Fatal accidents in USA

How to prevent car accidents is always an important issue
not only for the government but also for the citizens.

This research is aiming at FARS data and trying to find data patterns in different states.
Which state has the highest fatalities in car accidents?
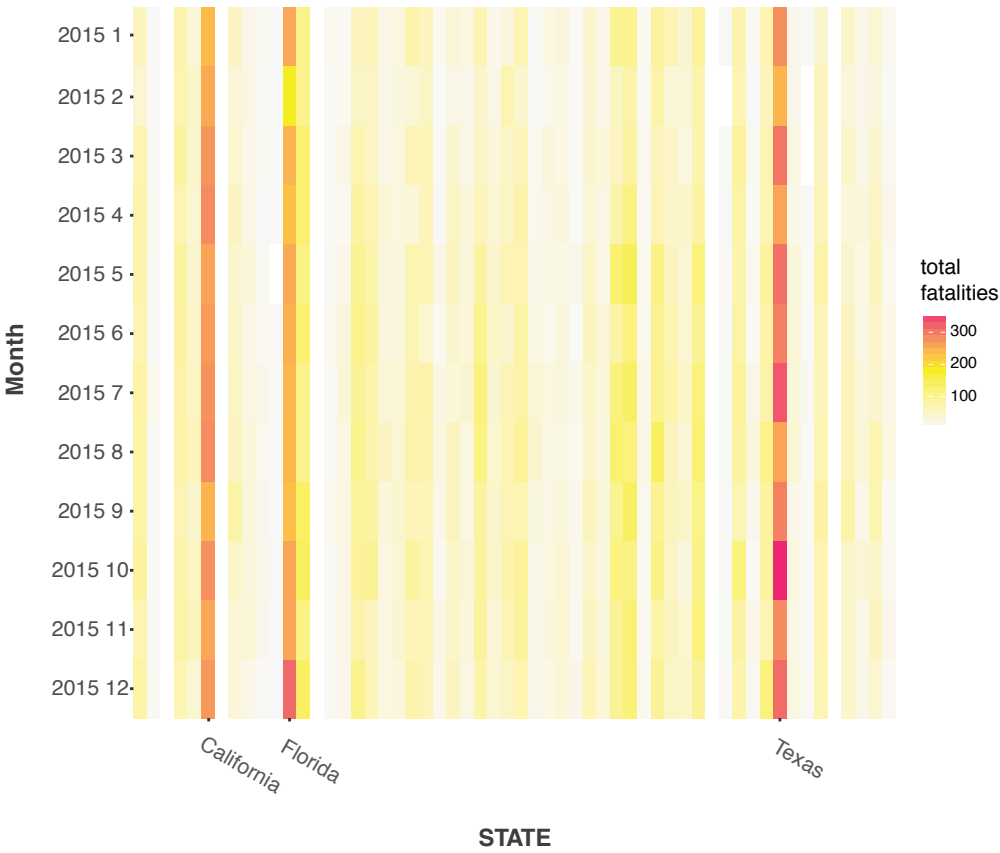What is the main reason causing these accidents?
Were the accidents caused by human or nature factors?

| Research Method | Zhengyan Yu | 3.15.2017

1. Statistic description

There are 31,607 accidents happened in United States in 2015. These accidents caused at least one person dead. However, the most severe accident caused 10 persons dead. The average fatalities in each car accident is 1.091. Most of the car accidents caused one person dead. The first quarter, the third quarter and the median are 1 which means the distribution of fatalities is skewed to the right.

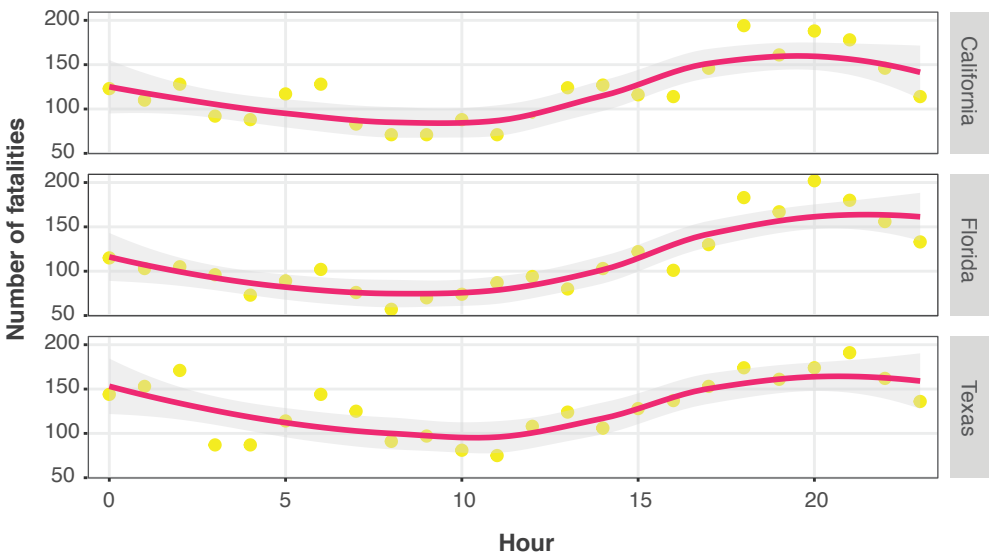## 2. Overview of fatalities in 2015

This graph show the overview of fatalities in 2015 in United States. Each column (x-axis) represents a state and the y-axis represents the months. The colors represents the total amounts of fatalities. The yellower the column is, the more fatalities were caused in car accidents in that month.

From this graph, we can see that most of the colors of the states are yellow which means these states are relatively safer than the states which colors are red. The much more dangerous states are California, Florida, and Texas.

Why the three states have more fatalities in car accidents than other states? What factors mainly caused fatalities in the three states? Can we use more detailed time to find the reasons?
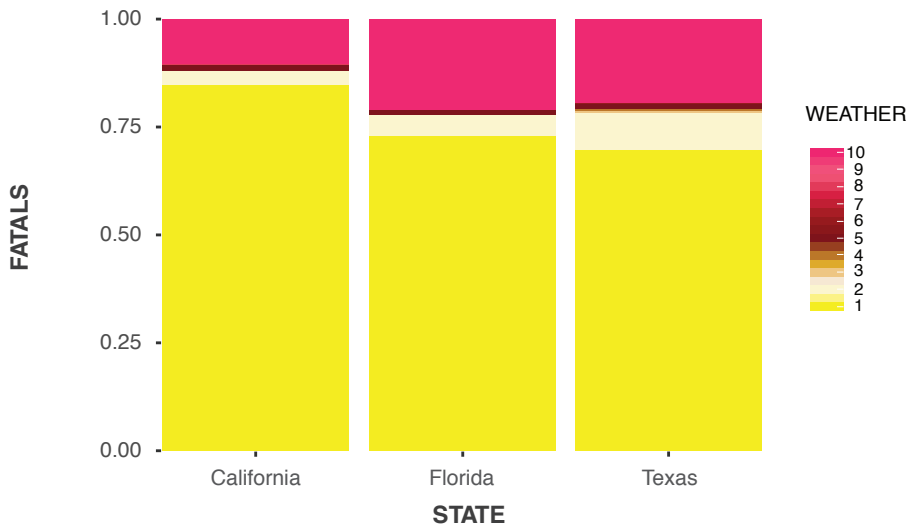
3. Three states' total hourly fatalities in 2015

In this part, I assumed that car accidents have little relation to "months" and "seasons" because in previous part, the colors of each states are much consistent in each month. I assumed that the car accidents have relation to "day" factors, which means the factors such as daily activities are the main reasons causing car accidents in the three states.

In this graph, we can see that the lowest fatalities happened at 9 am to 10 am. This pattern makes sense because in this period most of the drivers already arrive their companies. Thus, less car accidents happened in this period of time. The peak of the distribution is at 6 pm to 8 pm which most drivers go home and will result in more car accidents especially when the drivers are tired.

4. Weather factors

This graph shows how weather factors effected the car accidents in the three states. Most of the car accidents happened when the weather was clear (which color is yellow), and some car accidents happened when the weather was cloudy (which color is pink).