MAIS 202 - PROJECT DELIVERABLE 1

Recipe Recommendation web application

1.Choice of Dataset:

For this project I could not find a dataset that would satisfy all the different features that would satisfy my needs through Kaggle, so I decided to go for the second option which is to build my own dataset using web scraping. I am aiming to scrap different features including but not limited to Price per serving, Ingredients, and description of the recipe;

2.a. Data processing:

Once our data set created, we must have some data preprocessing and also some data wrangling, for example we would give our machine learning model the ingredients as a string input, that would be unfeasible, thus we must fix that through data processing and data wrangling, I aware that there are some useful tools that would help me do the data preprocecing but i would like to implement that on my own. Fist i would like to clarify the structure of the table that i would like to have.

2.b. The machine learning model:

Here comes the fun part of the project; for the machine learning model I think the best one to use is the KNN model, which through data input of the user the KNN would suggest the closest recipe to what the user is looking for, I also thought about Decision trees as a classification model but it would be hard to implement with for example the price feature that is a continuous value and that would be hard to implement specially because the price would be selected as a range and not as a discrete value , also due to the presence of the variety of ingredients the decision tree might get very messy and very hard to implement.

2.c The evaluation Metrics:

For this part of the project, we would use the usual evaluation metrics used for classification model namely Accuracy Precision and re-call, of course we can less specific meticulous about how good our model does because we are not looking for a prediction in this project , but we won't to give a recommendation of a recipe that the user would be most likely interested in.

3.the application:

This Project will be in the form of a web application where the user would select a certain number of ingredients (that the user might have) through a list of ingredients provided by the web sites, he would also be encouraged to give a budget to the recipe for a more targeting experience. For now, I want to keep it simple, but I would like to add later more features to this web application for example been able to get a suggestion according to the user dietary restriction or add another range selection where the user give the number of calories that he would not like to exceed and many other features that we could think of.