This data include the information about where, when, and the type of incident happened through a whole year.

We can use it to find which area(city/location), season has the most incidents, and by group the description of the fire incidents, we can figure out which area has the most frequent incidents that can be avoided.

So, we can help fire department save time and resources on more important activities.

By checking the incident type and its code, we found that we can group incident type in more general type by checking the first number of its incident type code, for example, all incident type starting with 1 is related to the fire incident, 5 is about the public service, 7 is about the false alarm Etc...

We stripped the empty space for all columns and rows.

Ignore the incident type code that not in the given code list.

The incident location with empty space, we fill them with ‘unspecified’ to indicate an unknown location.

We use panda for our data visualization,

Use histogram, pie chart in matplotlib to show the trends of our data. And help us to analyze the data and get conclusion.

CSv library to read the data

We use counter for summing the dictionaries. For spring, we sum data in February, march and April.

Since fall has the most incident number in a year, and every season, false alarm is take the most part of all incidents number, so we want to know the top 5 reason that cause false alarm in fall.

From the graph, we can see that malicious false alarm takes about half of the top 5 reasons that cause false alarm.

Then, if we can get the most potential location that will have false alarm, then the fire department can pay more attention on that area, by adding monitors or ask police department pay more attention on it.

So when false alarm happens, they can cancel it faster to save time.

By checking the distribution of incidents in different location, we know that boston area has the most number of incident report, if we combine our result before, we can assume that the central station area in boston area will have the most malicious false alarm in the fall.

Then we want to verify out assumption.

Our conclusion is that the false alarm is one of the most reason that cause the fall season in the year 2018 has the most incident reports than other seasons and the false alarms take a big part of the incident report in fall

By checking the top seasons of false alarms in fall, we know that the malicious false alarms takes half of them and the top reason of false alarm in fall is the malicious false alarm

Then we make a distribution histogram to get the top areas that has the most incident reports,

We found that Boston rear has the most incident reports.

We make an assumption that the central area in Boston area is the main source that cause the intentional false alarm,

Then we verify our conclusion by grouping our data and we found 767 intentional false alarm happens in Boston fall.

So we think that by pay let fire department pay more attention on the central station area in Boston, the fire department can detect the false alarm faster to save time. And recourse.