Self Assessment
Chau Tran
Team BearPaw

Part A:
For our Senior Design Project, I took charge on the health information calculation and the meal recommender. Our project direction shifted, from doing a fitness and health web-app to purely focusing on health and diet web-app. I mainly worked on the back-end and shifted to integration towards the final push of the project. The role included analyzing and preprocessing data, applying machine learning to build the recommender, and integrating between React and Django. These tasks involved knowledge in Web Development, Data Analysis and Machine Learning, which closely aligns with the skills identified in my initial assessment. In the end, I created a recipe dataset by combining two public datasets taken from Kaggle, a recommender that used user nutrition information and the dataset to generate corresponding recipes and successfully integrate it into the web-app.

I leveraged Python libraries (such as pandas, sci-kit learn, numpy) for both preprocessing data and creating the recommender. In order to calculate health information based on the user input, I did research on different health guidelines and followed closely with the Dietary Reference Intake from the USDA. For the user recommender, I reference different resources online to find different machine learning methods including random forest, naive bayes and k-nearest-neighbor. In the end, I decided to go with k-nearest neighbor and created a recommender model based on it. This is the first time I went through the whole process from data collecting to model building. I understood more about designing and experimenting with models and data. For my first major obstacle, I had initial struggles with collecting data, as I initially planned to scrape across different recipe websites to build my own dataset. The dataset created was too limited, however, and I opt for already-made dataset instead. My second main obstacles is leveraging user data to fit and test my model. I tackle it by manually creating a small sample dataset with different user nutrition information. Overall, I learned a lot.

Part B:

We created the general backbone of the web-application, with three main functionality: user manager, nutrition tracker and meal recommender. The user is able to login/create an account, and track their daily nutrition intake, and find meal recipes best suited for them. After this project, I understand the importance of communication much more. There were some troubles incorporating user manager and meal recommender as the latter takes input from the first. Initially, I did not communicate well about me needs for the user input and its required components. Therefore, the model took longer than I intended. However, afterwards, we had more meetings with one another, especially during the integration between front-end and back-end.

Each of my teammates was able to complete their tasks well and voiced their concerns when needed. However, the tasks were not always completed in a timely manners, which was understandable given our different availability since some tasks depend on one another. Another aspects that I think we could improve upon is our lack of feedback. I now understands that it is important to give our opinion on one another tasks, rather than just move on. Eventually, we were able to complete the project but we all feel that we could have done one of our previous tasks better if we gave each other some recommendations or critics. We all spent the same amount of efforts into the project, and split the tasks fairly with each person’s forte. I think that we all deserve equal recognition, however, I was very grateful for Terrance. He was very communicative throughout the project and kept us very up-to-date with his progress. All in all, I am very lucky to have teammates that I trust and have known since my freshmen years.