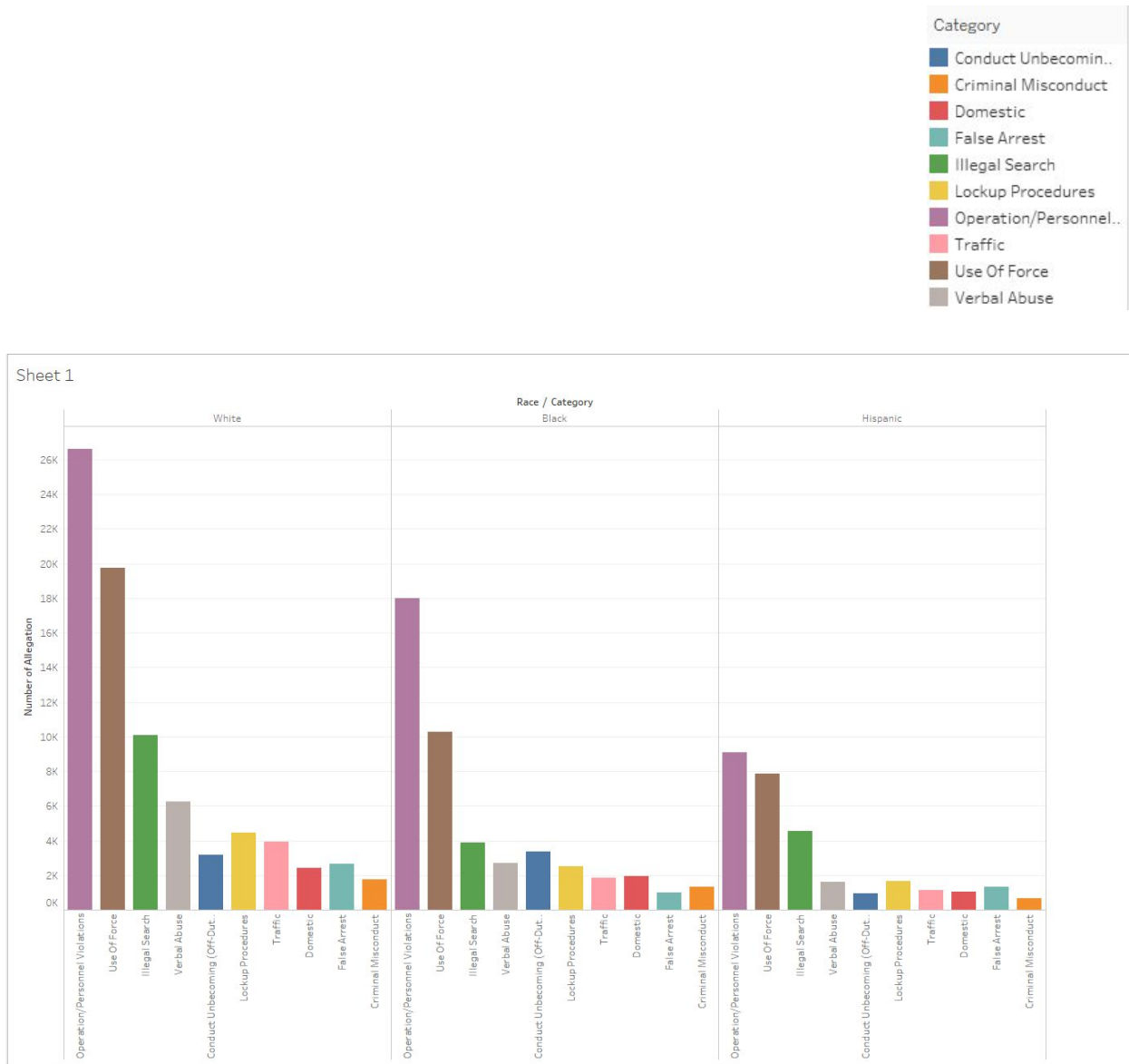


Checkpoint - 2: Visualization

1. Visualization of the relationship between type of misconduct and the race of the officer



- **Quantitative Analysis:**

From the above data visualization we observe that the race with the most allegations filed against them were white officers, followed by black and then Hispanic. We've trimmed our results to top 3 races, as they form the majority of the allegations about 60% of the total allegations filed.

Regardless of race, the most common type of misconduct was 'Operation/Personnel Violations', the second most common was 'Use of Force', third most common was 'Illegal Search', the least common misconduct was 'Criminal Misconduct'.

We have disregarded the records where the officer race is 'NULL', 'Asian/Pacific Islander' and 'Native America' for the purposes of this visualization as these races constitute a small fraction of the total number of officers. They are, however, still a part of the calculations as far as percentages go.

From the result it is evident that the white officers have the most allegations filed against them, they constitute about 28.85%, with blacks having about 18.86% and Hispanic constituting about 11.95% of the total allegations filed against officers of all races. Asian/Pacific constitute to about 1.5% of the total race and Native American/Alaskan Native constitute 0.25% of the total allegations.

- **Qualitative Analysis:**

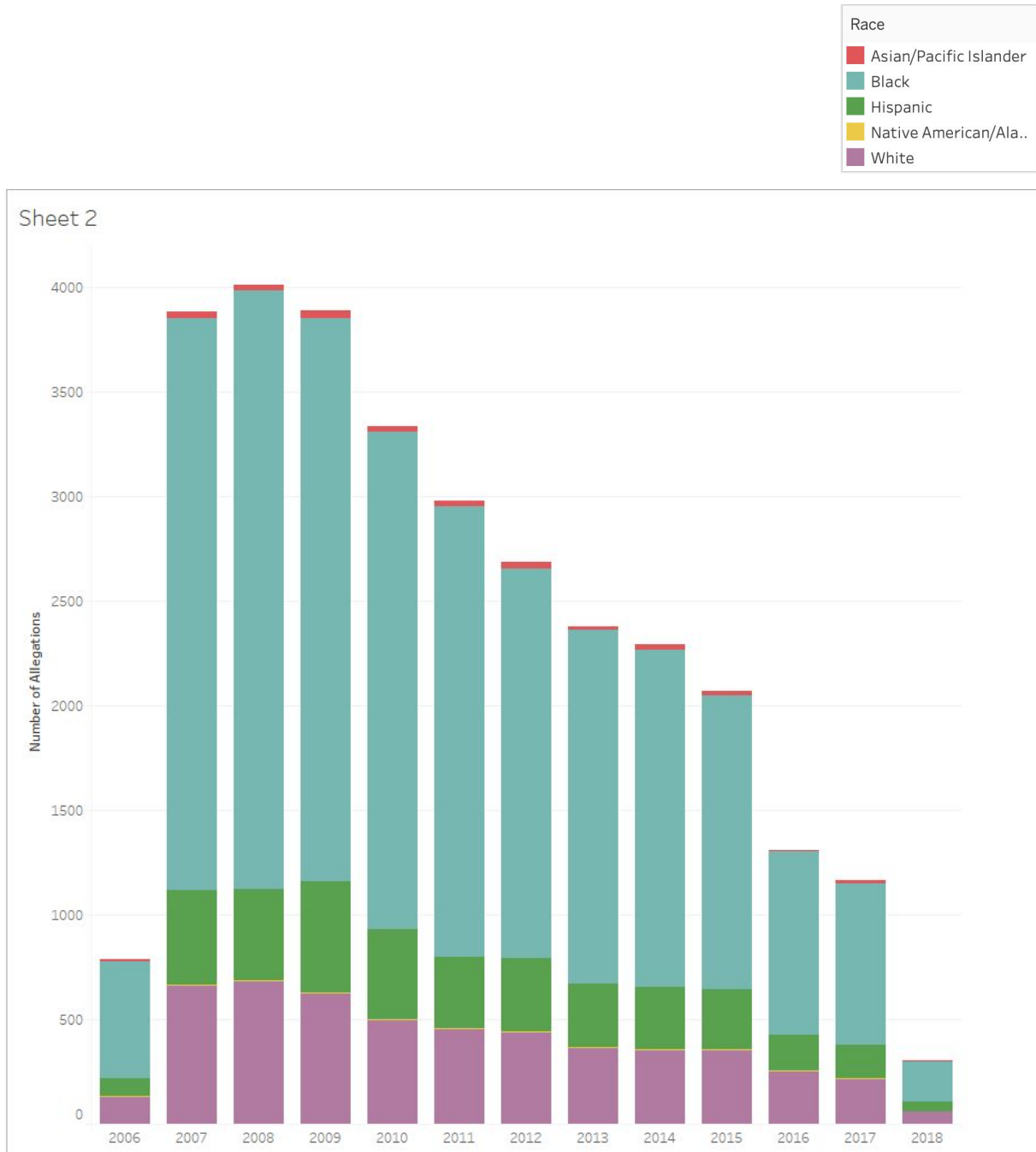
The percentages of the top 3 allegations for each race divides as follows:

	Operation / Personnel Violations	Use of Force	Illegal Search
White	36.9%	27.38%	13.98%
Black	38.15%	21.82%	8.25%
Hispanic	30.45%	26.39%	15.29%
Asian/Pacific	30.93%	26.17%	15.74%
Native American/Alaskan Native	29.78%	28.52%	13.16%

Table 1: Division of top 3 misconducts for each race

From Table 1 we can see that Operation / Personnel Violations contribute to about almost 30% of all allegations filed against a particular race for almost all races. We see a similar trend where the other two allegations constitute almost the similar amount across all the allegations.

2. Visualization of the number of allegations filed by a race over the years.



- **Quantitative Analysis:**

The bar chart above depicts how the number allegations has changed over time and it is colour coded to differentiate among various races. We can see a downward trend in the number of allegations filed from 2008 all the way up to 2018. It is particularly noticeable that the percentage of allegations made by the victims belonging to black race has remained constant

over the years. As seen in the following *Table 2* we notice that the black race constitutes to more than 66% of the allegations throughout the years. A break up of the percentages of the allegations filed by different races have been given below:

	White	Hispanic	Black	Asian/Pacific
2006	16.56%	11.21%	71.08%	1.14%
2007	16.99%	11.55%	70.6%	0.85%
2008	17.01%	10.90%	71.35%	0.07%
2009	15.99%	13.67%	69.35%	0.97%
2010	14.91%	12.9%	71.37%	0.81%
2011	15.22%	11.43%	72.32%	1%
2012	16.23%	13.13%	69.44%	1.19%
2013	15.18%	12.82%	71.27%	0.71%
2014	15.41%	13.1%	70.26%	1.22%
2015	17.14%	13.96%	67.67%	1.11%
2016	19.25%	13.06%	66.99%	0.68%
2017	18.55%	13.74%	66.23%	1.46%
2018	18.41%	15.78%	64.8%	0.98%

Table 2

- **Qualitative Analysis:**

The data shows that although the total number of allegations has constantly been decreasing over time from 2006 to 2018, the percentage of allegations by race has been more or less constant for each race except in the case of Native American/Alaskan Native victims. The total number of allegations by Native American/Alaskan Native victims has been around the same number, so there is a percentage increase in the number of allegations by them. This could suggest that over time, this particular race has been increasingly targeted. Let's also keep in mind that not all misconducts might be reported as allegations. The fact that the number of allegations of this race has remained constant suggests that either the population of this race has increased over time with respect to other races resulting in larger percentage of allegations, or that most other races when faced with police misconducts just chose to ignore it rather than report it as an allegation, whereas Native American/Alaskan Native victims chose to report it as an allegation consistently.

Tableau:

Tableau is the industry favorite tool to perform data exploration. It is really easy to develop visualizations and create dashboards for presentations. Tableau allows a lot of easy to use and quality of life features for data manipulation. One of the challenges we faced while using Tableau was the server connectivity issues and incompatibility with drivers on MacOS. There isn't much support on their website, it redirects to a webpage which does not exist.

Reasons for deviating from projects proposal:

While visualizing the data we realized that there wasn't much of a difference between Q1 and Q2 in our project proposal, and it was difficult to draw insights from Q2 as all the lawsuits in our data were successful. This led us to alter our questions.