Data Visualisation

#Quiz2

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1. Explain in your own words the formalism of Polaris - the types of data it covers. The paper mentions that it does not support the hierarchical structure of multi-dimensional databases. What would be some examples of such hierarchical structures of data?

A formalism for representing and analysing data is called Polaris. It includes a range of data kinds, including collections of numbers, strings, dates, and dates and these values. Polaris's ability to provide limitations on the data, such as those on the values that certain variables may have or on the connections between various variables, is one of its main characteristics. The report points out that Polaris does not support hierarchical data structures as one of its shortcomings. An organizational method known as a hierarchical structure places certain items "higher" in the hierarchy than others and arranges the data's components in a tree-like form. File systems, where folders can include subfolders, which in turn can contain files, and organizational charts, where a person can have a manager, who in turn reports to a higher-level manager, and so on, are examples of hierarchical data structures. Polaris opposes these hierarchical organizational structures.

Initially, the data is divided into dimensions and measures. The dimensions can be broken down further into Nominal, Categorical, and Ordinal values. The ordinal values have an inherent logical order while the categorical values do not (poor, average, good). The measures are composed of numerical data that can be grouped or averaged into minimum, maximum, and average values.

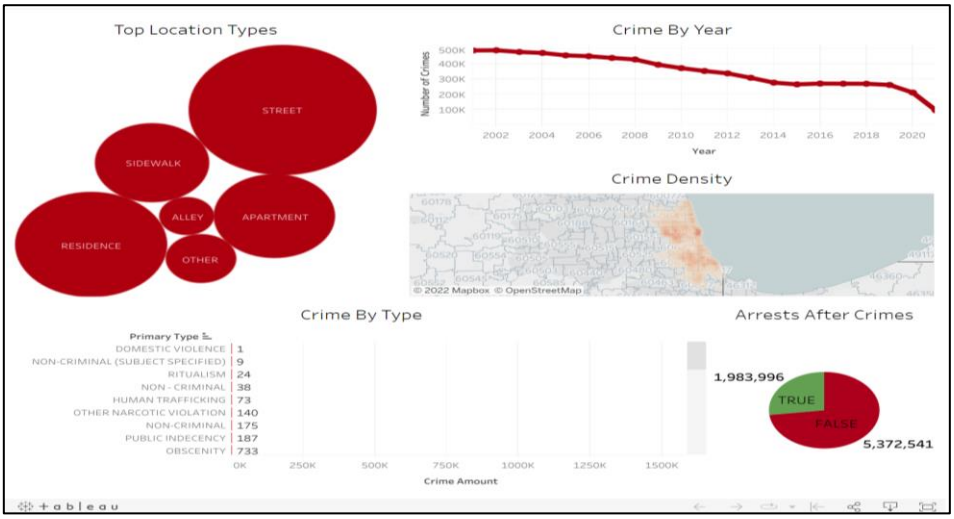
The various display types are

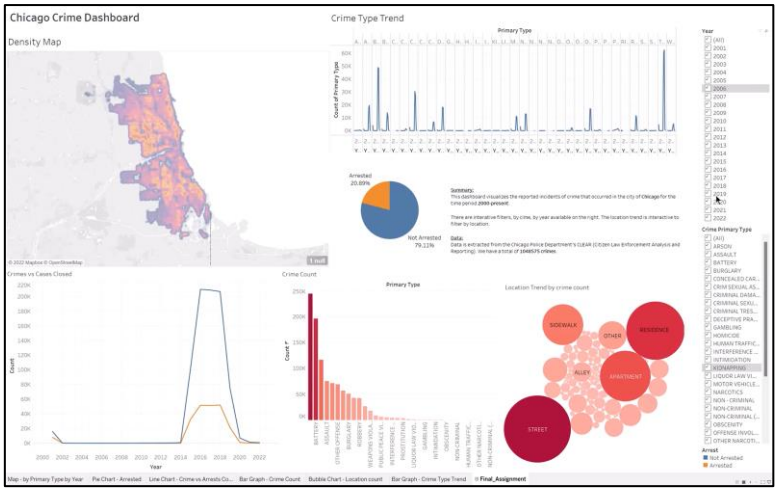
- Multiple display styles where analysts can use scatter plots to detect correlation and relationships;
- Data-rich displays that allow analysts to simultaneously present many charts with dense collections of data
- Investigative interface

2. Provide an example dashboard of how you would address ambiguity in your data to the user and support the intent of the analytical questions it answers. Show specific solutions by including screenshot examples and a link to the dashboard. I am looking for ways in which these parameters are addressed in your dashboard. Note that you can pick a dashboard from your assignments or a new one.

[Dashboard Link – Chicago Crime Databoard]

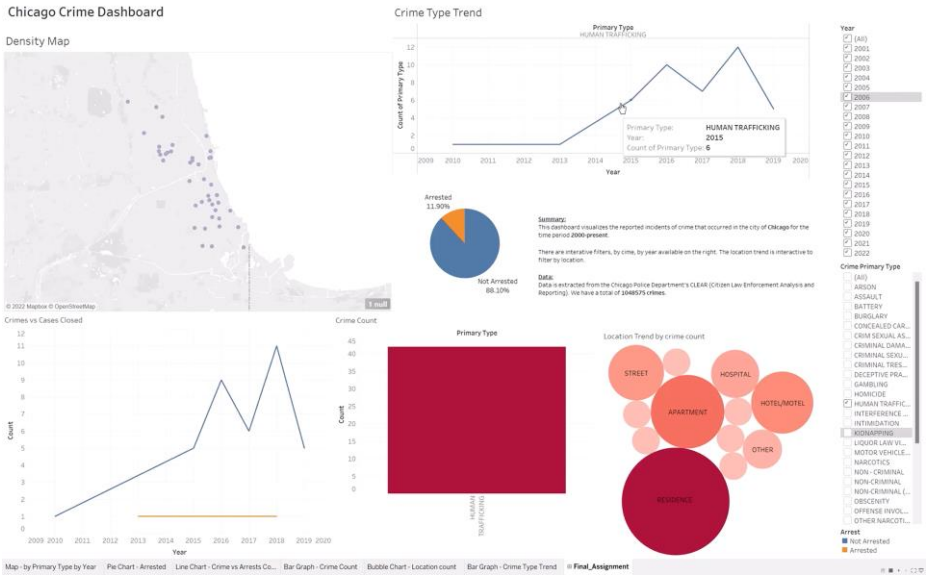
a) Layout, Space, Text





The layout has an ambiguity that you see the bar chart takes more space than intended middle one which is a layout ambiguity. This could have been removed by giving them equal spaces as other two maps. Otherwise, the dashboard is good as it goes with a better flow with various ranks followed by economic indicators**. The text is clear and is easily understood font**

As you can see the **label legends** are not present from any of the charts say Y axis is states in case of bar chart. An ideal example chart would be:



This is also a good example of colour encodings as people who made less payments and who are at risk of churn are indicated in red and green which means healthy.

B) Interactivity

When utilising interactive features to depict data in graphs, charts, and other visual representations, such as hover-over text or filtering options, the term "interactivity ambiguity" refers to the risk of misunderstanding or confusion. This can happen if an interactive element is selected that does not adequately reflect the data being represented or if the same interactive element is used to represent several categories or data points. This can make it harder to comprehend and analyse the data or cause inaccurate conclusions to be taken from the visualisation. The tooltip in the screenshot below makes it apparent what the bar chart is about. The same is also true for all interactive charts. Interactivity_video