

# Final Project Milestone #4

CIS 9440 - Data Warehousing for Analytics

Final Project Milestone 4

Group Number - 2

Student(s) – David Freitag (working independently)

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1) List your final set of 3-5 KPI's.

- Percentage of crimes resulting in arrest by location over a time period
- Total crimes compared to daily temperature over time period
- Number of crimes by location over a time period
- Total crimes compared to graduation rate over a time period
- Total crimes compared to unemployment rate over a time period

2) Short description of Visualization that will be used for each KPI. Why will you use that type of visualization?

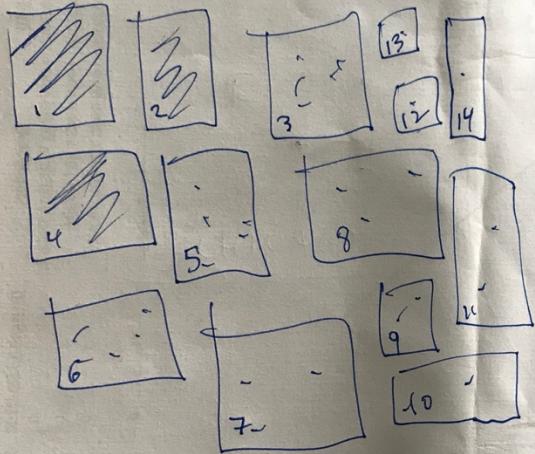
- Percentage of crimes resulting in arrest by location over a time period

- a) To visualize this, I will use a treemap where each box will represent a district, and the size and shade of each box will be determined by the percentage of crimes resulting in arrest in that district. This will allow easy identification of the districts with the highest/lowest percentage of crimes resulting in arrest, as well as the degree of difference between them.

I considered using the number of crimes in each district to determine box size, but I decided to use the same measure (percentage of crimes resulting in arrest) for both the size and shade, because the goal is to compare the percentage of crimes resulting in arrest to determine the districts where criminal activity is more likely to result in arrest. Additionally, the population of each district could differ significantly, so using the total number of crimes per district for box size could be misleading (i.e. it would make districts with larger populations appear to have a higher crime rate).

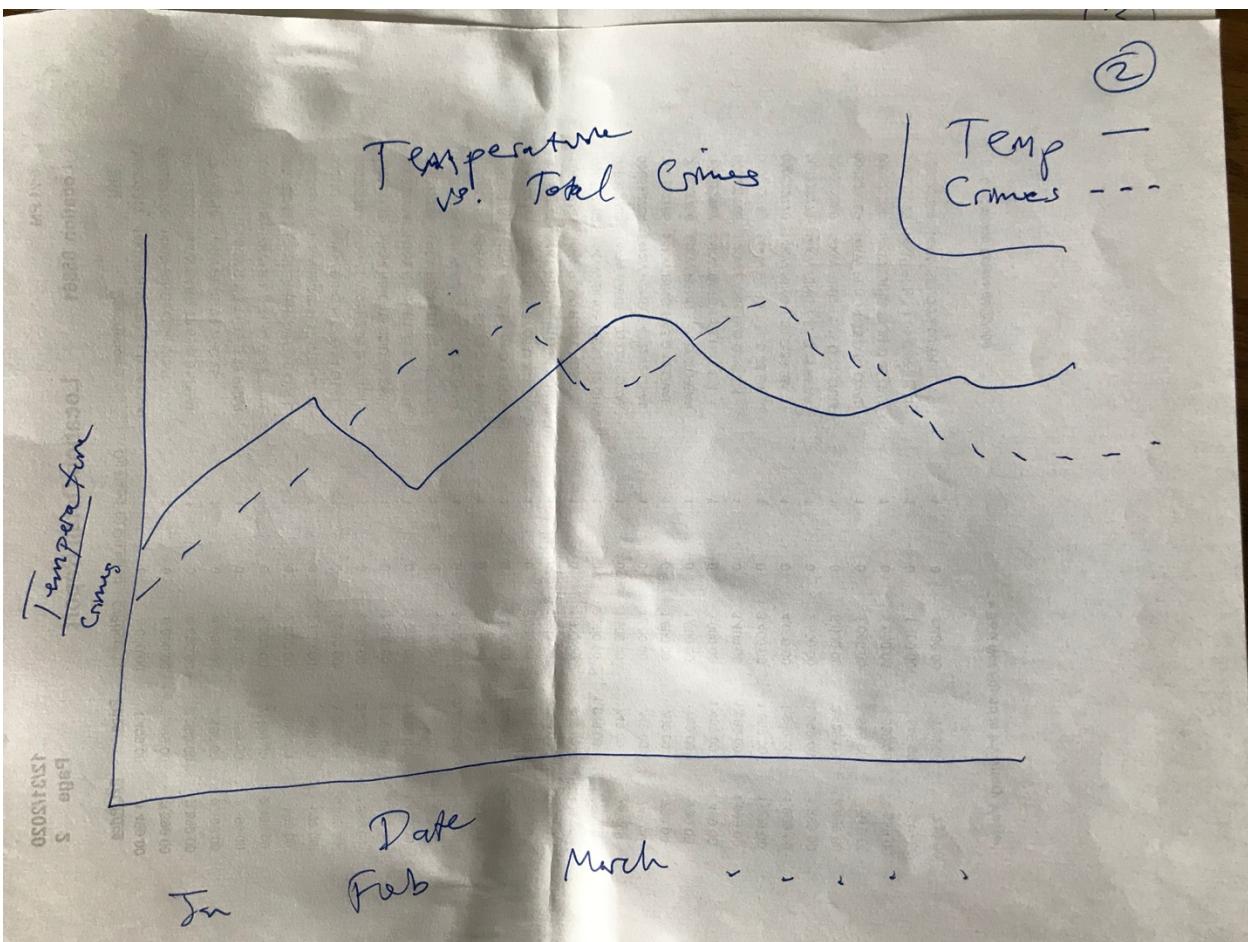
- Total crimes compared to daily temperature over time period
    - a) This visualization is relatively simple: two lines, where one line is the daily temperature and the other is the number of crimes that occurred. This will show the relationship between temperature and the amount of crime. This could be used to determine staffing levels during particular months where the temperature is expected to change, and it could be used to forecast future crime rates depending on predicted temperatures.
  - Number of crimes by location over a time period
    - a) This will be a map-based visualization that will show a larger circle for a particular location if more crimes occurred at that location over a time period, and a smaller circle if fewer crimes occurred. The map will be navigable, will show street level detail, and will include the ability choose which district to visualize.
  - Total crimes compared to graduation rate over a time period
    - a) This will show total number crimes compared to the graduation rate in Chicago Public Schools for each year. This will be a bar graph and line graph combination, with the bar representing the total number of crimes and the line representing graduation rate. This will allow the viewer to determine a relationship between graduation rate and crime, which could allow for the prediction of next year's crime rate as a result of this year's graduation rate.
  - Total crimes compared to unemployment rate over a time period
    - a) This visualization will show two lines: one for unemployment rate and one for total crimes, and the lines will contain trend lines produced from linear regression to help the viewer better understand the relationship between unemployment and crime. Given the relationship observed between crime and the unemployment rate, one could predict next month's crime based on this month's unemployment numbers.
- 3) Paste a picture of your BI Application Wireframe (hand drawn image, google draw, any other format).

①



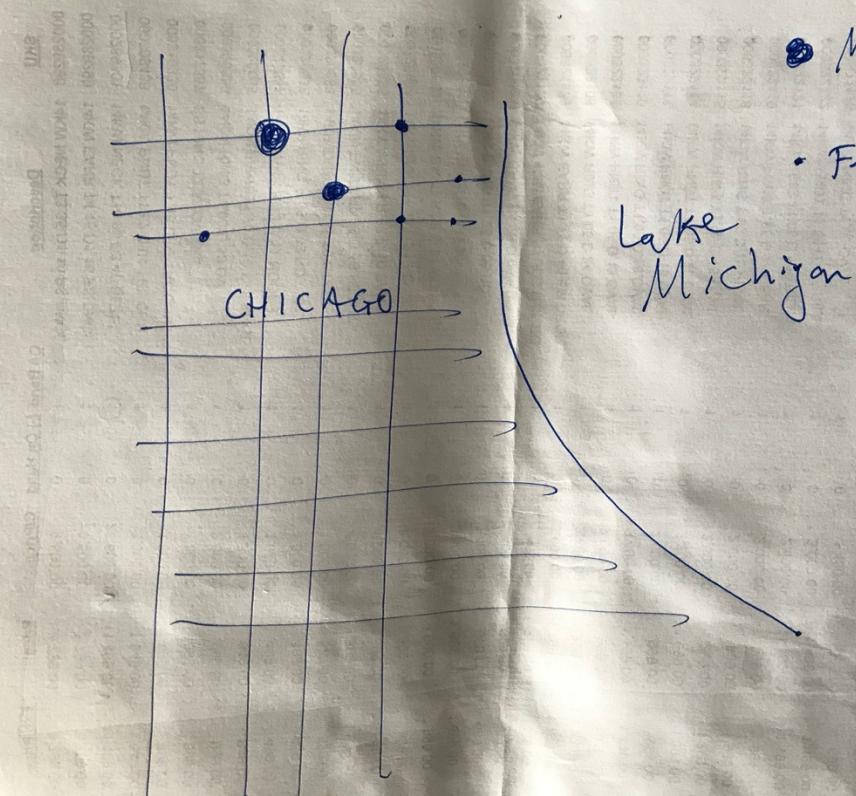
### TreeMap

- District
- % of crimes resulting in arrest

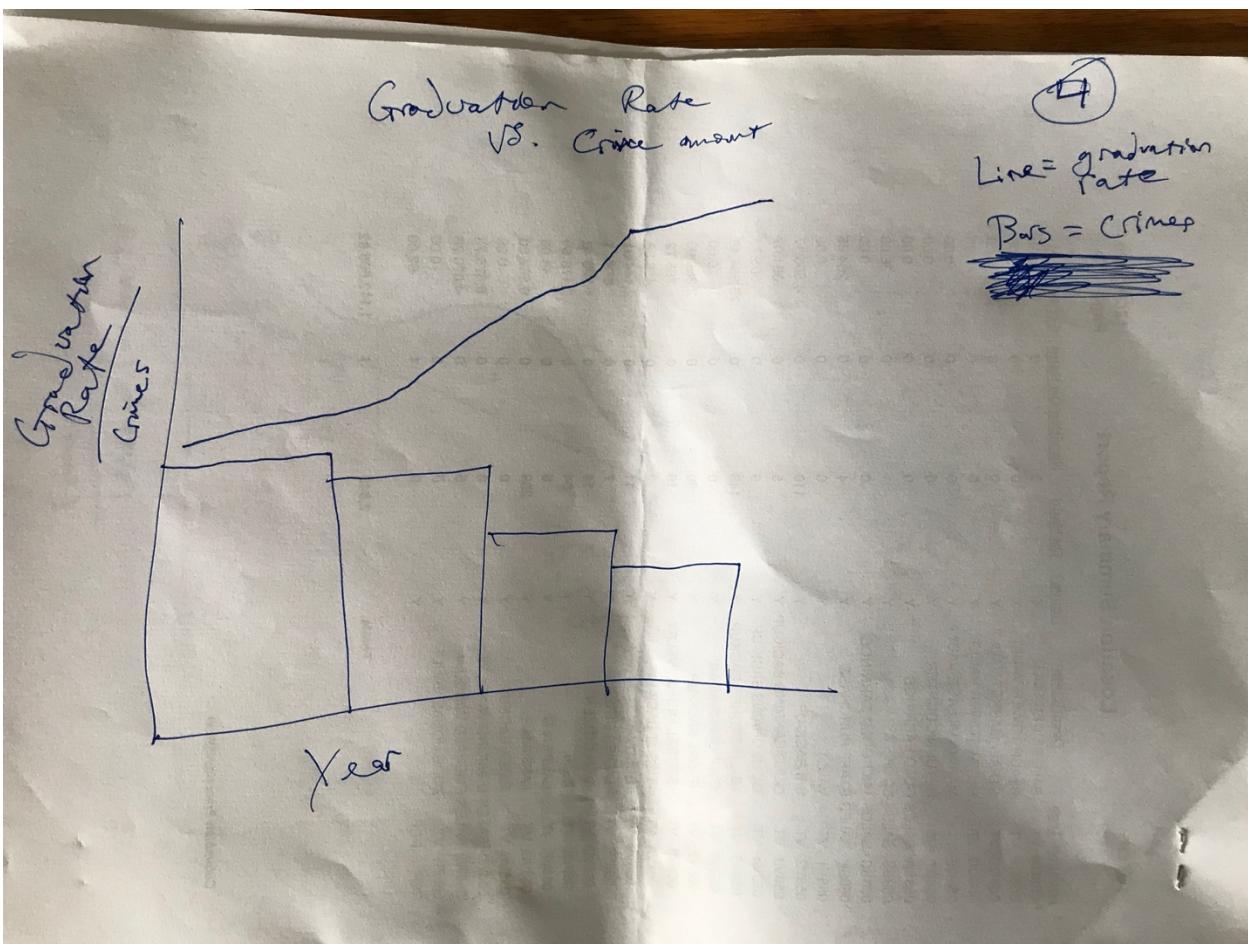


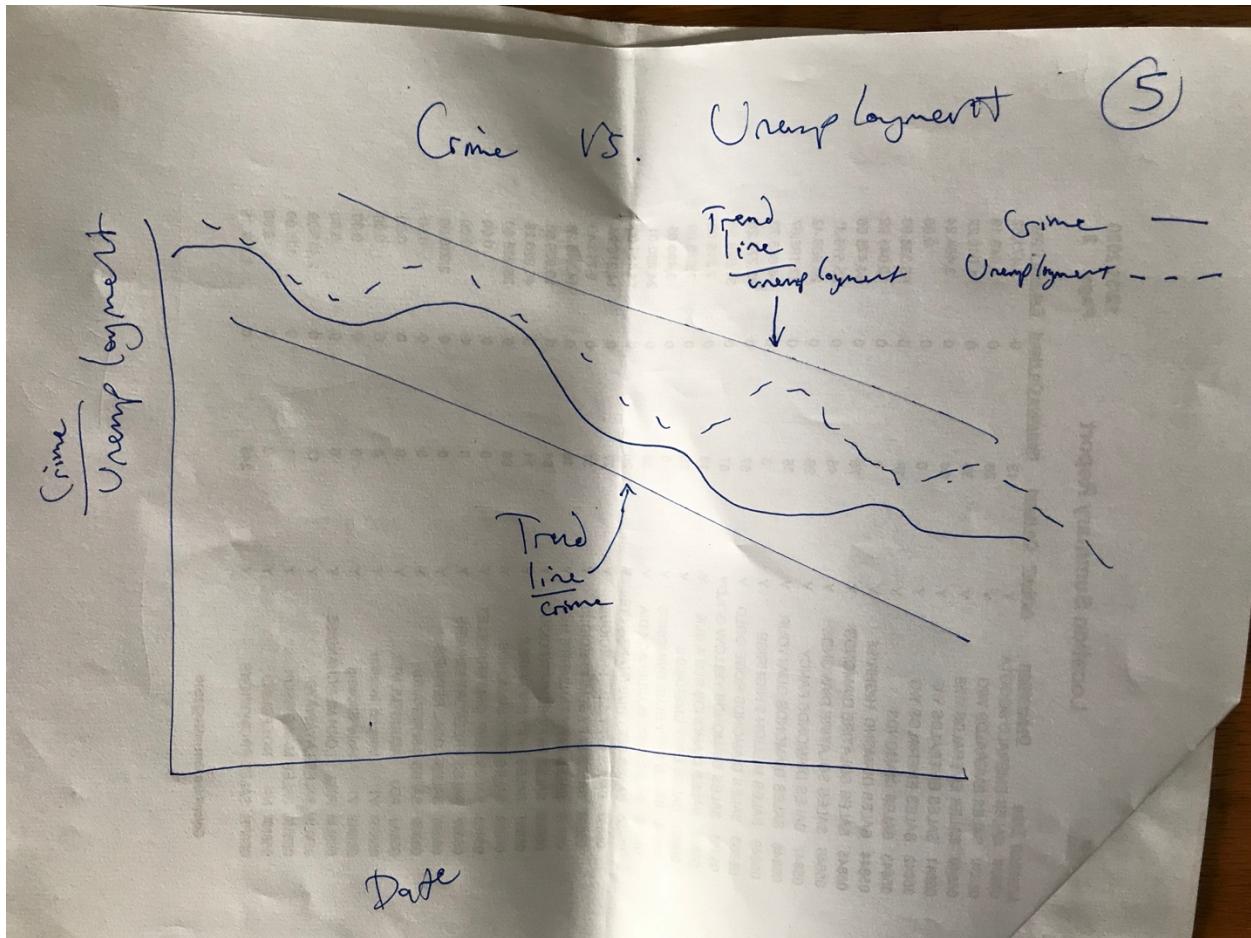
## Crimes By Location

(3)



- ② Many crimes at a location
  - Few crimes at a location





- 4) Link to your Tableau Public dashboard. (ensure this link works!)

My Tableau Public Page:

<https://public.tableau.com/profile/david.freitag#!/>

Chicago Crime Data Project Dashboard:

<https://tabsoft.co/3xQjZ9s>