Second Prototype

**Goal of Project:**

The goal of this project is to highlight the safety concerns of Tesla cars and understand where these issues are most occurring. By analyzing the dataset at hand, a conclusion can be made about how unsafe Tesla really is, especially the Fully Self-Driving (FSD) models. This project will also show how unreliable data can be in certain situations where a human claims autopilot was NOT used even if it was and vice versa. The project is at the mercy of the data being accurate and no accounts being left out. By analyzing the data by country and then by states in the United States, most of the data was found to be in the United States. It is the country with the most accidents happening involving Tesla cars as well as auto pilot being claimed.

**Data:**

The dataset that was chosen for this project includes information such as country, state, and whether auto pilot was confirmed our not. The dataset also includes coded columns that include 1’s and 0’s. This includes variables like whether the person killed was a pedestrian, biker, or in another car. The only thing missing from the data is links to each specific case for further reading and understanding. Because of this, only what was given in the dataset can be used even if it is not completely accurate because people can lie when making insurance claims and such. After analyzing each country, the United States was the top contender for the most unsafe. This plot was created to show where the most concentrated number of crashes were:

Chart, waterfall chart

Description automatically generated

This plot clearly shows that the United States has the highest number of accidents, and deaths per accident. This also shows that autopilot was being claimed in other countries but not in the United States even though the accident rates are much higher.

**Methods:**

For this project, the method used was to analyze the different concentrations of accidents based on country and then by state. First, the data was analyzed on an international scale to pinpoint where exactly accidents were even happening. After that, the data was analyzed on a national scale because the United States had the most accidents out of all the countries. Then, the fill() command was used to see whether autopilot was confirmed or not to see if the FSD system of Tesla is at fault. The most deaths and number of people who died per accident are highest in the United States. A new method that may need to be investigated is to see whether Tesla deaths have gone up over the years. This would require a breakdown of each year and to compare the accident to death ratios for that year to see if that value has increased or decreased. As Tesla claims to have safer cars now than before, this value would have to have a steady increase over the years. This method is by far the best because it shows the accidents on different scales while also making sure the number of deaths and whether auto pilot was used are factors in this. Those two factors are the variables being tested in this project.

**Preliminary Results:**

The preliminary results show that there is an area where there are a greater number of accidents than anywhere else. That place is the United States. It is also confirmed that most accidents do not involve FSD systems because even though the United States has the greatest number of accidents than any other country, there was no case in the United States where Auto Pilot was claimed by the driver of the Tesla. This may be incorrect because it is easy for a driver to lie about it being activated or not. Due to this, the only conclusion that can be made this far into the investigation is that other countries where Tesla crashes happened and did involve Auto Pilot should be investigated. This would not be as significant because there are not nearly as many crashes as the United States, but it may still answer the question this project is trying to answer, and that is: Are Tesla Self-Driving cars safe?

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