CS 411
Final Project Report

1. Please list out changes in directions of your project if the final project is different from your original proposal (based on your stage 1 proposal submission)

   Our initial aim of this project was to generate a platform where users can choose different wines according to their choices of the variety, price, rating, etc. We initially designed it as a tool to provide multiple columns of choices for the users. However, as we faced limitations in our front-end knowledge, we had to change the functions of our website. Instead of allowing users to narrow down their choices with different selective options to make, we gave users the best wine, average ratings of the wine, entire wine list, etc. Furthermore, the front-end user interface has also changed as our functionality changed.

2. Discuss what you think your application achieved or failed to achieve regarding its usefulness

   Even though our project deviated from our initial design, we believe we have created a user-friendly application to allow users to narrow down their choices of wines. We successfully demonstrated wine search, review edit/delete, average rating of wines, best wines, bonus points, user rankings, and weather information. Wine search allows users to easily search if their choices of wine exists and if it does, they can view the ratings of reviews of those. Furthermore, weather information tells users the weather condition when they have to actually go out and but wines. However, we failed to illustrate our function in a aesthetically pleasing formation. The results of our created functions are listed out as dictionary and not in table format. Thus, users might have hard times finding their wine choices.

3. Discuss if you changed the schema or the source of the data for your application

   Our initial wine data was retrieved from the Kaggle website. However, in order to fit the course requirements and our application design, more attributes needed to be created. For example, the Kaggle data did not provide user information nor the user reviews. Thus, we manually created the data by ourselves and connected as shown in our ER diagram.

4. Discuss what you change to your ER diagram and/or your table implementations.
   - What are some differences between the original design and the final design? Why?
     - We originally had five tables: Wine, FilterData, Tester, User, and Rating. However, we decided to merge Wine and FilterData into the Wine table and add a new table called Shop, which contains wineID, shop name, and address that sells wines in their store. We thought Wine could cover what FilterData does. What do you think is a more suitable design?
   - What do you think is a more suitable design?
     - I think our final design is more suitable and offers more efficient information. For example, we add a weather API that shows the next three hours of the weather forecast of wine shops in our dataset. Therefore, I think the final design suits our topic more and more related.
5. Discuss what functionalities you added or removed. Why?

   The purpose of our project is to show wine lists by filtering individual preferences and showing users' reviews about each wine. Users can search for wine by its name. They can leave a new review containing a score and review for its wine and edit and delete their review. We also made buttons to show all wine lists containing all the pieces of information, list of average ratings per wine, lists of the best wine, lists of wines that are cost-effective, list of user ranking by wine, and last but not least, list of weather predictions for next 3 hours of wine shops in our database with containing time range, temperature, and a short description of the weather. We thought putting review functions and displaying lists with different filters would be helpful to people.

6. Explain how you think your advanced database programs complement your application.

   We used flask as the main library and our middleware. We used the flask library given functions to connect with our database, which is in our GCP, and used the cursor to run SQL code. We made a

separate function to connect and run SQL code and call this function in every function with its route. We wrote all our SQL code in a comment string and called the SQL running function by putting SQL code as a parameter.

7. Each team member should describe one technical challenge that the team encountered. This should be sufficiently detailed such that another future team could use this as helpful advice if they were to start a similar project or where to maintain your project.

   Yoonjae: One technical difficulty was debugging with both Google Cloud and local device. When my team was testing out the codes we have written, sometimes our code ran fluently in the local device but not in the Google Cloud platform and vice versa. If either one of the platforms does not work, it meant there was an issue in the code and database we had created. We had to make sure the local database was created identically with the ones uploaded to GCP. It was important for our group to check the application on both GCP and local settings.

   Jennifer: The difficulty we faced was a lack of knowledge of javascript and CSS. If we could learn how javascript and CSS work and have short tutorials, it would be helpful to do the final project.

   Chanmin: The biggest technical challenge we faced as we worked on the project was to maintain the connection between GCP and our application. In the early stages, whenever we got the internal error message from our application, we thought there were something wrong with our codes where we establish connection to GCP. As time passed, we noticed that it was due to the IP address most of the time. When we allowlisted our IP address at the beginning of the project, the connection was stable and worked fine. However, as we moved the location from school to house, because the IP address of my laptop changes in different places, we had to allowlist our IP address whenever we changed the working location. Also, because the IP address was sometimes reassigned even if I worked on the project in my room without going out(in the weekend for example), whenever the application threw the error message, I had to lookup my IP address and addlist it.

8. Are there other things that changed comparing the final application with the original proposal?

   We didn't change that much from the original proposal. But we switched to topics because we thought our initial proposal was not helpful and it was hard to display this project's main contents.

9. Describe future work that you think, other than the interface, that the application can improve on.

   As aforementioned, our initial goal of this project was to allow users to choose different characteristics of wine, including variety, country, price, etc., as to figure out the best wine that suits their taste. However, with lack of understandings we had to deviate from our idea. In future work, if we had more time and put more effort in the project, we would like to add such function to create an application that fits our initial design.

10. Describe the final division of labor and how well you managed teamwork.

    Our initial goal was to divide tasks for each group member. For example, one person to be in charge of the front-end and the other to be in charge of the back end. However, as we all lacked complete comprehension of our initial set-up, we had to change our plans. Instead of the initial idea, we decided to work together for the entire project. This might have slowed down the process as all three members were working on same parts, but eventually this change allowed us to finalize our webpage tool to successfully function.