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**Goal**

**What would the predicted number of daily scooter rides look like if the rate hadn’t decreased on July 1st, 2024?**

During a team’s meeting, the Fort Collins Transportation Planner, Rachel Ruhlen, told us about the changes in the pricing for e-scooter rides. After an initial increase from 30 to 40 cents a minute, the team decided that the cost was too high, negatively impacting the number of daily rides. July 1st of this year they dropped the price back down to 30 cents a minute in campus zones, and have since seen an increase in rides. I want to examine how these last three months could have looked if this decision had not been made.

**Methodology:**

First, the csv file with daily rides a year is loaded in. We have two columns containing the date and corresponding rows with the number of e-scooter trips taken that day. We will create a third column with the price corresponding to the right periods, and clean the data by removing N/A values and changing the date column to be a time series type.

We’ll split our data frame into training data (before the second price change) to predict future rides at the price of 40 cents a minute. Then, we will individually fit linear, ARIMA, ETS, and prophet models to this data to predict future trends up until October 17, 2024 (the date the data ends on).

The trend lines of the actual number of rides taken vs the predicted number with different models will be graphed for comparison.

**Results**

The predicted number of rides is modeled in the span of 4 months, which leads to the AMIRA and ETS models looking more linear in appearance.

However, we can see that, as expected, the predicted number of rides from the four models is a lot lower than what the actual number of rides looked like after the price changing, showing that this was a good decision.