

How can we stay safe in

- An observational study about Chicago's traffic incidents

Considering the number of people living in Chicago (2.71 million (2019)), there are a lot of people driving daily in and out of the city. Traffic incidents and fatalities have not seen any downwards trends lately, it's important to do something about the massive amount of unnecessary deaths incidents. Doing an observational study about Chicago's traffic incidents could reveal possible factors that contribute to the high numbers of incidents, potentially allowing us to save more lives in traffic.

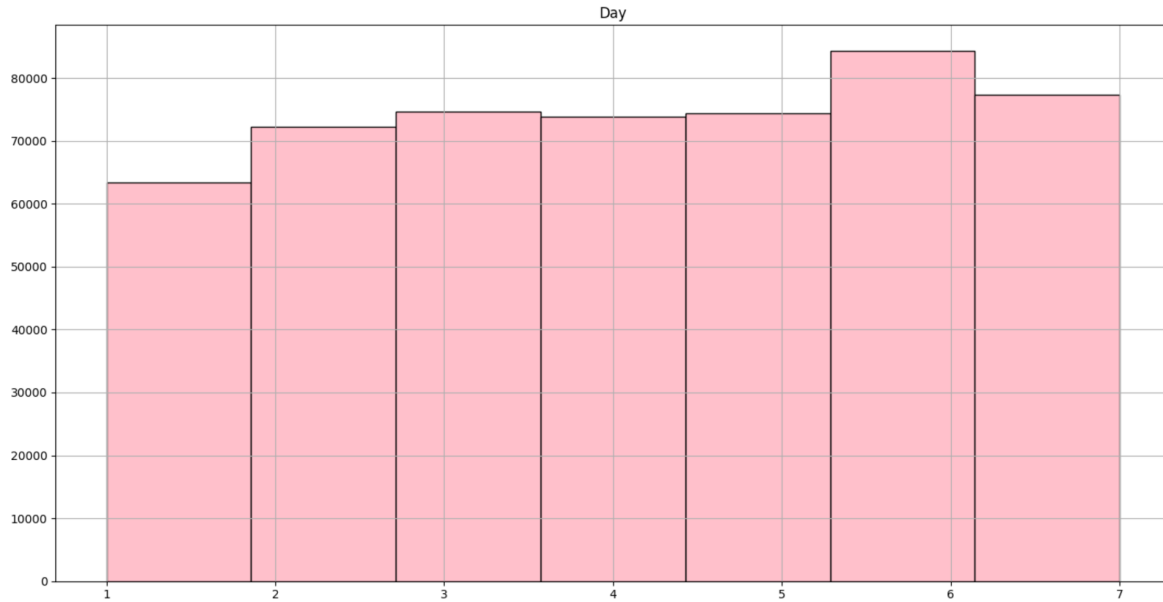
All data is pulled from "[Traffic Crashes - Crashes | City of Chicago | Data Portal](#) " Most data entries are from 2017-present time (very few are from 2015-2016).

Due to the size of the dataset -including over 525k entries-, I focused on some key areas instead of doing a complete analysis, in hopes of some interesting findings. I filtered by several factors in different batches.

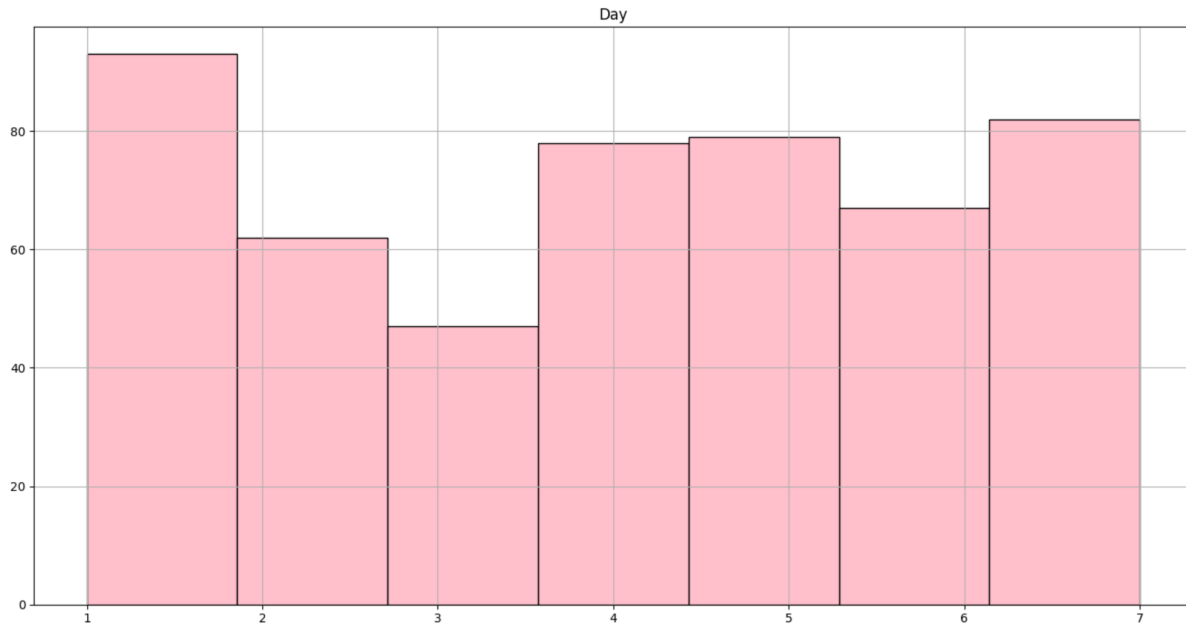
The first analysis looked at how all incidents and the fatal incidents¹ compare time-wise. Initial thoughts was that the more people are driving, more incidents would occur.

The graph under plots the amount of incidents per day of the week. Saturday is a popular day to go out, considering most people are out of work and want to go out. The increase in people in traffic is a clear indication of the spike in incidents. One can also observe an average difference of about 5 thousand incidents on Monday compared to the other days.

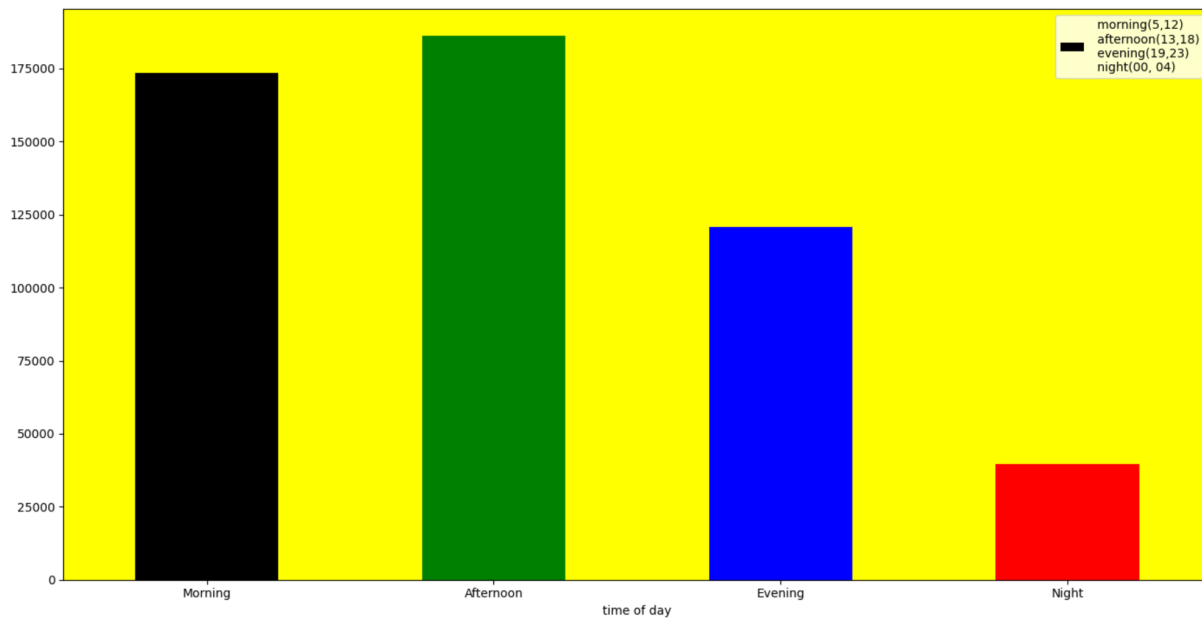
¹ Fatal incidents are defined as accidents that causes one or several people to die.



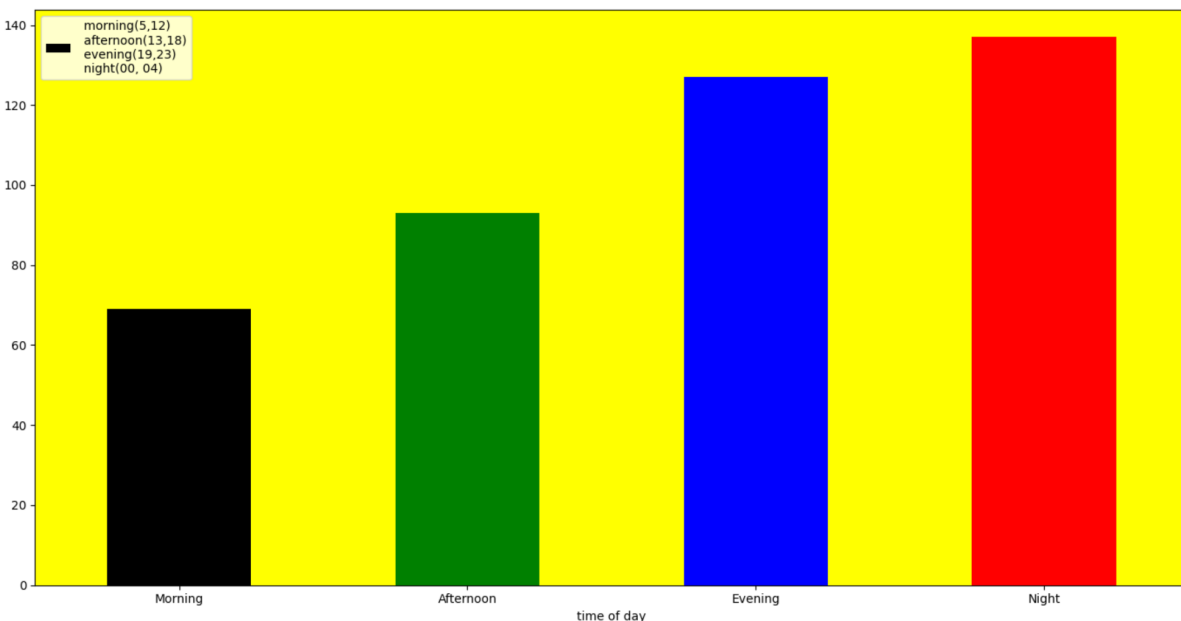
Using the same method of thinking, that an increase in people increases the number of traffic incidents, one would think that the number of fatal incidents would have some correlation with traffic incidents. The graph plotted below represents the number of fatal incidents, who also estimated over \$1500 in damages. There were 426 of such observations. Mondays averaged over 35% more incidents than the rest of the days. Considering Mondays had a lot fewer incidents, one would assume the same for fatal incidents. In an attempt to find out why Mondays essentially is the most dangerous traffic day of the week, I further analyzed the times, in an attempt for further insight.



The graph below plots the time of day the traffic incidents happened. I have primarily grouped them into four different groups: morning, afternoon, evening and night. Going off the assumption that more people in traffic causes more incidents, one should expect an increase in incidents in the morning and afternoon, supporting. Since that's when people come and go to work. The data is as expected, supporting the current assumptions. -Night is only defined for 4 hours, which is partly why the number of incidents is insignificant compared to the others.



So far it seems like the data between all traffic incidents compared to the fatal incidents bear no meaning. Although they don't follow the same patterns, it could be useful to continue the comparison, to see if they have an inverse pattern, meaning they are opposites of each other. The following graph shows the same pattern as all the others -the opposite of the traffic incident graphs. Nights, followed by evenings have almost double the number of fatal incidents



Taking a deeper dive in the surge of fatal incidents on Mondays, we can observe that night incidents are dominating.

