CS 410 Final Project Proposal:
Next Era Elite Bartender

Captain: Xin Jin(xinj3)
Team Member: Zhicong Fan(zhicong2)

Description:
In this project, we are going to create a website instructing users to mix drinks inspired by a food recipe website. When a user enters the website, we would ask for the user to first enter the base wine he/she wants. Then we would match five choices of ingredients that have the highest scores based on our ranking system. If the user does not want these five ingredients, he/she can also expand the list so more ingredients can be added. After this round of selection, five highest scored drinks would be recommended with specific images and tutorials to make.

Approach:
First, we will do web crawling on existing bartender website to obtain the ingredient list and the flavor profile for each types of drinks. We will write our own web crawling code to obtain the information from the bartender web pages, and parse the web information to construct our dataset.

Second, we will construct our own bartender web page. More specifically, we will write a HTML web page and host it on a local server. On the web page, users can choose some of the key ingredients and the website will recommend some other ingredients or options to narrow down the options. Then, our recommendation system will return the list of drinks based on the relevance level determined by users' options.

Third, we will construct our backend code to handle users' inputs, execute the recommendation system, and send back the results to the front end. Each ingredients and flavor will have unique tags. The recommendation system will take users' selected ingredients and make a pseudo drink, which may or may not exist in the dataset. The pseudo drink will be used to calculate the similarity between the rest of the drinks in the dataset. Finally, the recommendation system will output the top ranked drinks to the front end.

Outcome:
- A website that can deliver recommended drinks based on user's selections and ranking algorithm
- A database that contains thousands of drinks we crawl from a bartending website.

Evaluation:
1. The drinks we recommended contain all the ingredients the user selected or had the highest ranking scores based on our algorithm

2. If no drinks match with the selection, we would notify the user and recommend the most popular drinks.
3. The selections recommended based on the algorithm have the highest scores we calculated. No lower scored selection would be chosen.

Tools and Dataset:

1. Backend: Python Flask
2. Frontend: NodeJs, HTML

Program Languages:

1. Python
2. JavaScript

Task and Workload:

1. Xin Jin would take care of the backend
2. Zhicong Fan would be in charge of the frontend and crawling websites