



Meal Planning Project

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Project Objectives



- Problem Definition
- Timeline
- Data Collection
- Recommender System
- Optimization
- User Input
- Output

Problem Definition



- **Assumption**

- Dinner contains 40% of the nutrition intake per day
- Calories intake per day determined by height and weight
- Enables diet diversity which means all the recipes should be different from each other

Timeline



Objectives	To-do List	Estimated Date
Web Scraping	Recipes, Ingredients, Nutrition (www.yummly.com)	3/1
	Ingredients and Prices (Amazon + one more store i.e. Ralphs etc.) or scrape from yummlly's basketful app if possible	3/1
Recommender System	SVD implemented by python	3/8
Optimization	Build Mathematics model and python implementation	3/15
Web Application(optional)	User Interface(home page, feedback page etc.)	3/22
Preliminary Portfolio	Write a draft about the meal planning project	3/31



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

Data source: <https://www.fda.gov>

- 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)
 - Budget
 - Available time to cook per person(hours)
 - Recipe Diversity
 - Approximative cooking time for two people

User Input



- **Height & Weight**
(Used to calculate needed calories)
- **Budget**
- **Allergies**
(Allergies and disliked ingredient)
- **Favorites**
(Favorite dishes and ingredient)
- **Available time**
(Available time for one week)

PLANNING YOUR DINNER	
Height:	Enter Your Height (m)
Weight:	Enter Your Weight (kg)
Budget:	Enter Your Budget (\$)
Allergies:	Enter Your Allergies
Favourites:	Enter Your Favourites
Available Time:	Enter Your Available Time (hrs)
<input type="button" value="Submit"/>	



Output

- Recipes to cook per day
- Cooking time per day
- People in charge per day
- List of ingredients needed per day to be purchased/delivered