**Student name**: Khanh Le

**Assignmen**t: Individual Capstone Assessment

Our project’s name is Covid-19 Intelligent Query System (Covid-IQS). For this project, we aim to create a search engine on our database of medical articles. The user could search on any keyword, find their interested articles, and save them to read later. A table of user’s interaction and user’s interest will be kept for the next stage of our project. From the information collected from this table, we hope to understand better which medical topics / areas attract most readers. The table will definitely help us to improve our ranking algorithm, which is also a critical area to research on.

There are a few of CS classes that benefit me for this project. They are CS 2021 (Python Programming), CS 4092 (Database Design), and CS 5165 (Intro to Cloud Computing). With Database Design, it helped me become more familiar with syntax / operations of SQL table, which is the primary data container for our project. Because the project is mainly written in form of a Flask application, of course, my exposure to Python in CS 2021 and to Flask in CS 5165 is very useful. In fact, the Intro to Cloud Computing class is the only place I had to write a complete Flask application with all features we usually see on a normal website: authentication, database, redirection, etc. I see all of those features again in this project, so there is almost no in-between time barrier for me to start working. It might be useful for my team as well because my teammates claimed to not know Flask much.

Previous CO-OP positions also offered me various kinds of experience. I used to a web developer in a podcasting company. It is not an overstatement to say that most of my tasks in my former position could be found again in my current project. There is also not much difference in terms of languages and frameworks. In my previous position, we used Bootstrap as the frontend framework, and javaScript plus jQuery as the supporting library. Many hours of learning and working with all of them in professional environment are the main reason why I was assigned to the frontend developer role in this project.

I am extremely motivated to join in project that contributes to our battle against the COVID-19. Living in a country suffering heavy damage from the pandemic, I believe that every of our effort regardless of from which fields matters equally now. The issue with our current search engine now is: the slow speed of real-time elastic search, the tremendous amount of time (~ 1 month) to preprocess the article database, some bugs in our UI, and messy code in our Flask app. Some of suggestions from our developer team are given: implementing dynamic programming instead of preprocessing all articles, redesigning the UI, separating code in our Flask app to distinct layers, …In general, whenever we found a problem, we will discuss it on our weekly WebEx meeting and ask for decision from Professor Wu if necessary. The developer team then will have an independent meeting / conversation to discuss further actions before executing them.

As Professor Wu is the faculty advisor and also the owner of this project, most of requirements and criteria will depend on his assessment. However, we also have a couple of our own criteria to evaluate our project. Firstly, we should successfully integrate the UI design from designer team into our code logic. After the integration, the search engine should at least maintain functionalities in its current state. Secondly, the speed of elastic search should be increased to the point where the user might not feel any uncomfortableness. Finally, we should collect a huge enough amount of user’s interest for later research purpose