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INFSCI 1599

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**Introduction/Abstract**

MealDeals

This database aims to track different recipes saved by a user and tell if a user has the ingredients to make the recipe. It can then tell the user which stores nearby have the needed ingredients to make each recipe.

The target audience of this database is college students who are just learning how to cook. For this demographic, it often can be hard to learn how to cook as the process of cooking, along with purchasing needed ingredients and properly managing their pantry can be overwhelming. Especially when coupled with the stress of classes, many students chose to eat at restaurants or buy snacks. These operate at a large mark up (Restaurants operate at an average 300% markup), leading to a massive waste in money.

Using this tracker can have many benefits. The most obvious one is the save in cost from cooking over eating out. Having an app that can tell the user what to use in their pantry can also reduce food waste, thus reducing needless spending by the user and helping the environment. Giving people a more direct relationship with the food they eat also has a variety of mental health benefits.

This project will use SQL and Python, including libraries MyPySql, Flask, json, and UUID.

**E-R Model**

Diagram

Description automatically generated

**Business Rules**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name 1** | **Name 2** | **Diagram** | **Cardinality on Entity 1 Side** | **Cardinality on Entity 2 Side** | **Rule Description** |
| user | recipe | Graphical user interface, text, application, chat or text message  Description automatically generated | 1..\* | 1..\* | A user can favorite as many recipes as they chose, and recipes can be favorited by many users. |
| user | fridge | A picture containing graphical user interface  Description automatically generated | 1..\* | 1..1 | A user can have as many fridges as they want. This can be useful if a user lives in two different places or wants to keep different sets organized. The user must input the amount of each ingredient, even if it is 0 |
| recipe | steps | A picture containing table  Description automatically generated | 1..\* | 1..1 | Steps must be entered in order they occur. A step also must be unique to each recipe for the queries to work. |
| recipe | ingredient | Graphical user interface, application  Description automatically generated | 1..\* | 1..1 | This relationship and the one above exist to maintain first normal form. A recipe will end up with many ingredients. |
| fridge | ingredient | A picture containing table  Description automatically generated | 1..1 | 1..\* | One ingredient can exist in many fridges, but a fridge can only have one record of each ingredient in it, hence the existence of amount. |
| ingredient | store | Graphical user interface, text, application, Excel  Description automatically generated | 1..\* | 1..\* | Each store can have many different ingredients, and each ingredient can be in many stores. The stock of each ingredient in a store is tracked by store\_inventory. |

**Entity/Attribute**

user

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_user | INT (auto-increment) | Primary key of the table |
| user\_name | VARCHAR(45) | Display name for the user |
| joined\_date | DATETIME(6) | Date the user joined |
| first\_name | VARCHAR(45) | User’s first name |
| last\_name | VARCHAR(45) | User’s last name |

favorites

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_favorites | INT (auto-increment) | Primary key of the table |
| fk\_user | INT | Foreign key for user |
| fk\_recipe | INT | foreign key for recipe |

fridge

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_fridge | INT (auto-increment) | Primary key of the table |
| fk\_user | INT | foreign key for user |
| fk\_ingredient | INT | foreign key for ingredient |
| amount | INT | amount of the specified ingredient within this fridge |

recipe

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_recipe | INT (auto-increment) | Primary key of the table |
| name | VARCHAR(45) | name of the recipe |
| serving\_size | INT | How many servings of this are in a meal |
| cooking\_time | INT | How long does it take to cook this meal |
| makes | VARCHAR(45) | How many individual things this recipe makes (such as slices of pizza) |

steps

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_steps | INT (auto-increment) | Primary key of the table |
| fk\_recipe | INT | foreign key for the recipe this belongs to |
| step\_description | VARCHAR(45) | instructions for the step |

ingredient

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_ingredient | INT (auto-increment) | Primary key of the table |
| fk\_recipe | INT | foreign key from recipe |
| unit\_price | INT | individual cost for this ingredient |
| refrigerated | TINYINT | Boolean value for if this ingredient needs to be refrigerated |
| name | VARCHAR(45) | Name of the ingredient |

store\_inventory

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_store\_inventory | INT (auto-increment) | Primary key of the table |
| fk\_ingredient | INT | foreign key for ingredient |
| fk\_store | INT | foreign key for stock |
| stock | INT | how much does the given store have of this ingredient |

store

|  |  |  |
| --- | --- | --- |
| Name | Datatype | Description |
| pk\_store | INT | Primary key of the table |
| name | VARHCHAR(45) | name of the store |
| address | VARCHAR(45) | address of the store |
| hours | VARCHAR(45) | hours the store is open, for example “9-5” or “24/7” |
| employee\_count | VARCHAR(45) | how many employees work at this store |

**Queries:**

1: Shows if the user has the ingredients to make a specified meal

“Can I make scrambled eggs?”

Text

Description automatically generated

Graphical user interface, application

Description automatically generated

2: Cost of making a recipe

“How much will it cost me to make scrambled eggs”

Text

Description automatically generated  
Graphical user interface, text, application

Description automatically generated with medium confidence

3: Details on a store

“When and where can I got to Target”

A picture containing text

Description automatically generated

A picture containing text

Description automatically generated

4: Stores that have more than 5 ingredients

“I am unsure what specific thing I want. I want to go to go to a store with options”

Graphical user interface, text

Description automatically generated

5: Shows all saved ingredients and their availability or not in local stores

"What's the inventory of all local businesses"

Text

Description automatically generated

Table

Description automatically generated

6: Shows the contents of the user's fridge ordered by lowest to highest

"What ingredients am I low on"

Text, letter

Description automatically generated

Graphical user interface, table

Description automatically generated

7: How many of x ingredient do I have

"How many eggs do I have”

Graphical user interface, text

Description automatically generated

Graphical user interface, text

Description automatically generated with medium confidence

8: Call the steps of a recipe

"What are the steps of scrambled eggs"

Text

Description automatically generated

9: Call the ingredients of a recipe

"What are the ingredients in the traybake recipe"

Graphical user interface, application

Description automatically generated

10: Show a user profile

"What does my user profile look like”

Text

Description automatically generated

**Transaction:**

Deletes the user and their fridge contents.

Graphical user interface, text, application

Description automatically generated with medium confidence