Alpha Presentation
Enhanced Shopping Experience Using AI

The Capstone Experience

Team Meijer
Matthew Crandall
Zachary Gage
Chirag Rudrangi
Cameron Schwartz
Tatiana Voegerl

Department of Computer Science and Engineering
Michigan State University
Fall 2023
Project Overview

• Make it easier for customers to find recipes that they will like
• Create custom recipes based on dietary preferences and purchase history
• Contained in web application
System Architecture

Customers

Web Browser

Web Application

Next.js Frontend

Node.js Backend

Meijer Ordering API

Microsoft Azure

SQL Database

OpenAI

GPT-4
Home Screen after Recipe Generation
Recipe Modal

Ranch Smash Burgers

Instructions

i. Divide the hamburger meat into 8 balls. Place each ball between two sheets of plastic wrap. Smash with the bottom of a pan to make even thin patties about ½-inch wider than your bun. Refrigerate wrapped patties for at least 10 min while you prepare everything else.

ii. To make the onions, heat the oil in a medium sauté pan over medium heat. Add the diced onions to the pan and season with salt, then sauté for about 8-10 min or until caramelized.

iii. Brush a cast iron pan or large skillet with olive oil, and place over medium high heat. Season both sides of two patties with the ranch seasoning mix and place 2 at a time in the pan.

iv. Sear for about 1-2 min and flip over; as soon as you flip the patty over, place a slice of the cheese on the patty to melt, and cook another 1-2 min. Remove, and repeat with remaining burgers.

v. To assemble, place some shredded lettuce on the bottom of each bun. Stack two burger patties on top of each other on top of the lettuce; then add a spoonful of the caramelized onions on top. Drizzle some ranch over everything and place the top of the buns onto the burgers. Serve immediately.

Ingredients

- Beef
- Olive Oil
- Onion
- Salt
- American Cheese
- Lettuce
Recipe from GPT Output

**Recipe Name:** Lemon Garlic Baked Salmon

**Ingredients:**
- 1 lb salmon fillet
- 2 cloves garlic, minced
- 1 lemon, sliced
- 2 tablespoons olive oil
- Salt and pepper to taste

**Instructions:**
1. Preheat the oven to 375°F (190°C).
2. Place the salmon fillet on a baking sheet lined with foil.
3. Drizzle olive oil over the salmon, ensuring it is evenly coated.
4. Sprinkle minced garlic evenly over the salmon.
5. Squeeze the juice of half a lemon over the salmon.
6. Season with salt and pepper to taste.
7. Place lemon slices on top of the salmon.
8. Bake in the preheated oven for about 15-20 minutes, or until the salmon is cooked through.
Frequently Purchased Products and Image

```
PS C:\Users\zachg\Desktop\CSE 498\capstone_meijer> npm run sqlalpha

  > meijer-next@0.1.0 sqlalpha
  > node ./sql/sqlalpaha.js

Get the top 8 most frequent purchases from userID 2
429, 555, 1543, 1866, 2066, 496, 1018, 1725

Get me the names of the product related to theupid so I can tell GPT the product name
upid - product name
429 - Meijer 100% All Natural Boneless Skinless Chicken Breasts, Family Pack
555 - Fresh from Meijer Mild Italian Sausage Links, 19 oz
1543 - Meijer Shredded Mozzarella Cheese, 16 oz
1866 - Meijer Extra Virgin Olive Oil, 17 oz
2066 - Meijer Lasagna Pasta, 16 oz
496 - Meijer Restaurant Style Meatballs, 20 oz
1018 - Garlic, 1 lb
1725 - Meijer Spaghetti Pasta, 16 oz

Get the image (in base64 string) of the most frequently purchased product
iVBORw0KGgoAAAANSUhEUgAAAAlgAAACAYAAADjyCAYAAAC+ZpjcAAAAAXNSR0IArs4c6QAAABJREFUeJzsveMWJLeRJXwNcI+IXGthVbFY... 
Actual length of image base64 string is 308740 characters long

PS C:\Users\zachg\Desktop\CSE 498\capstone_meijer> ```
What’s left to do?

• Ordering API
• Saving recipes
• Increase efficiency
• User dashboard
• Update UI to match new prototype