

Mass Shootings in the United States of America (1966-2017)

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Introduction:

The US has witnessed 398 mass shootings in last 50 years that resulted in 1,996 deaths and 2,488 injured. The latest and the worst mass shooting of October 2, 2017 killed 58 and injured 523 so far. The number of people injured in this attack is more than the number of people injured in all mass shootings of 2015 and 2016 combined. The average number of mass shootings per year is 7 for the last 50 years that would claim 39 lives and 48 injured per year.

Dataset Description:

With the help of an extensive dataset, my project aims to shed light on the trends in US mass shootings over the past 6 decades, highlight the number of casualties, investigate the significance of attributes such as the year of an incident, racial background of the perpetrator and other related data points.

<https://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data/>
<https://www.kaggle.com/zusmani/us-mass-shootings-last-50-years>

The dataset contains Serial No, Title, Location, Date, Summary, Fatalities, Injured, Total Victims, Mental Health Issue, Race, Gender, and Latitude and Longitude information.

Sr. No	Variable Name	Description	Data Type
1.	Serial No	The serial number of the attack.	int64
2.	Title	The title/name given to the attack.	char
3.	Location	The location where the attack took place.	char
4.	Date	The date on which the attack happened.	date
5.	Summary	Details about the attack, attackers, and the victims.	char
6.	Fatalities	The number of fatalities caused.	int64
7.	Injured	The number of people injured during the attack.	int64
8.	Total Victims	The total number of victims that were affected by the shooting.	int64
9.	Mental Health Issue	The issues related to mental health of the person committing the attack.	char
10.	Race	The Race to which the shooters and victims belonged to.	char
11.	Gender	The Gender of the attackers/shooters.	char
12.	Latitude	The geographical measure to detect the location of the attack.	double
13.	Longitude	The geographical measure to detect the location of the attack.	double

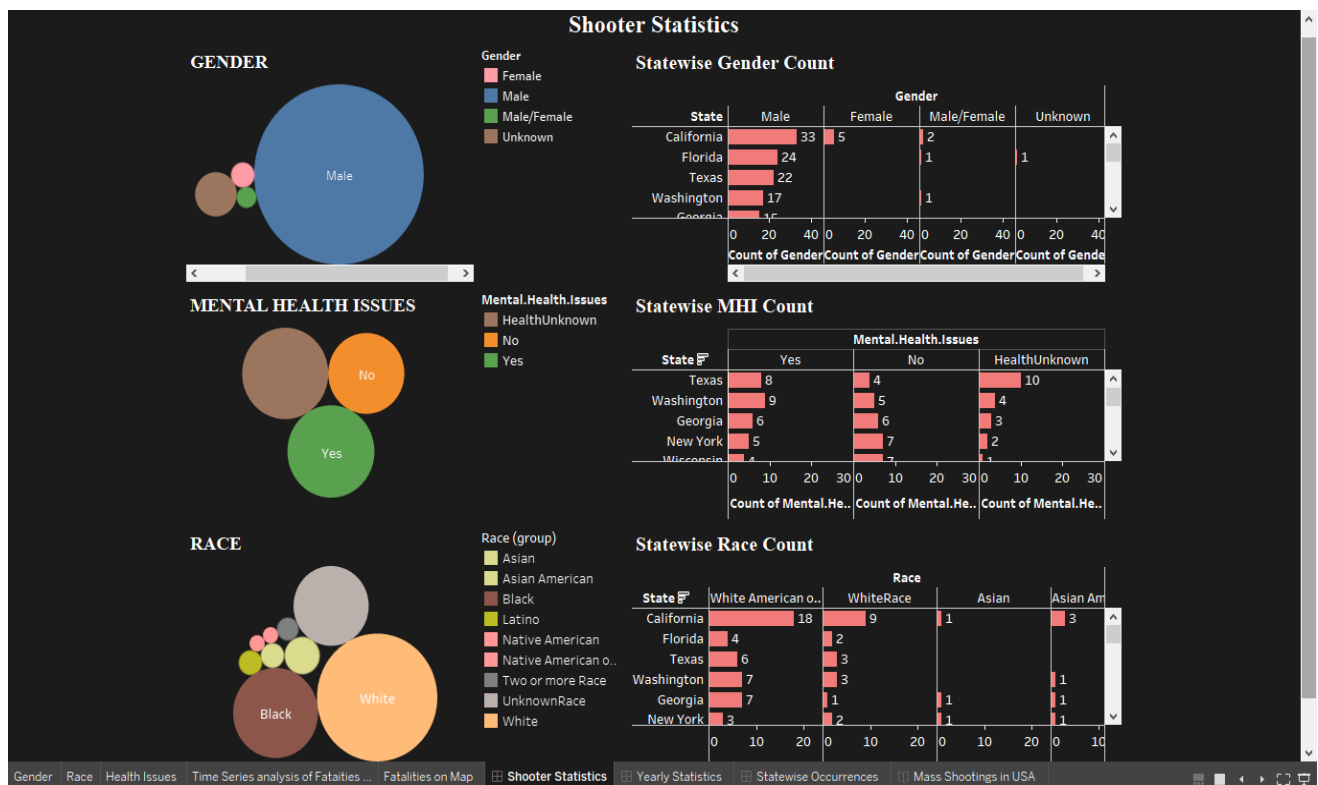
Visualizations:

[**Note:** I have used the background colour as black as the tone of the visualization is serious. I have used bar charts and line graphs that can easily interpret and show the trends]

I have visualized three dashboards and finally made a story to connect all the dashboards. The three dashboards are as follows:

1.Shooter Statistics:

With the recent shootings at YouTube carried out by a female perpetrator, I was curious to know about the distribution of male and female perpetrators in past shootings. Although I hypothesized the number of male perpetrators to be higher, I was surprised by the humongous difference in numbers. Also, it was important to gain insights on whether a shooter has some kind of mental health problem or not. Often, there are preconceived notions about the race of perpetrators in violent crimes hence, I was interested in exploring the distribution of race of the shooters for the mass shootings. All these questions were answered through the visualizations below. Packed bubble charts were used to visualize them. Also, the state wise Gender count, Mental Health Issues count, and Race count were visualized using Horizontal Bar Charts.



Findings from the Shooter statistics dashboard:

The great majority of perpetrators were male, who committed 365 of the shootings, i.e., 91.5% of the cases. The remainder is: Female: 1.8%, Male/Female: 1.3%, Unknown: 5.5%.

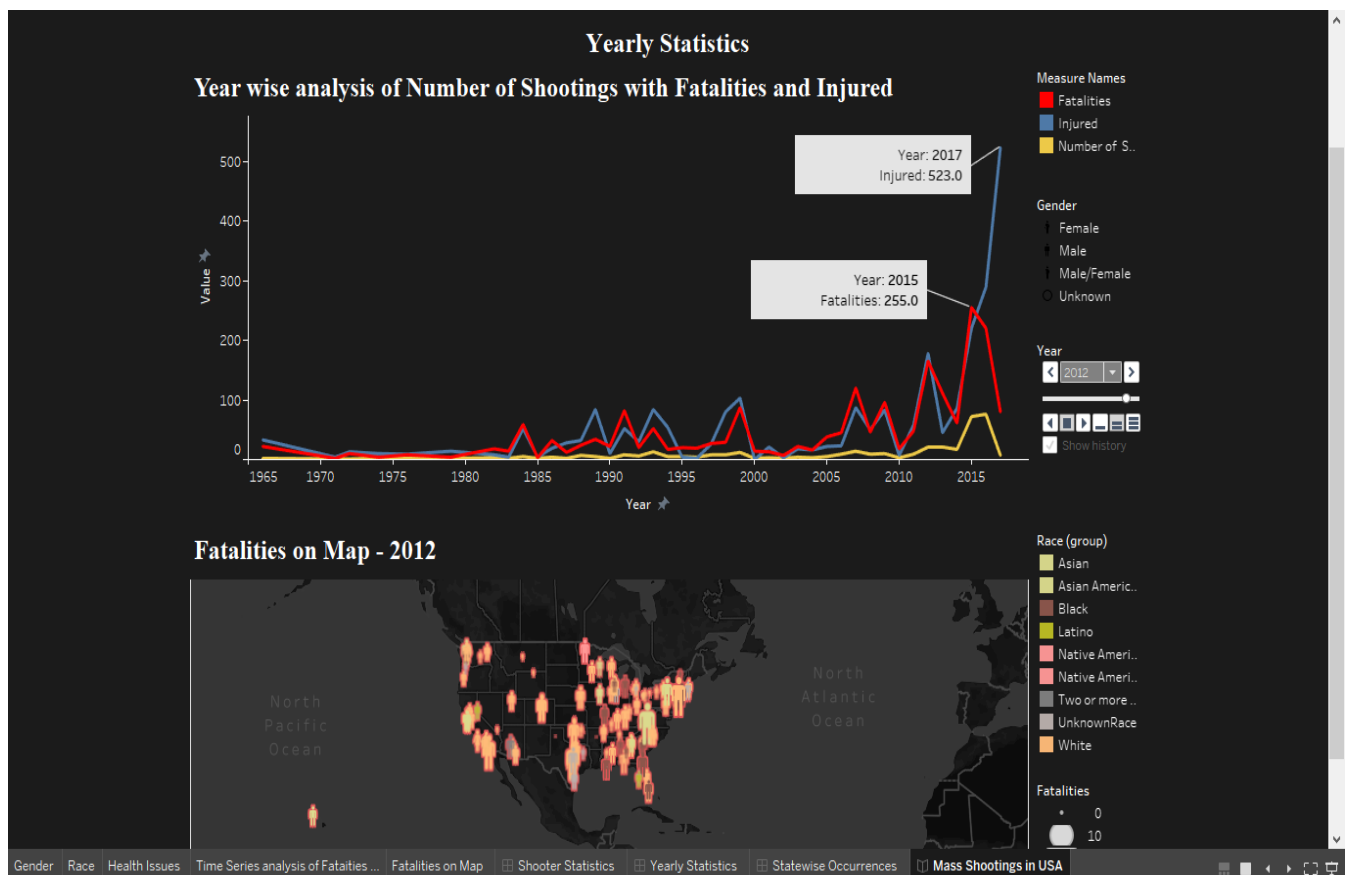
Shooters have usually been identified to have a Mental Health Issue.

Shooters usually belonged to the White race as compared to the rest of the other races. In the past 50 years, Shooters were maximum times been identified as **White** followed by **Black** race.

2. Yearly Statistics:

The next dashboard shows how the number of mass shooting incidents have changed over the years. I found that the number of incidents, fatalities, and injuries have been increasing over the decades. I normalized the numbers according to the population in each year to incorporate the impact of changing population. Despite that, we can see an overall increase. To show this trend, I decided to make a line graph, which makes it very easy for the user to read and identify trends. It also enabled us to show the number of fatalities, shootings, and injuries in one graph. To maintain consistency through the website, Fatalities are depicted using red color.

The below sheet is used to show year wise fatalities on the map. I have used maps so that by incorporating years in pages, we can see how the count of fatalities has increased/decreased in each year. Also, I have used colours for the different race groups as well the gender of the shooter, so as to have a detailed information about which race group, gender have caused the maximum number of fatalities in a particular year.



Findings from the Yearly statistics dashboard:

The above line graph shows that in most cases the number of injured people is higher than the number of killed ones.

We can see that 1989, 1998 and 2017 have an exceptionally high number of injured people.

The year 2017 has the highest number of injured people with a count of 523.

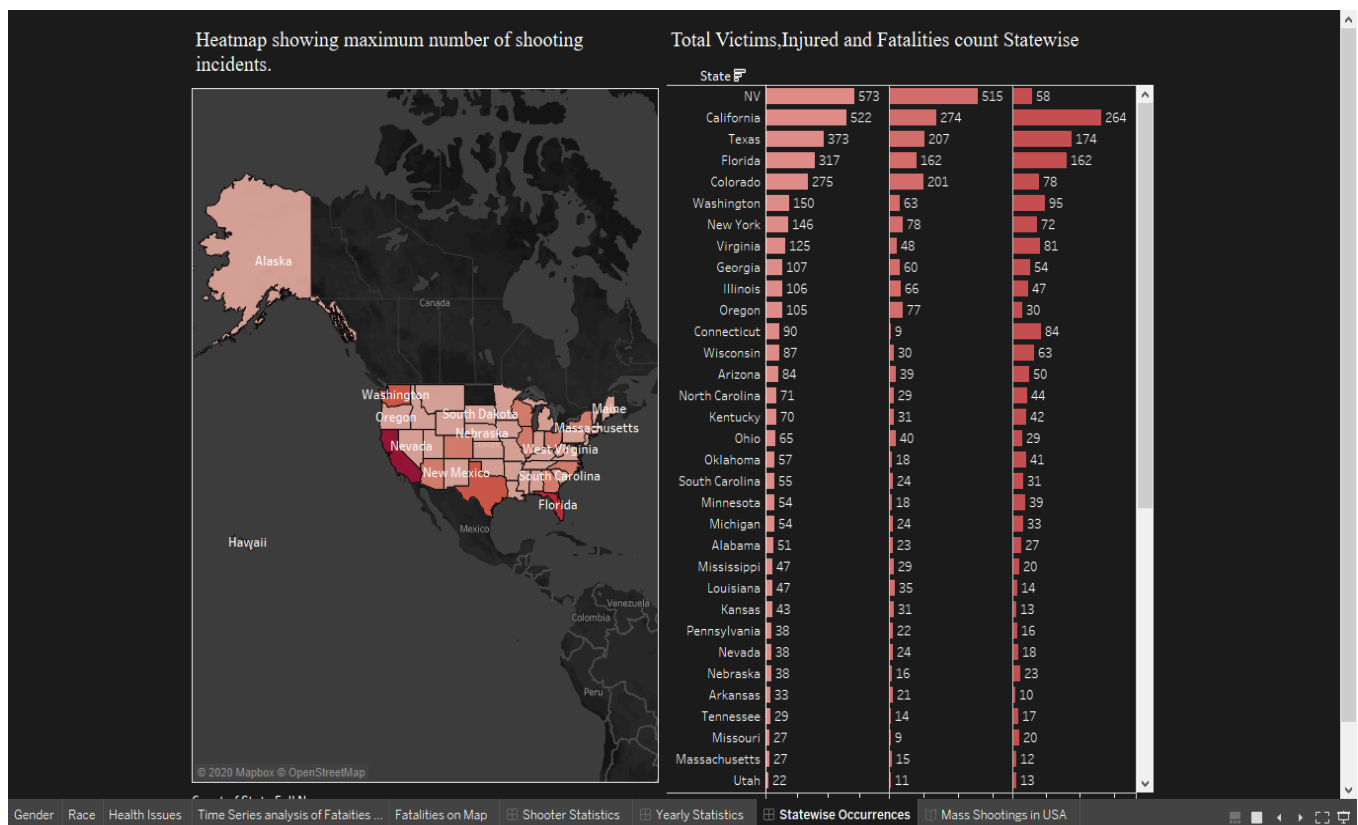
The number of fatalities were most elevated in the year 2015 counting up to 255.

Also, the number of incidents have increased since the year 2012, with the maximum number of 76 total incidents in the year 2017.

3.Statewise Occurrences:

In this dashboard the first sheet visualizes the heatmap showing the maximum number of shooting incidents in each state. To achieve this, I had to first extract the state code for all the shooting locations. I have ended up showing this through a choropleth map in Tableau. The states are shaded according to the count of total incidents that took place in a particular state. We kept the color of the choropleth to be shades of red to maintain consistency in the website. Darker shades correspond to higher numbers, keeping it consistent with what a user perceives in the first look.

In the next sheet, State wise count of the total victims, Injured and Fatalities have been visualized to show the state with the highest number of victims, injured and fatalities.



Findings from the State wise occurrences dashboard:

California is the state with the highest number of incidents counting with a total of 40 incidents.

This is followed by the state of Florida, Texas, and Washington.

When viewing the number of victims, we see that Nevada has a very high number of victims as compared to other states.

The number of injured were also highest from the state of Nevada.

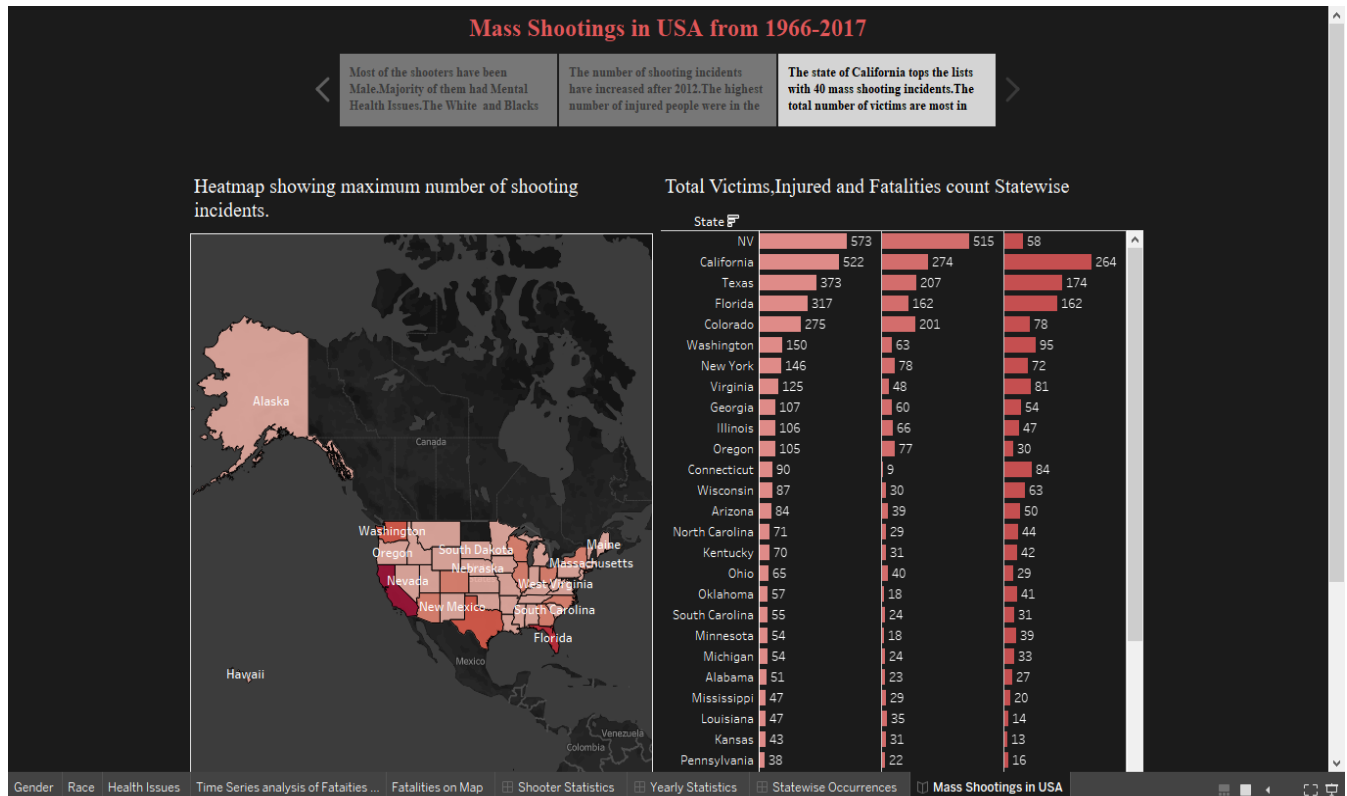
However, the number of fatalities were high in the state of California followed Texas, Florida.

Story: Mass Shootings in USA from 1966-2017

Finally, I have made a story in tableau connecting all the three dashboards.

The story visualized depicts the following results:

- Most of the shooters have been Male. Majority of them had Mental Health Issues. The White and Black were the race of the majority of shooters.
- The number of shooting incidents have increased after 2012. The highest number of injured people were in the year 2017. Count of fatalities were highest in the year 2015.
- The state of California tops the list with 40 mass shooting incidents. The total number of victims are most in the state of Nevada.



Conclusion:

Hopefully, seeing the numbers laid out help us fathom the extent to which these horrific incidents are impacting human survival and allow us to continue the current dialogue of what can be done to bring down the spike of these atrocities.