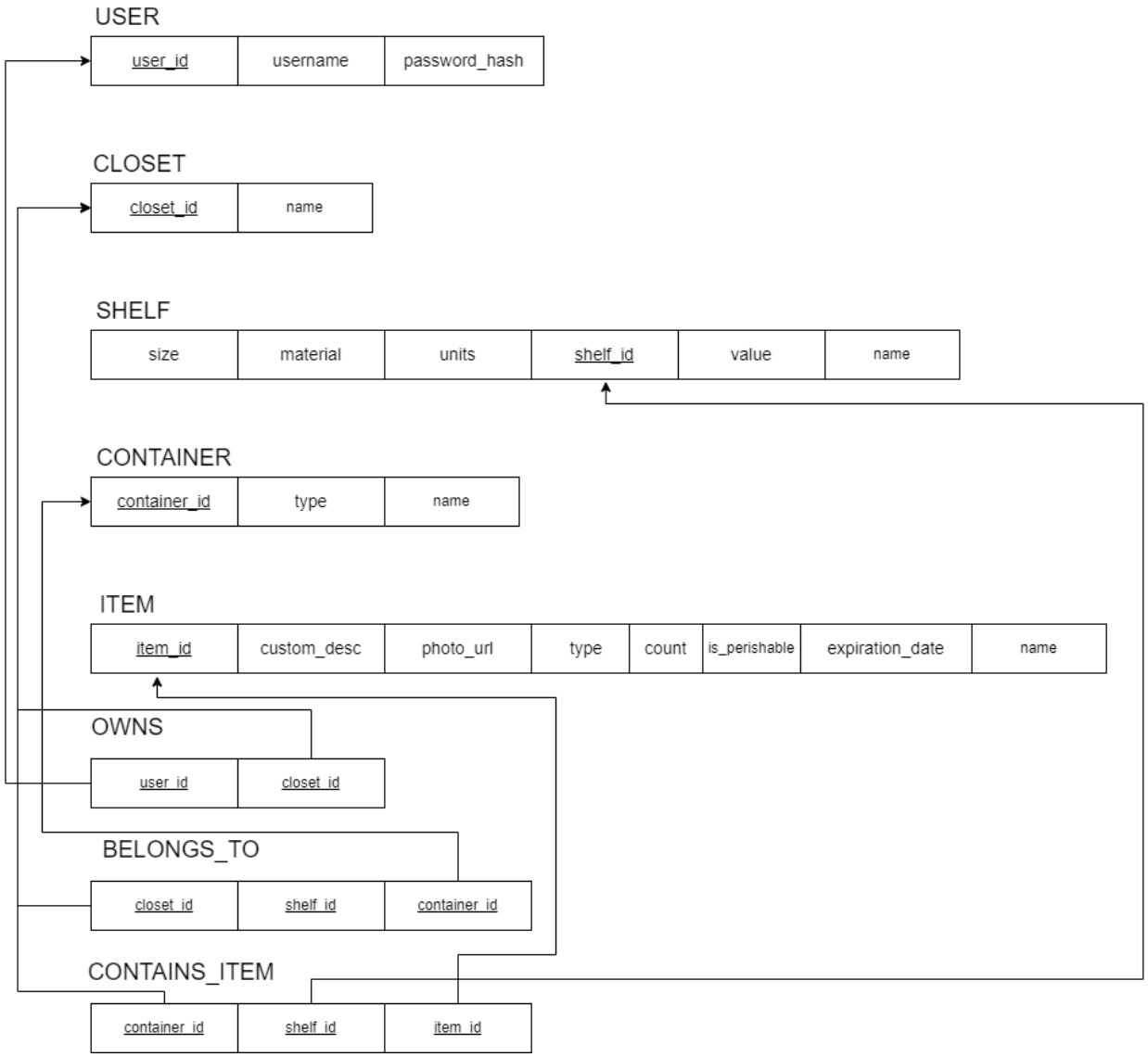
1. Problem Statement

Our project idea is a cloud-based closet management management tool. The purpose is to aid individuals and organizations by providing a way to keep track of what items their closets contain, and where they are located within containers within the closets. A secondary goal of the project is to gather a list of items and the information about them that is searchable and sortable by category, container, count, etc.. Entities are items, containers (like tubs, drawers, cabinets, etc.), closet, user (since once instance of the service may be used by multiple people and organizations), and other more complex attributes of an item may need to be entities.

2. Conceptual Database Design



3. Logical Database Design



4. Application Program Design

4.1 Adding information

```
Function 1: add_item

// Create an item and add it to a shelf or container.
// Accesses the “items” and “contains_item” tables.
Input: shelf or container ID,
       item type name,
       initial count (default: 1),
       description (default: NULL), URL to a photo of the item
(default: NULL),
       expiration date (signifies the item is a Perishable type item)
(default: NULL)
   (1)  If this item exists in the specified container or shelf
      already, increment the existing item’s count and return.
   (2)  Generate a new item ID.
   (3)  Insert this item into the database.
   (4)  Insert the shelf or container ID into a new CONTAINS_ITEM
      relation:
         (a)  If a shelf ID was provided, the container ID will be
            NULL, and vice versa.
         (b)  Insert the item ID, shelf ID, and container ID into the
            relation.
   (5)  Update the interface to display the new item’s information
      and picture.
```

```
Function 2: add_container

// Create a container and add it to a shelf or closet.
// Accesses the “containers” and “belongs_to” tables.
Input: shelf or closet ID,
       container type name
   (1)  Generate a new container ID.
   (2)  Insert the container into the “containers” table.
        (a)  If this type of container already exists, add a new one
           with a different ID.
   (3)  Insert the container ID and shelf or closet ID into a new
      BELONGS_TO relation:
         (a)  If a shelf ID was provided, the closet ID will be NULL,
            and vice versa.
         (b)  Insert the container ID, shelf ID, and closet ID into
            the relation.
```

Function 3: add_shelf

```
//create a new shelf and add it to a closet
//accesses “shelf” and “closet” tables
Input: closet_id, name
   (1)  Generate a new shelf id.
   (2)  Insert the new shelf id into the “shelf” table.
        (a)  If a shelf with the same name already exists, reject
           and tell the user to pick a new name.
   (3)  Insert the shelf_id and closet_id into a new entry within the
      belongs_to relation
```

Function 4: add_closet

```
// Create a new closet and add it to a user.
// Accesses the “closets” and “owns” tables.
Input: closet name,
       owner user ID
   (1)  If a closet with this name already exists for this user,
      throw an error.
   (2)  Generate a new closet ID.
   (3)  Insert the closet into the “closets” table.
   (4)  Insert the closet ID and user ID into the “owns” table.
```

Function 5: add_user

```
// Create a new user.
// Accesses the “users” tables.
Input: username,
       password
   (1)  If a user with this username already exists, throw an error.
   (2)  Generate a new user ID.
   (3)  Generate a hash from the password.
   (4)  Insert the user’s information into the “users” table.
```

5. Installation Instructions

The intended operating system is Linux but install will still have access to a Linux environment or terminal on your current operating system (such as git bash or WSL for windows). First, clone the git repository into the desired directory. Then, open up the terminal (or a git bash, wsl, or other Linux subsystem) and navigate to the directory where the git repository is located. Once inside the repository, navigate to the folder with “package.json” in it (if you are not already) and run `npm install` and wait for the installation to finish.

6. User Manual

Entering the Dashboard
Once on the webpage, you will first need to login. If you do not have an account yet, you will need to create an account. Otherwise, simply enter in your credentials and you will be taken to your dashboard. Once inside the dashboard, you will see a brief summary of your closet. This includes a list of your shelves, containers, and items.

Adding items/shelves/containers
Adding items can be done from the main dashboard screen. Simply refer to the banner and there will be buttons for adding either a shelf, item, or container.

Seeing information about items
Clicking on an item from any screen should pull up information and data about the item.

Seeing information about containers
Clicking on a container from the dashboard screen will bring up the container as well as all the items currently stored within said container.