Our Senior design project is going to be to create a web application that makes use of APIs to gather sentiment analysis data of businesses and marks the general feelings of that company on a map. For this project I will need to act as a full-stack developer using both frontend and backend developer skills. From my individual academic perspective I have gained both frontend and backend software development skills from courses I have taken here at UC. I have backend skills in programming with both C++ and Python. I learned how to use C++ in Computer Science 1 (CS1021) class. I learned how to use Python in Python Programming (CS2021) at UC. I have also learned how to do front end coding in my UI class User Interface 1 (CS5167) where we have learned about general design and HTML. I have also taken Software Testing and QA (EECE5132) which has familiarized me with quality assurance and testing, which will be useful in testing our project. Overall the rest of my CS courses I have taken at UC will help me by equipping me with the background knowledge needed to develop programs and algorithms.

I have also gained skills important for this project while at Co-op. I Co-oped all five of my rotations at Siemens Digital Industries. While Co-oping at Siemens I worked on two different teams. The first team I co-oped with was in the Product Engineering Software department on the TeamCenter Integration Team. The job of the team as a whole was to ensure that the database software TeamCenter was integrated smoothly with the modeling software NX, so our team as a whole did primarily backend software development. While on this team I primarily worked on backend refactoring projects in NX. This allowed me to gain skills in C# programming and insight on how to write efficient and professional code which will be important for my Capstone project. I also gained experience working in a large code library and handling large pools of data, which I will need moving forward with this project.

The second team I co-oped with at Siemens was the Meshing and Abstraction team in the Simulation Tool Software department. This team works on Siemens SimCenter 3D which is a tool within NX, specifically on meshing issues and finite element analysis. On this team I primarily worked on frontend UI projects with XML. Including adding new functionality to existing windows including search and find functionality. As well as creating a new way for our QA team to create Autotests within the NX UI instead of using outside resources. This front end experience will help me with my capstone project by providing me with a background in UI/ UX coding which we will need in creating a website.

My motivation for our project is that I want to improve my UI/UX design skills and I want to gain experience using APIs to visualize data. The idea of data visualization is something I am extremely interested in. It is something that melds together my creative and analytical side, but putting visuals to data. I also think that this project is a good idea that will actually have use beyond the score of this capstone class and I am excited to take part in it. In the future I want to go into a UI/ UX design position and these roles require knowledge of APIs and UI/UX programming skills. Doing this project will greatly expand my knowledge of both so I am excited to learn more..

The expected results of this project will be that we have a functioning website that gathers sentiment analysis data from an API about some input; most likely a business; and displays it in a visual manner. I would want the API to collect data about perception based on keywords with specific connotations, and then display that data on a map to show the overall feelings about a specific business in different locations. So far we have begun to look into twitter APIs that already exist for public use. There are already examples of APIs that gather information on perception as well as APIs that gather information about location from twitter.

So our plan is to make use of those to gather information that we will then display visually in the form of a map. I will know that I am done when I have shown my other team members and our faculty advisor my work and we have decided together that it looks good. I will personally self evaluate first by looking at my work and deciding if it is up to my personal standards.