

Name: Name'); DROP TABLE teams;--

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Project Title:

SMART REFRIGERATOR DATABASE SYSTEM

Project Description:

The aim of this project is to design a system and a database that in tandem will store the state of a refrigerator. The database has information about the items in the refrigerator within the refrigerator. It also stores information about meals that can be prepared based on the current ingredients.

Additional Feature for System

- Rating system [1]
- Post-it notes/ memos [2]
- User Access log

Schema:

Tables	Attributes
User	User_id, username, password, fname, lname, email, chef_flag, admin_flag
Ingredient	ingredient_id, name, category, quantity, unit, price, order_threshold, ☺is_requested, time_added, time_modified,
Meal	meal_id, name, cuisine_id, description, time_added, time_modified, avg_rate, num_rates
post_notes	Post_id, user_id, content, time_added, time_modified
Orders	Order_id, meal_id, user_id, time_ordered, is_completed, order_amount, time_added, time_modified
Rating	meal_id, user_id, score, time_added
Requests	request_id, user_id, ingredient_id, is_fulfilled, request_amount, time_added, time_modified
Report_Details	report_id, user_id(built in), time_requested, report_description
User_Access	access_id, user_id, query_descrtion, time_added, time_modified
Cuisine_Type	cuisine_id, name, country_of_origin, description, time_added, time_modified
Meal_Ingredients	meal_id, ingredient_id, quantity, time_added, time_modified

Assumptions:

- We will use Postgre's built in user management to store our users and their permissions.
- Orders can only be comprised of ingredients that exist in the DB and administrators can add new ingredients.
- Chefs can only request ingredients that exist in the DB however chefs can request new ingredients, these ingredients can't be used until administrators approve and get the new ingredients. The is_requested attribute of Ingredient is used to show if an ingredient in the DB is a new ingredient that has been requested or an existing ingredient.

- Order queue is derived from the order relation using the is_completed flag to determine if the order should be in the queue or not.
- If a order in the order queue cannot be completed due to lack of ingredients. The chef will request the missing ingredients required to complete the order if such a request has not been made. Then the chef can attempt to complete the next order. After a order is completed the chef returns to the beginning of the queue. The chef then repeats this process. Thus ensuring that if the ingredients for a request have arrived then that order will be completed.
- Post-it notes can only be deleted or updated by administrators or the user who posted it
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DML Examples:

Selecting ingredients for meals:

```
SELECT i.*
FROM ingredient i, Meal_Ingredients mi, Meal m
WHERE mi.ingredient_id == m.meal_id
```

Generating the order queue

```
SELECT *
FROM orders
WHERE is_completed == false
ORDERBY time_added
```

Creating an order

```
INSERT INTO (meal_id, time_ordered, order_amount)
VALUES (...)
```

Triggers and Assertions:

- When an ingredient is below a certain threshold notify the Administrator.
- When a user accesses the table, insert a row to the user_access table
- Whenever a new rating is inserted into the rating table or a rating is updated the meal that is being rated must have its rating recalculated.
- When inserting a request, check if the user is an admin else reject the request
- After a request is completed add the ingredients to the fridge

References

[1] SAMSUNG, "Family hub refrigerator," 2017. [Online]. Available: <http://www.samsung.com/us/explore/family-hub-refrigerator/>. Accessed: Feb. 17, 2017.

[2] S. McNerney, "Smart fridge manages your grocery list and monitors food freshness," PSFK, 2012. [Online]. Available: <http://www.psfk.com/2012/01/samsung-smart-fridge.html>. Accessed: Feb. 17, 2017.