10/10

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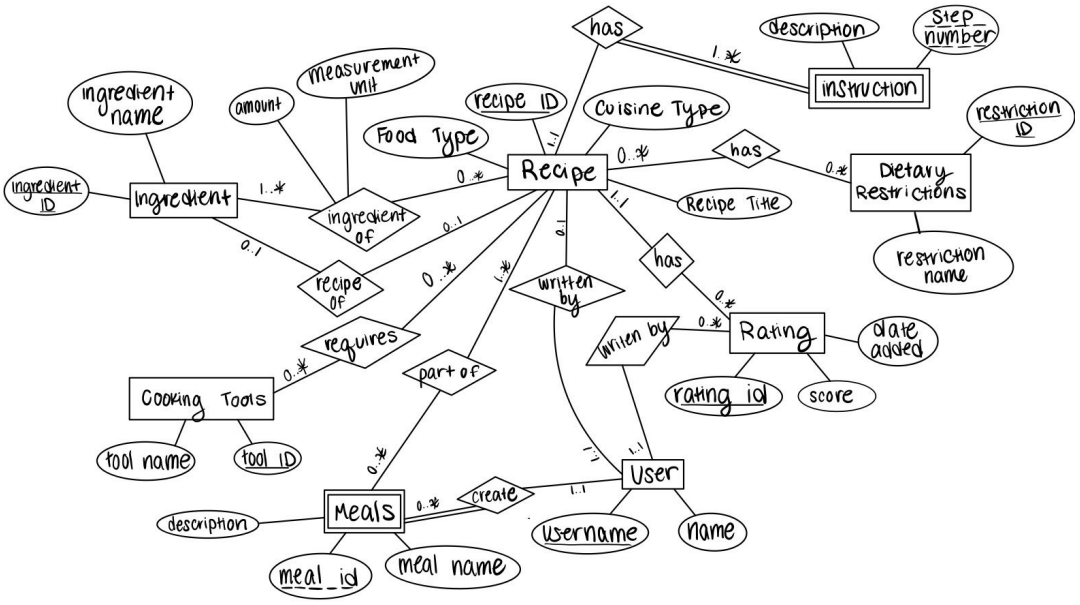
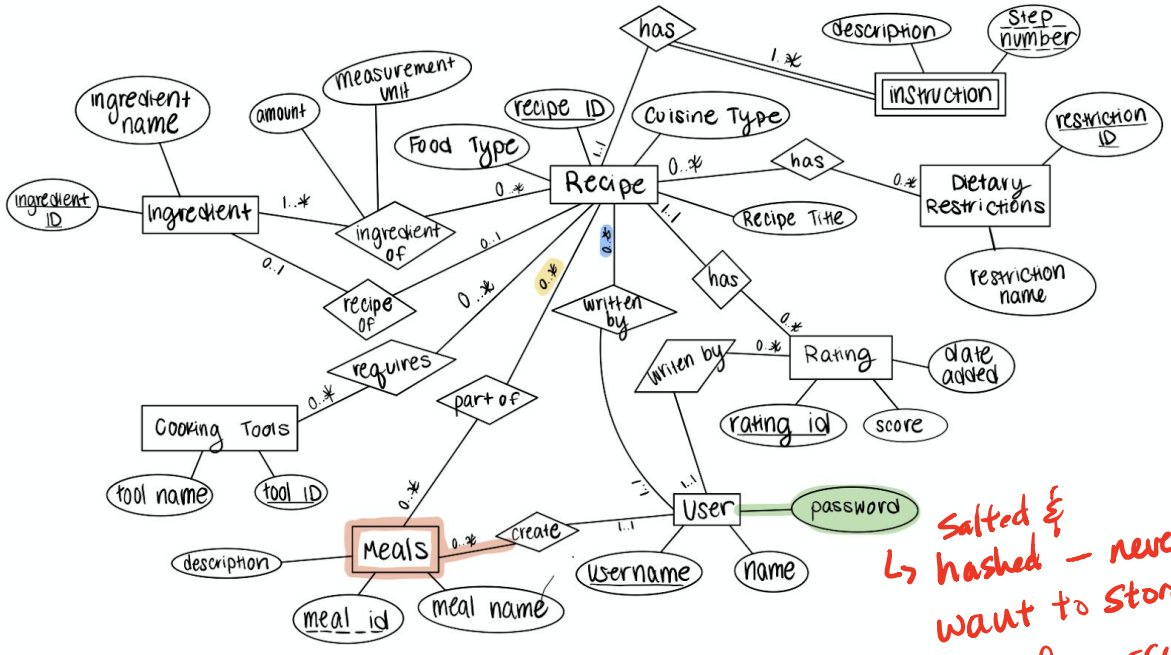
CPSC 321 - Databases
Project 3

Original ER Diagram:



Revised ER Diagram plus specifications:



Salted & hashed — never want to store actual passwd

Ingredient
Ingredient name must be unique
Ingredient ID will be auto-incrementing
If recipe is deleted, the ingredient it is a recipe of is not deleted, recipe is set to null (ON DELETE SET NULL constraint on recipe foreign key)

Cooking Tools
Tool name must be unique
Tool ID will be auto-incrementing

Meals
Meal ID is auto incrementing
Description can be NULL
Meal name must not be NULL
Meals are dependent on user (if user is deleted, so is meal)
Removed weak dependence on recipe, will add a deletion constraint instead
If recipe contained in meal is deleted, Meal still exists but without that specific recipe (ON DELETE SET NULL)
Changed cardinality constraint from 1..* to 0..* so that meal still exists if all recipes are deleted

User
Added password attribute
Password must not be NULL
Password must at least 8 characters long
Username must be at least 5 characters long
Name must not be null
Changed cardinality constraint from 0 .. 1 to 0 .. * for recipes (typo from last time)

Rating
If user is deleted, user is set to null (ON DELETE SET NULL)
Rating ID is auto-incremented
Score is not NULL
If corresponding recipe is deleted, rating is also deleted (ON DELETE CASCADE)

Dietary Restrictions
Restriction name must be unique

Instruction
Description is not null

Recipe
Recipe ID is auto increment

2. Translation

Entities:

Recipe(recipe_id, food_type, cuisine_type, recipe_title, username)
- username is a foreign key to User

Dietary Restriction(restriction_id, restriction_name)

Ingredient(ingredient_id, ingredient_name, recipe_id)
- recipe_id is foreign key to Recipe

CookingTool(tool_name,tool_id),

Meal(meal_id, meal_name, description, username)
- username is a foreign key to User

User(username, name, password)

Rating(rating_id, score,date_added, username, recipe_id)
- Username is a foreign key to User
- recipe_id is a foreign key to Recipe

Instruction(recipe_id, step_number, description)
- Recipe_id is a foreign key to Recipe

IngredientOf(recipe_id, ingredient_id, amount, measurement_units)
- Recipe_id is a foreign key to Recipe
- Ingredient_id is a foreign key to Recipe

CookingToolsRequried(tool_id, recipe_id)
- Tool_id is a foreign key to CookingTool
- recipe_id is a foreign key to Recipe

RecipeHasDietaryRestrictions(recipe_id, restriction_id)
- Recipe_id is a foreign key to Recipe
- restriction_id is a foreign key to DietaryRestriction

RecipesInMeals(meal_id, recipe_id)
- Meal_id is a foreign key to Meal
- recipe_id is a foreign key to Recipe

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/*-----------------------------------------------------------------------
 * Name: Anna Smith and Jalen Tacsiat
 * File: proj4.sql
 * Date: 10/22/2020
 * Class: CPSC 321 - Databases
 * Description: Create and insert statements for our recipes database
 -----------------------------------------------------------------------*/

-- required in MariaDB to enforce constraints
SET sql_mode = STRICT_ALL_TABLES;

DROP TABLE IF EXISTS RecipesInMeals;
DROP TABLE IF EXISTS RecipeHasDietaryRestrictions;
DROP TABLE IF EXISTS CookingToolsRequired;
DROP TABLE IF EXISTS IngredientOf;
DROP TABLE IF EXISTS Instruction;
DROP TABLE IF EXISTS Ingredient;
DROP TABLE IF EXISTS Rating;
DROP TABLE IF EXISTS Recipe;
DROP TABLE IF EXISTS Meal;
DROP TABLE IF EXISTS User;
DROP TABLE IF EXISTS CookingTool;
DROP TABLE IF EXISTS DietaryRestriction;

CREATE TABLE DietaryRestriction(
  restriction_id INT UNSIGNED AUTO_INCREMENT,
  restriction_name VARCHAR(50) UNIQUE NOT NULL,
  PRIMARY KEY (restriction_id)
);

CREATE TABLE CookingTool(
  tool_id INT UNSIGNED AUTO_INCREMENT,
  tool_name VARCHAR(50) UNIQUE NOT NULL,
  PRIMARY KEY (tool_id)
);

CREATE TABLE User(
  username VARCHAR(50) CHECK (LENGTHB(password) >= 5),
  name VARCHAR(50) NOT NULL,
  password VARCHAR(50) NOT NULL CHECK (LENGTHB(password) >= 8),
  PRIMARY KEY (username)
);

CREATE TABLE Meal(
  meal_id INT UNSIGNED AUTO_INCREMENT,
  meal_name VARCHAR(50) NOT NULL,
  description VARCHAR(100),
  username VARCHAR(50),
  PRIMARY KEY (meal_id),
  FOREIGN KEY (username) REFERENCES User(username) ON DELETE SET NULL
);

CREATE TABLE Recipe(
  recipe_id INT UNSIGNED AUTO_INCREMENT,
  food_type VARCHAR(30),
  cuisine_type VARCHAR(30),
  recipe_title VARCHAR(30) NOT NULL,
  username VARCHAR(50),
  PRIMARY KEY (recipe_id),
  FOREIGN KEY (username) REFERENCES User(username) ON DELETE SET NULL
```

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);

CREATE TABLE Rating(
  rating_id INT UNSIGNED AUTO_INCREMENT,
  score SMALLINT UNSIGNED NOT NULL CHECK (score <= 5),
  date_added DATE,
  username VARCHAR(50),
  recipe_id INT UNSIGNED NOT NULL,
  PRIMARY KEY (rating_id),
  FOREIGN KEY (username) REFERENCES User(username) ON DELETE SET NULL,
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE CASCADE
);

CREATE TABLE Ingredient(
  ingredient_id INT UNSIGNED AUTO_INCREMENT,
  ingredient_name VARCHAR(30) UNIQUE NOT NULL,
  recipe_id INT UNSIGNED,
  PRIMARY KEY (ingredient_id),
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE SET NULL
);

CREATE TABLE Instruction(
  recipe_id INT UNSIGNED,
  step_number SMALLINT UNSIGNED,
  description VARCHAR(800) NOT NULL,
  PRIMARY KEY (recipe_id, step_number),
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE CASCADE
);

CREATE TABLE IngredientOf(
  recipe_id INT UNSIGNED,
  ingredient_id INT UNSIGNED,
  amount DECIMAL(5, 2) UNSIGNED NOT NULL,
  measurement_units VARCHAR(20),
  PRIMARY KEY (recipe_id, ingredient_id),
  FOREIGN KEY (ingredient_id) REFERENCES Ingredient(ingredient_id) ON DELETE CAS
CADE,
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE CASCADE
);

CREATE TABLE CookingToolsRequired(
  tool_id INT UNSIGNED,
  recipe_id INT UNSIGNED,
  PRIMARY KEY (recipe_id, tool_id),
  FOREIGN KEY (tool_id) REFERENCES CookingTool(tool_id) ON DELETE CASCADE,
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE CASCADE
);

CREATE TABLE RecipeHasDietaryRestrictions(
  recipe_id INT UNSIGNED,
  restriction_id INT UNSIGNED,
  PRIMARY KEY (recipe_id, restriction_id),
  FOREIGN KEY (restriction_id) REFERENCES DietaryRestriction(restriction_id) ON
DELETE CASCADE,
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE CASCADE
);

CREATE TABLE RecipesInMeals(
  recipe_id INT UNSIGNED,
  meal_id INT UNSIGNED,
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  PRIMARY KEY (recipe_id, meal_id),
  FOREIGN KEY (meal_id) REFERENCES Meal(meal_id) ON DELETE CASCADE,
  FOREIGN KEY (recipe_id) REFERENCES Recipe(recipe_id) ON DELETE CASCADE
);

INSERT INTO DietaryRestriction (restriction_name)
  VALUES ("Vegan"),
         ("Vegetarian"),
         ("Lactose intolerant"),
         ("gluten free");

INSERT INTO CookingTool (tool_name)
  VALUES ("pot"),
         ("spatula"),
         ("oven"),
         ("stovetop"),
         ("grill"),
         ("blender");

INSERT INTO User (username, name, password)
  VALUES ("gordonramsay123", "Gordon Ramsay", "hellskitchen"),
         ("altonbrown_1", "Alton Brown", "iLik3toCook"),
         ("guyfieri420", "Guy Fieri", "triple_D!"),
         ("spongebob2", "Spongebob Squarepants", "krustykrab");

INSERT INTO Recipe (food_type, cuisine_type, recipe_title, username)
  VALUES ("pizza", "italian", "Pizza Margherita on Focaccia", "gordonramsay123")
,
         ("Bread", "italian", "Focaccia Bread", "gordonramsay123"),
         ("Pizza", "Italian", "Pepperoni Pizza", "guyfieri420"),
         ("Burger", "America", "Cheeseburger", "spongebob2"),
         ("Soup", "Japanese", "Miso Soup", "altonbrown_1");

INSERT INTO Ingredient (ingredient_name, recipe_id)
  VALUES ("Focaccia Bread", NULL),
         ("Marinara Sauce", NULL),
         ("Cheese", NULL),
         ("Tomatoes", NULL),
         ("Basil", NULL),
         ("Balsamic Glaze", NULL),
         ("Flour", NULL),
         ("Salt", NULL),
         ("Yeast", NULL),
         ("Water", NULL),
         ("Olive Oil", NULL),
         ("Vegetable Broth", NULL),
         ("Nori", NULL),
         ("Leeks", NULL),
         ("Scallions", NULL),
         ("Tofu", NULL),
         ("Miso", NULL),
         ("Pepperoni", NULL),
         ("Dough", NULL),
         ("Burger meat", NULL),
         ("Buns", NULL),
         ("Condiments", NULL),
         ("Lettuce", NULL);

INSERT INTO Rating (score, date_added, username, recipe_id)
  VALUES (5, '2015-04-03', "gordonramsay123", 4),
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          (1, '2019-02-05', "gordonramsay123", 3),
          (4, '2017-06-12', "altonbrown_1", 2),
          (3, '2018-07-11', "guyfieri420", 2),
          (5, '2019-01-10', "spongebob2", 5),
          (5, '2020-01-04', "spongebob2", 1);

INSERT INTO IngredientOf (recipe_id, ingredient_id, amount, measurement_units)
  VALUES (2, 7, 3.25, "cups"),
          (2, 8, 1, "tablespoon"),
          (2, 9, .5, "teaspoons"),
          (2, 10, 1.75, "cups"),
          (2, 11, 4, "tablespoons");

INSERT INTO IngredientOf (recipe_id, ingredient_id, amount, measurement_units)
  VALUES (1, 1, 1, NULL),
          (1, 2, .25, "cups"),
          (1, 3, 6, "oz"),
          (1, 4, 1, "cup"),
          (1, 5, 1, "oz"),
          (1, 6, 2, "tablespoons");

INSERT INTO IngredientOf(recipe_id, ingredient_id, amount, measurement_units)
  VALUES (3, 2, 5, "cups"),
          (3, 3, 3, "oz"),
          (3, 18, 20, "slices");

INSERT INTO IngredientOf(recipe_id, ingredient_id, amount, measurement_units)
  VALUES (4, 22, 5, "cups"),
          (4, 20, 3, "oz"),
          (4, 3, 2, "slices");

INSERT INTO IngredientOf(recipe_id, ingredient_id, amount, measurement_units)
  VALUES (5, 12, 6, "cups"),
          (5, 13, 1, "sheet"),
          (5, 14, 1, NULL),
          (5, 15, 3, NULL),
          (5, 16, 8, "oz"),
          (5, 17, 2, "tablespoons");

INSERT INTO Instruction (recipe_id, step_number, description)
  VALUES (2, 1, "Whisk together the flour, kosher salt and yeast. Add the warm w
ater to the flour mixture and stir until incorporated."),
          (2, 2, "Pour 2 tablespoons oil into a medium bowl. Transfer the dough
to the bowl, cover with plastic wrap."),
          (2, 3, "Place in the refrigerator to rest for 24 hours."),
          (2, 4, "Brush the inside of a 9-by-13-inch baking sheet with oil. Remo
ve the dough from the refrigerator and transfer to the prepared pan."),
          (2, 5, "Using your hands, spread the dough out as much as possible, ad
ding oil to the dough if needed to keep it from sticking."),
          (2, 6, "Place the dough in a warm place and let rise until about doubl
ed in size. Then, spread out on sheet."),
          (2, 7, "Heat the oven to 450 degrees. Pat down the focaccia to an even
 thickness of about 1 inch."),
          (2, 8, "Drizzle it with the remaining 2 tablespoons olive oil. Sprinkl
e with salt."),
          (2, 9, "Bake, rotating once front to back, until the top is uniformly
golden brown, 20 to 25 minutes. Cool for 20 minutes");

INSERT INTO Instruction (recipe_id, step_number, description)
  VALUES (1, 1, "Preheat oven to 375."),
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          (1, 2, "Spread focaccia bread with pizza sauce, and top with mozzarell
a and tomatoes."),
          (1, 3, "Cook until cheese melts.  Broil for a minute or so until the c
heese is just starting to char on the tops of bubbles."),
          (1, 4, "Top with basil and balsamic glaze.");

INSERT INTO Instruction(recipe_id, step_number, description)
  VALUES (3, 1, "Set up Buns"),
          (3, 2, "Put condiment here"),
          (3, 3, "Put burger on bun"),
          (3, 4, "Close bun");

INSERT INTO Instruction(recipe_id, step_number, description)
  VALUES (4, 1, "Set up Dough"),
          (4, 2, "Put sauce on dough"),
          (4, 3, "Put Pepperoni on dough"),
          (4, 4, "Put cheese on dough"),
          (4, 5, "Bake");

INSERT INTO Instruction(recipe_id, step_number, description)
  VALUES (5, 1, "Heat vegetable broth over medium heat until simmering."),
          (5, 2, "Add nori, leeks, scallions, and tofu. Let simmer 5 more minute
s."),
          (5, 3, "In a small bowl, stir miso paste with just enough water to dil
ute."),
          (5, 4, "Add contents of bowl to broth and let simmer a minute or so mo
re.");

INSERT INTO CookingToolsRequired(tool_id, recipe_id)
  VALUES (5, 4),
          (2, 4),
          (3, 3),
          (3, 2),
          (1, 5),
          (3, 1);

INSERT INTO RecipeHasDietaryRestrictions (recipe_id, restriction_id)
  VALUES(2, 2),
        (1, 2),
        (5, 1),
        (5, 2);

INSERT INTO Meal(meal_name, description, username)
  VALUES ("Burgers and pizza", "A burger and a pizza", "gordonramsay123"),
          ("Pizza and Soup", "A pizza and some Japanese Miso Soup", "guyfieri420
"),
          ("Burgers with Focaccia Bread", "Burgers using Focaccia Bread", "spong
ebob2");

INSERT INTO RecipesInMeals (recipe_id, meal_id)
  VALUES (3, 1),
          (4, 1),
          (1, 2),
          (5, 2),
          (4, 3),
          (2, 3);

SELECT *
FROM DietaryRestriction;
```

```
SELECT *
FROM CookingTool;

SELECT *
FROM Recipe;

SELECT *
FROM User;

SELECT *
FROM Ingredient;

SELECT *
FROM Rating;

SELECT *
FROM IngredientOf;

SELECT *
FROM Instruction;

SELECT *
FROM CookingToolsRequired;

SELECT *
FROM Meal;
```