COVID–19 in Criminal Justice Facilities

Background

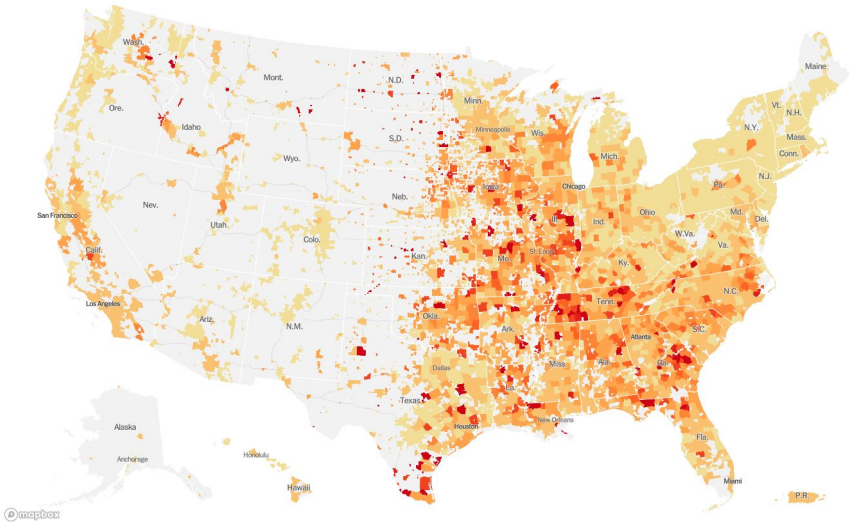
Asymmetrik is dedicated to building game-changing solutions for our healthcare, government and industry customers. But Asymmetrik also encourages community engagement through volunteering. A volunteer partnership exploring COVID-19 in criminal justice facilities led to research such as this article comparing covid outbreak metrics.

High-level Objective

We would like to explore visually over time how COVID-19 outbreaks in criminal justice facilities are influenced by the outbreaks in their local counties and vice versa.

Desired Application Capabilities

Longer-term we would like to display data for the whole United States similar to this NYT map with prison information overlay/zoom capabilities.



Source: New York Times https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html
Accessed 09/10/2020

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Minimum Viable Product/Semester Project

For this project, our initial MVP (minimum viable product), we will focus on California where we want to create a display that combines the prison data with county information.

California Counties shaded by number of cases in county (darker shading, higher case count):

The prison data should be overlaid as a small shaded circle with the location of the prison at the center of the circle.

The user should be able to select a specific day. This should update the map and the prison data to display cases for that day by appropriately shading county and prison overlays. If we

don't have case data for a specific day, use data for the closest earlier recording (so if there is no data for 5/16 but we have data for 5/14, use the 5/14 data).

Data

- New York Times Covid data by county: https://github.com/nytimes/covid-19-data/blob/master/us-counties.csv
- UCLA Covid Behind Bars - CA history: https://raw.githubusercontent.com/uclalawcovid19behindbars/historical-data/main/data/CA-historical-data.csv
- Geo JSON for California: for example, https://github.com/johan/world.geo.json/tree/master/countries/USA/CA (has all the counties as individual geojson files. Could combine to make CA file)

Requirements

- Create a three-tier architecture with
    - **Presentation layer** - browser-based map, date input (use HTML/CSS/JavaScript - preferred leaflet.js, webserver or node.js server to serve up web content)
        - https://leafletjs.com
            - https://leafletjs.com/examples/quick-start/
            - https://leafletjs.com/examples/geojson/
            - https://leafletjs.com/examples/choropleth/
            - https://leafletjs.com/examples/choropleth/us-states.js
    - **Application layer** - HTTP REST GET request with day parameter, queries database and returns JSON for county cases/prison cases on that day or closest earlier day (preferred Python Flask or Node Express)
    - **Database layer** - store county and prison COVID data (MySQL preferred)
        - https://github.com/nytimes/covid-19-data/blob/master/us-counties.csv
        - https://raw.githubusercontent.com/uclalawcovid19behindbars/historical-data/main/data/CA-historical-data.csv

For customer presentation all three servers should run on the same machine (no internet exposure required).

For questions to clarify requirements/implementation please send email to:

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