1. **Motivation/problem statement:**

In A4, I investigated the correlation between mask mandates and case counts for Jefferson County, Kentucky. Working on this problem got me thinking about how people’s behaviours changed as the pandemic progressed - specifically, I’m interested in people’s behaviour wrt public spaces - Did relaxing mask mandates result in people feeling more comfortable to visit parks? I think this is interesting as it reflects people’s openness and willingness to move outside their house. While there are a number of factors that influence human behaviour - what effect did the relaxation of the mask mandate have?

1. **Research questions and/or hypotheses:**

**Research Question:**

How has people’s mobility wrt parks changed since the onset of COVID in Jefferson County? Specifically, what effect did the mask mandate have?

**Hypothesis:**

With the relaxation of the mask mandate, people started frequenting public places like parks more, which in turn led to the increase in cases that we saw in A4.

1. **Data used**:

To be able to answer this question, I will supplement the data from A4 with Google Mobility data. The dataset provides us with percent increase (vis -a -vis a baseline) in mobility in public places at the county level. This data is exactly what we need to answer our question. There are a couple of caveats to keep in mind though -

* The baseline for this dataset is mobility in the county in Jan 2020.
* There are a number of other factors that also affect mobility in parks - seasonality being a big one
* This only records data from people whose location services are on and have consented to share data

The link to the data set is: <https://www.google.com/covid19/mobility/index.html?hl=en>

To ensure privacy, Google has used differential privacy to try to better anonymize the data.

In A4, we looked at how mask mandates affect spread of covid. However, there are a number of intermediate factors between mask mandates and spread of covid - one of which is mobility in public spaces. This data extends the analysis to address this question.

1. **Unknowns and dependencies**:

I’m not sure how to control for seasonality - It would have been nice, if the baseline was the corresponding month in the previous year. However, I think from the data we should have enough signal to be able to notice a correlation if there is. We are also going to be making the assumption that people whose location services are on are representative of the population.

**Methodology**:

To be able to analyze this question, I will use time series visualization techniques namely a time series plot and a heatmap visualization. Since I’m trying to investigate a relationship,I think this should be sufficient. Making a causal inference would require controlling for other variables for which we don’t have information available.

To perform the analysis, I will need to clean the google mobility data and then join it with the data that we currently have. Once I have all the data that I need in a tidy format, I will work on the visualization aspect. I currently have 3 visualizations in mind -

* Comparing mobility data, year on year
* Impact of masks on mobility data
* Case counts with mobility data

To understand the seasonality aspect, I think a heatmap would be helpful. For the other questions, a time series chart color coded by the ordinal variables should do the trick.

1. **Timeline to completion**:

Nov 18th: Collect & clean data, create base visualizations

Nov 24th: Time permitting extend and see effect of mobility in other public spaces besides parks

Dec 1st: Get Slides Completed

Dec 7th: Project Presentation

Dec 14th: Project Report