## Project Title:

Niner Transit Data

## Short Project Description: (1 paragraph)

In our project we were handed a large dataset containing all of the people who got on and off of the UNC Charlotte buses along with other information. Our project goal was, in a broad sense, to make the system more efficient. Our project consisted of creating visualizations and finding unique way to learn more about the data to solve the problem.

## Have overall project goals and objectives been met? Explain. (1-2 paragraphs)

Overall, we are satisfied with the meeting of initial objectives. However, we didn’t definitively meet our overall goal. We wanted to make the niner transit system more efficient, but we lacked the information that we needed to make that happen.

Along the way, we attempted to use the data we had to answer many different questions - most of them leading to dead ends. We ended up coming up with a template of what stops should be removed using a clustering machine learning algorithm. We’re happy with how much we learned about using Data Science to solve real world problems, but we do wish we could’ve made a bigger impact in what we were trying to do.

## Does the final implementation meet all of the stated requirements? If not, explain.

Yes. Although we didn’t create a traditional software engineering project, we successfully followed along with all of the stated requirements. We adapted our project to the guidelines and rubric given by the professor.

## Has the group been able to complete verification and validation activities? Please explain how verification and validation were performed.

This step didn’t apply to us as we were working on data rather than creating a website. We did validate each other’s code on various steps throughout the semester, though - just to make sure we were getting the same results.

## Individual responsibilities of each team member: (1 paragraph per person)

**Felipe** - I worked as the facilitator for our meetings and led the team through delegating tasks. I was responsible for the migration of all of our visualizations into Streamlit and helped in various steps of the initial visualizations.

**Thien** - I took responsibility for finding an answer for the question “How to optimize the bus routes to make our Transit Niner System more efficient and convenient for our UNCC community?” In order to answer this question, I built a clustering model, which is an unsupervised machine learning model, to define which bus stops we should remove and which stops we need to keep to make our routes optimal based on the average number of passengers getting on and off at each bus stop. I also created a Shiny app using leaflet package in R to create interactive maps for our new optimal routes for Niner Transit System that we came up with based on the result of our clustering model. I also took responsibility for cleaning and extracting data for the Gold Line.

**Django**- I helped the team up by cleaning the data before being used and came up with the initial visualizations to help us understand the data better. I helped in many different ways either by contributing to the codes, coming up with an elevator pitch video and more.

**Autumn** - I focused on creating the powerpoints and laying out how the information should be presented. I also designed the powerpoints and displayed the information in an interactive and eyecatching way. Lastly, I presented my parts for the assignments.

**Jaren** - I was responsible for creating some of our graphs in python throughout each sprint. I also did my part in each video presentation and assumed a leadership role for both of our Design Document assignments.

## Download the [Team Project Survey Attestation.docx](https://uncc.instructure.com/courses/169681/files/15190354/download?wrap=1) document. Add all team member names, and UNCC logins, and have each member sign the document before uploading it here.