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CTIM 285

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Final Project Report

After receiving the task from the State of Happiness to analyze the traffic statistics they have collected from their major highway, the Road to Oblivion, on the westbound side of the highway, I have processed their data and have come to a few conclusions after my analysis.

Firstly, lets start with the processing of the data. The data they had collected and given to me was in the form of a csv (Comma-Separated Values) file. On each line was 10 values separated by a comma with either a time that a transponder was tripped by a trap or with a -1 value to indicate the vehicle had not gone through that trap. Using the Python programming language, I had used the imported csv library to load and read the file they had provided. I iterated through each line of the file saving the start and end points of each of the one thousand cars’ journey on the highway. This information determined the time in between each segment of the highway until the car exited the highway. With this, I could also determine whether or not a car was speeding due to having the mile markers for each exit and implementing a switch statement in my code to access that mile per segment information while the cars journey was being processed. I could also determine a car’s average speed over the whole trip, the speed of each vehicle, the average speed of all the vehicles, and keep count of the total speed in each segment to see which segments had the most and least number of speeders.

Upon my analysis, a majority of drives that travel on the westbound side of the Road to Oblivion highway are speeding. Of the one thousand drivers, five-hundred thirty-six were caught speeding according to my created function, that took their time and distance into consideration, and determined they were at one point exceeding the seventy mile per hour speed limit (See bar graph labeled Drivers Speed). Only four-hundred sixty-four vehicles traveled beneath the speed limit on average over their entire journey (See bar graph labeled Drivers Speed). That is fifty-four percent of drivers speeding to only forty-six percent not speeding (See pie graph). The total average speed of all the vehicles was seventy-two miles per hour to furthermore prove that most vehicles are speeding on the highway. According to the data on each segment the least speeded-in segments were segment one and segment two (See bar graph labeled Non-Speeders per Segment). The most speeded-in segments were segment six and segment seven (See bar graph labeled Speeders per Segment). Also, with the counter implemented to collect the total miles per hour in each segment, segment six and segment seven accumulated the most speed out of any of the segments (See bar graph labeled Total MPH per Segment).

To conclude my analysis, I would recommend that an attempt to slow the overall speed of traffic should be in order. Doing this will greatly decrease the chance of motor vehicle accidents, in turn decreasing the mortality rate of driving on the highway as a whole. To do this I would recommend first going after the hot zones that were discovered in the analysis. Placing a Happiness State trooper in between segment six and segment seven would catch the most speeders. Once segment six and segment seven are dealt with I would recommend continuing toward the latter segments as these have more speeders and accumulated more speed than the first few segments. After the stricter enforcement of the speed limit on the Road to Oblivion Highway, the overall speed of traffic will decrease creating a safer driving environment for the drivers on the highway while contributing funds to the state through citations.

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