

# The Meal Planner project

Thu Nguyen  
Biological Database Course

## ISSUE

Overwhelming information

Recipe  
???

Calories  
???

Want to quickly find a  
tailored recipe fit  
dietary needs.



## GOAL OF PROJECT

A solution for anyone can  
discover delicious recipes that  
align with their dietary  
preferences and nutritional  
goals.

## DATA SOURCES



### Ingredient data

Ingredient name  
Calories  
Nutrition information  
(fat, protein, cholesterol,...)



### Recipe data

Recipe name  
Measure & ingredient  
Instruction  
Rating  
Cooking time



API

### Recipe data

Recipe name  
Measure & ingredient  
Instruction  
Country's cuisine  
Category (breakfast, desert,...)

Search Food Database

Ingredient name  
Greek Yogurt

**Nutrition Facts**  
Serving Size: 6 oz (170g)  
Calories 100

**Amount Per Serving**

Total Fat	0.7g	1%
Saturated Fat	0.2g	1%
Trans Fat	0g	
Polyunsaturated Fat	0g	
Monounsaturated Fat	0.1g	
Cholesterol	8.5mg	3%
Sodium	61mg	3%
Total Carbohydrates	6.1g	2%
Dietary Fiber	0g	0%
Sugars	5.5g	
Protein	17g	
Vitamin D	0mcg	0%
Calcium	187mg	14%
Iron	0.1mg	1%
Potassium	239.7mg	5%
Caffeine	0mg	

RECIPES POPULAR MEAT & SEAFOOD HEALTHY & DIET HOLIDAYS

Recipe name  
**BOURBON CHICKEN**

Rating  
Submitted by LinMarie

Ready in: 35mins

**Instruction**

**DIRECTIONS**

- Editor's Note: Named Bourbon Chicken because it was supposedly created by a Chinese cook who worked in a restaurant on Bourbon Street.
- Heat oil in a large skillet.
- Add chicken pieces and cook until lightly browned.
- Remove chicken.
- Add remaining ingredients, heating over medium Heat until well mixed and dissolved.
- Add chicken and bring to a hard boil.
- Reduce heat and simmer for 20 minutes.
- Serve over hot rice and ENJOY.

**INGREDIENTS**

2	lbs boneless chicken breasts, cut into bite-size pieces
1-2	tablespoon olive oil
1	garlic clove, crushed
1/4	teaspoon ginger
3/4	teaspoon crushed red pepper flakes
1/4	cup apple juice
1/3	cup light brown sugar
2	tablespoons ketchup
1	tablespoon cider vinegar
1/2	cup water
1/3	cup soy sauce

# Data Flow

## Sources



Get API key  
Scrape data

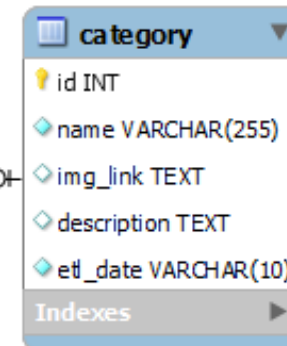
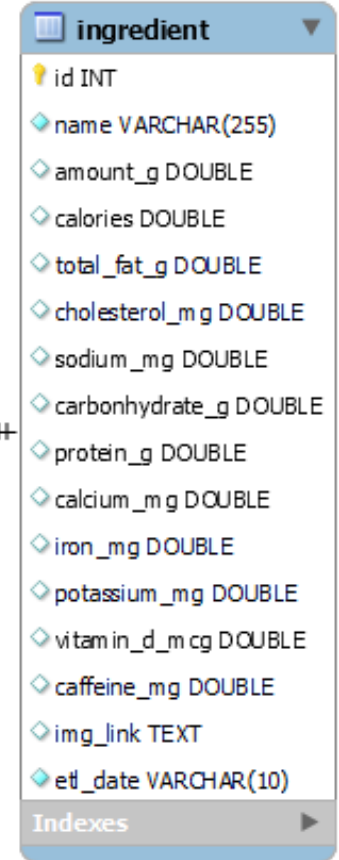
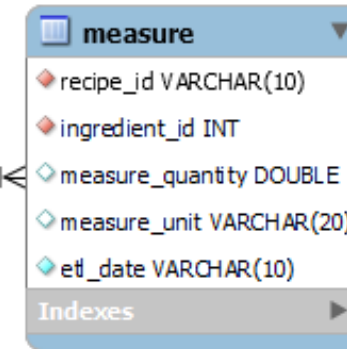
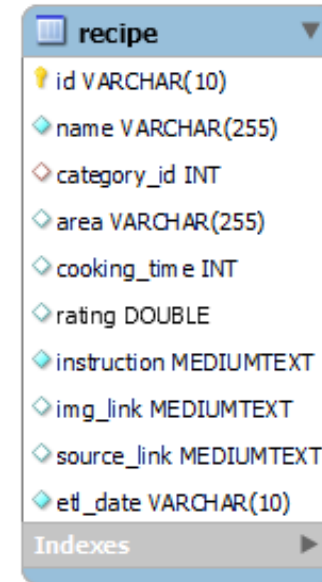
## Raw data



ETL

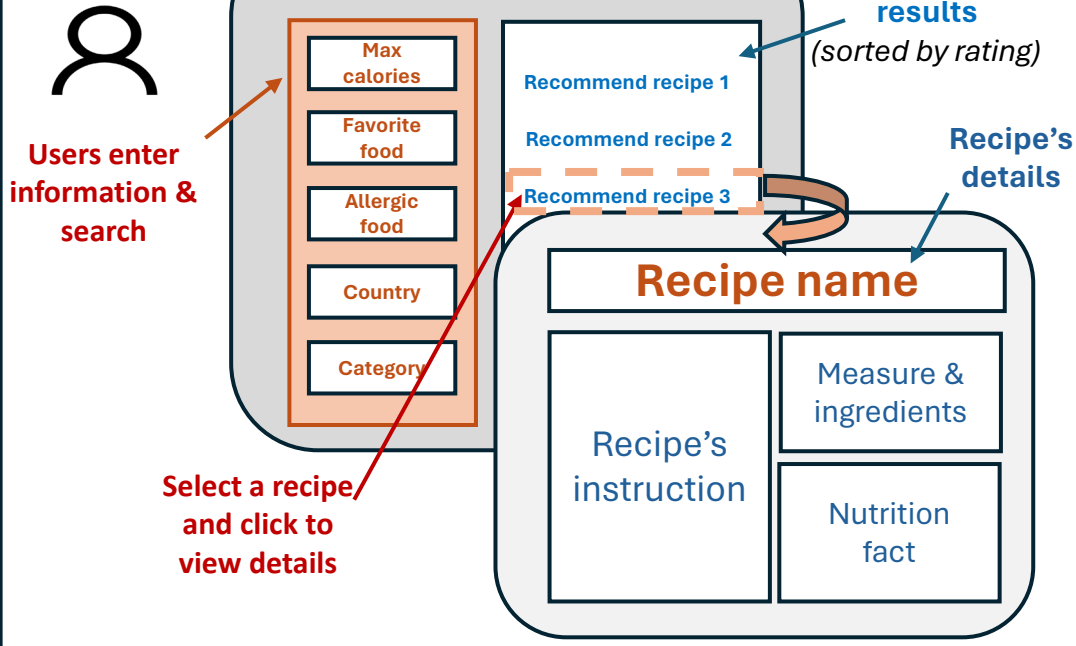


## ENTITY RELATIONSHIP DIAGRAM



## SEARCH PLATFORM'S INTERFACE

### MEAL PLANNER WEB



# App interface



## Recipe information

## Search-recipe page

Click and jump  
to new page

TheMealPlanner

localhost:8501

home  
recipe

### Welcome to TheMealPlanner

Maximum calories per person  
300,00

What is your favorite ingredients  
pasta,yogurt

Are you allergic to any ingredient  
pork

Select category.  
Choose an option

Which country's cuisine would you like to try  
Choose an option


Search

select	image	Recipe Name	Country	Rating
<input type="checkbox"/>		Easy Spicy Shrimp Pasta Low Fat	Unknown	★★★★★
<input type="checkbox"/>		Penne Arrabiatta	Unknown	★★★★★
<input type="checkbox"/>		Mexican Penne	Unknown	★★★★★
<input type="checkbox"/>		Creamy Swiss Chard Pasta	Unknown	★★★★★
<input type="checkbox"/>		Melt In Your Mouth Chicken Breasts	Unknown	★★★★★
<input type="checkbox"/>		Bow Tie Pasta With Broccoli And Broccoli Sauce	Unknown	★★★★★
<input type="checkbox"/>		7 Day Soup Diet Recipe	Unknown	★★★★★
<input type="checkbox"/>		Chicken Alfredo Primavera	Italian	
<input type="checkbox"/>		Lamb Rogan Josh	Indian	
<input type="checkbox"/>		Stovetop Eggplant With Harissa, Chickpeas, And Cumin Yogurt	American	
<input type="checkbox"/>		Creamy Tomato Soup	British	
<input type="checkbox"/>		Nutty Chicken Curry	Indian	
<input type="checkbox"/>		Chicken Marengo	French	
<input type="checkbox"/>		Moussaka	Greek	
<input type="checkbox"/>		Lamb Tzatziki Burgers	Greek	
<input type="checkbox"/>		Shawarma	Egyptian	

localhost:8501/recipe

home  
recipe

### Creamy Swiss Chard Pasta



#### Instruction

- Wash swiss chard, cut into small pieces.
- Heat oil in large 2 quart saucepan over medium high heat, 1 to 2 minutes.
- Add swiss chard, garlic and onion; cooking 1 to 2 minutes, stirring occasionally.
- Add tomatoes, sour cream, milk, parmesan cheese, cooked fettuccine, salt and pepper to taste; stir well.
- Serve warm..

Source: <https://www.food.com/recipe/creamy-swiss-chard-pasta-57123>

#### Information

Calories: 267.0  
Cooking time: 20 m  
Country:   
Tags:   
Rating: ★★★★★


Serving: 1

Quantity	Ingredient
1 lb	swiss
1 tablespoon	olive
2 g	garlic
1/4 cup	onion
2 g	tomatoes
1/2 cup	yogurt
1/2 cup	milk
1/4 cup	cheese
8 ounce	pasta
1	pepper

Check nutrient fact.  
yogurt

#### Nutrient Fact

Serving: 1.0 container  
Calories: 107.0



- Total Fat: 2.6 g
- Cholesterol: 10.0 mg
- Sodium: 119.0 mg
- Total Carbohydrates: 12.0 g
- Protein 8.9 g
- Caffeine: 0.0 mg

# Learnings & Challenges

- **Learnings:**

- **Acquiring data** from multiple sources using scraping and APIs.
- **Organizing data** within a database management system.
- **Displaying data** using Streamlit for app development.

- **Challenges**

- **Combine data** from various sources can be complex  
=> Balancing precision and recall in merging algorithms
- Dealing with **variations in data types between sources**.  
=> missing data affecting search functionality