Meal Planning Project

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Project Objectives

- Problem Definition
- Data Collection (We are Here)
- Recommender System
- Optimization
- Output

Problem Definition

- Assumption
  - Two people intake same amount of calories per day
  - Dinner contains 40% of the nutrition intake per day
  - Available cooking time per person (hours):
    - A: [3, 2, 1, 0, 4]
    - B: [1, 5, 0, 2, 4]

Data Collection

- **Web Scraping from** https://www.epicurious.com/
  https://www.justataste.com/recipes/
- **Nutrition Requirement Calculations**
  - **Calories, Protein, Fat, Sodium, Carb, Fiber**

  Percent Daily Values are based on a 2,000 calorie diet
  Your Daily Value may be higher or lower depending on your calorie needs:

Calories	2000 kcal	2500 kcal
Total Fat	< 65 g	< 80 g
Protein	< 50 g	< 50 g
Cholesterol	< 300mg	< 300 mg
Sodium	< 2400 mg	< 2400 mg
Total Carbohydrate	300 g	375 g
Dietary Fiber	25 g	30 g

- **Prices of ingredients**
  - **Web Scraping from Whole Foods on Amazon (TBD)**

Recommender System

- User inputs ratings for several dishes they might like and dislike
- Using SVD to generate missing ratings to predict users preference

Optimization

- Maximize Likes
- Constraints:
  - Nutrition Requirements(40% of daily requirement)
    - Calories: [1600 , 2000] kcal
    - Protein: [50 , 50] g
    - Fat: [52 , 64] g
    - Sodium: [1920 , 1920] mg
    - Carb: [240 , 300] g
    - Fiber: [20 , 24] g
  - Cost
    - $100 per week
  - Available time to cook per person(hours)
    - A: [3, 2, 1, 0, 4]
    - B: [1, 5, 0, 2, 4]

Output

- Which recipes to cook per day
- Which people to cook per day
- List of ingredients needed per day to be purchased/delivered