Team 14 Project Charter

Ai Li Yew, Jing Zheng, Michael Mertz, Weifeng Huang, Qian Zhang

Problem Statement

The Chicago Police department is interested in understanding trends and making correlations based on the data they have collected over the past few years. Thus, we are developing an application which will conduct data aggregation and analysis on the collected data. Then, providing heat map visualizations that allow comparison of multiple clustering results, this will enable the police department to identify and visualize relationships and patterns more efficiently.

Project Objectives

1. Visualizations of criminal events occurring in Chicago
    a. The project leverages GIS mapping that visualizes crime data as heat maps which give officers direct views of crime pattern and density.
2. Categorization and aggregation on criminal events
    a. Instead of visualizing all types of crimes in one heat map, the project categorizes criminal events first (sex offenders, burglaries, shootings, etc.), and then visualize via heatmaps correspondingly.
    b. On top of each heat map, we have aggregations that could show whether the number of events is increasing or decreasing in frequency or range.
3. Advanced data filtering
    a. Besides default heat maps on dashboard, the interface also supports advanced data filterings that allow officers to break down dataset and only focus on events that they are interested in. The filtered crime events are also shown as heatmaps.
    b. Advanced data filterings can be applied to race, gender, age, crime type, and time range. For example: “white, male, 20 - 25 years old, shooting, over the past 3 months”.
4. API development
    a. The project also involves the development of APIs that could be used for data extraction, aggregation and analytics based on advanced settings and requirements. The project grants the access to APIs to the Chicago Police Department, so the Chicago Police Department can use them within other projects.
5. Information security
    a. Clarity provides us a copy of real data with changed data identifiers and vpn. The project is designed generally so little modification is involved when Clarity takes over the project and switches back to real data.
    b. A login feature is implemented, to secure the crime information can only be accessed by Clarity and Chicago Police Department Staff

Stakeholders

1. Developers: Ai Li Yew, Jing Zheng, Michael Mertz, Weifeng Huang, Qian Zhang
2. Maintenance team: Clarity (the company)
3. Project Owner: Developers (Ai Li Yew, Jing Zheng, Michael Mertz, Weizhong Huang, Qian Zhang), Clarity, Chicago Police Department
4. Users: Clarity and Chicago Police Department Staff

Project Deliverables

- A home dashboard providing default heat maps based on desired aggregations
- An advanced search feature to break down the data into smaller scopes
- A backend functionality that will cache address information requested from 3rd party api's (google, US post dispatch)
- An application and database hosted on a cloud provider
- A generic database schema and table setup for more coming data from CPD