For most of the project I worked as the triangle role for the team, section 1 involved picking a machine learning model and making a mockup model. During this segment I tested several different model types such as combining multiple linear regression models into one. In the end I settled on a karas neural network and researched LSTM layers that optimize time series data. Picking out the model was the hardest part. In the end I relied on my teammates input and a lot of research to decide on a model. The next segment had me finishing up the database. I created a python script using the EPA API to update the database and joined tables together. The last 2 segments as X and triangle mainly had me performing quality checks and ensuring we adhered to the rubrics. I reviewed a lot of the code and added in comments for understanding.

During the project we had a lot of discussion, and everyone contributed ideas equally. All decisions were made in the meeting with everyone’s input. We all discussed what data would be used, how it would be stored, what model to use and how to connect it, etc. Having worked on the machine learning model in segment 1, I did my best to give Angela ideas for fine tuning the model such as removing variables and changing the dropout layer. We discussed ideas for the charts in tableau and I pitched the idea of using a heatmap as our interactive element. When it came to reviewing the branches in git hub to submit, we tried to split up the work. I mainly tried to handle the branches that involved multiple readme edits. The edits would conflict and so you would have to review the changes and manually add or remove what was needed to resolve the conflicts.

Working with Tammy, Angela, and Hanita was phenomenal. Everyone contributed equally to the Project, and it was a real group effort. To communicate we set up regular zoom meetings to attend outside of class. During the zoom meetings we would gather opinions about problems and bounce ideas off each other. Tammy took the lead when it came to organizing the zoom meetings and did a fantastic job. Angela worked hard training the model and showed a lot of perseverance throughout the project. Hanita did excellent setting up the analysis based on what we agreed to present as a group. Overall, the process was very smooth and there’s not much I would change.

The project we chose to work on was a machine learning model created to predict the Air Quality Index (AQI) category given a date and some other factors. To achieve this goal, we created a neural network using a TensorFlow karas sequential model. The model uses 2 LSTM hidden layers to optimize the date input and 2 dropout layers to prevent overfitting. With this model we were able to achieve a loss of 0.02 and a 64% accuracy rating for the model. With more training involved we should be able to make a model that gives a good prediction of AQI for people with breathing issues who need a warning.