"What's The Deal For Your Meal" Bot

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Business Problem

Describe what business problem you are attempting to address with your cognitive application:

- We are looking to create an alternative cognitive application solution for Food.com
- Currently, Food.com provides you with the ability to filter recipes based on cuisine, season, certain types of meat or fish, only certain dietary restrictions, and no specific time limitations
    - We are looking to expand on the ability to allow Food.com to filter base on any dietary restrictions and certain time limitations the user may have
- When searching for simple queries in the search bar, it can give you a long list of recipes
    - It is nearly impossible to sift through the recipes on the site when given broad searches
    - We are looking to narrow the list down for the user so they are not lost looking through 100 recipes
    - Rather than the user scrolling through a list of 100 recipes, we would look to provide the top 5 recipes that best align with the user's desires
- When searching for a multitude of keywords the search bar tends to not come up with any results
    - For example if you search for "nut-free salad", no suggestions are given
    - We would look to provide a more reliable recommendation engine then the current search feature

Business Question

Highlight the specific question or questions your cognitive application will be suitable in addressing:

- Can I have a recipe for a meal that is spicy and vegetarian?
- I will be cooking for a group that includes a nut, milk, and gluten allergy, what should I make?

This would allow a user to get recommendations of recipes from the Food.com site that exactly fit their preferences, whether they are by choice or dietary restrictions.

Data and Scope

Outline the source or sources of data needed to develop and test your cognitive application:

- Within our python script we decided to use a dataset from Food.com which contains a bunch of columns and information about various recipes.
- We had join various tables in order to get our dataset into one large table, we decided to join on recipe_id.
- Our dataset contained around 230,000 rows of data
- The data itself contains columns about recipe cuisine types, number of steps to complete the recipe, recipe ids, number of calories each recipe was worth, the number of minutes it took to cook each recipe and an overall rating of the meal.

Architectural Approach

Highlight the architecture for your cognitive application, along with the tools you will use and how you intend to use them:

- Watson Assistant
  - Leverage chat bot functionality and the interaction with the user
- Python
  - House our dataset
  - Preprocess & clean the dataset using Pandas library
  - Filtering our dataset based on users inputs
  - Natural language processing cosine similarity model
- Connecting the two systems
  - We will connect our dataset and model in Python to Watson Assistant via API Key
  - Python will send API calls to retrieve the users inputs in Watson Assistant
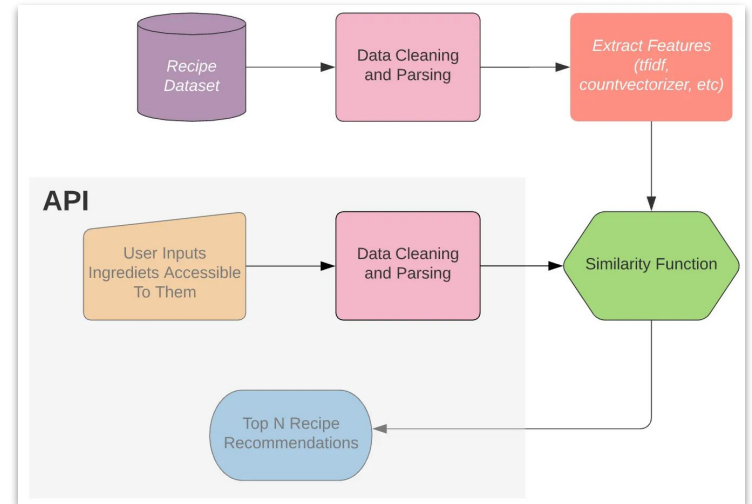
Anticipated Results

Outline the results you anticipate:

- Understand and extract the user's wants and needs by interacting with the user and asking different questions via Watson Assistant
- Generate the top 5 most similar recipes based on the user's inputs in Watson Assistant
  - These recommendations need to account for each of the user's wants and needs (time, allergies, dietary restrictions, cuisine, etc.)
- Surface the recipes and the associated data in an easy readable format in Watson Assistant for the user
  - Recipe Name, Average Customer Rating, Number of Ratings, Number of Minutes, Ingredients, Steps

Business Impact

Describe the business impact your anticipated cognitive application might have:

- Increase daily users, as the assistant adds a different reason for users to be on the site
- Increase user satisfaction and ease of use of the website
- Increase user data gathered, as the inputs can be used to better understand which type of users make which recipes
- Improve filtering capabilities as compared to Food.com
- Allow for more accurate requests when searching for specific recipes

References

Where we got our dataset:

Li, Shuyang. "Food.com Recipes and Interactions." *Kaggle*, 8 Nov. 2019,
https://www.kaggle.com/datasets/shuyangli94/food-com-recipes-and-user-interactions.

Architectural Approach:

https://towardsdatascience.com/building-a-recipe-recommendation-system-297c229dda7b