INFO 206 - **Problem Statement**  
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**Recipe Generator**

**Brief Overview**

Often times we stock ingredients in our fridge with little knowledge about how to incorporate them together into a new dish. The recipe generator program allows the user to input the main ingredients they would like to use and it will suggest to the user a list of recipes. The recipes will be sorted in the order of the number of ingredients matching the input provided by the user. Once the recipe is selected, the user will be have the option to view the recipe on the screen or download and save the recipe into a folder on their computer for easy access. There will also be a link to a YouTube cooking tutorial of that recipe. This helps the user relieve some stress from having to sift through multiple recipes to find a recipe to use and also allows the user to have an option to use the extra ingredients that would have just been wasted.

**Basic flow of the application**

1a. User inputs 1-3 main ingredients

* 1. The user will have the option to choose between vegetarian and non-vegetarian.
     1. The user chooses which category he/she would like a recipe in
        1. Appetizer
        2. Breakfast & Brunch
        3. Dinner
        4. Dessert
     2. User selects the type of world cuisine
        1. Asian
        2. Indian
        3. Italian
        4. Mexican
        5. Southern
     3. No Preference

1b. The user can even ask for a randomly generated recipe of the day.

1. Program suggests a list of recipes
2. User can choose to quit program anytime by entering ‘quit’
3. User selects the desired recipe and sees the following options
   1. View Recipe
      1. Recipe is displayed on screen with a link to the YouTube video
   2. Download Recipe
      1. Recipe is saved into a folder on the user’s computer

**Technical Aspects**

* + - 1. Web crawling to collect recipe and ingredients data from existing recipe websites by using Scrapy
      2. Creating a dataset out of the crawled information
      3. Build a program to take user input
      4. Match user inputted ingredients/preferences with crawled dataset to find the optimal solution. The algorithm will be able to differentiate between the available recipes and sort the options

**Flow Chart**

User preferences:

Vegetarian, Category, Cuisine, No preference

User input 1-3 ingredients

Recipe list generated

Start Program

Random recipe generated

Display /Download selected recipe on screen

**Possible Challenges**

1. Some possible challenges we may face will be to gather the data set through web crawling different recipe websites. This may be difficult due to the need to hit the source code of the website where we want to gather the information.

2. Since the user is manually typing the ingredients, there may be spelling errors. So in order to overcome this challenge, we may need to figure out the best way to be able to identify what the user is trying to type.

3. Another challenge can be to come up with an optimal match for the ingredients the user inputs with the list of recipes in the database.