

PHASE 2: PROJECT

SAN FRANCISCO CRIME INCIDENTS AND TREND ANALYSIS



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GROUP 11

Overview

Crime investigation is a law implementation work that includes methodical examination for recognizing and dissecting examples and patterns in crime. Data on crime activities can help law authorization officers assess crimes in a progressively successful way and help criminologists in recognizing and catching suspects. Crime investigation likewise assumes a job in contriving answers for criminal activities and planning police counteractive action techniques. Quantitative sociology information investigation strategies are a piece of the crime examination process.

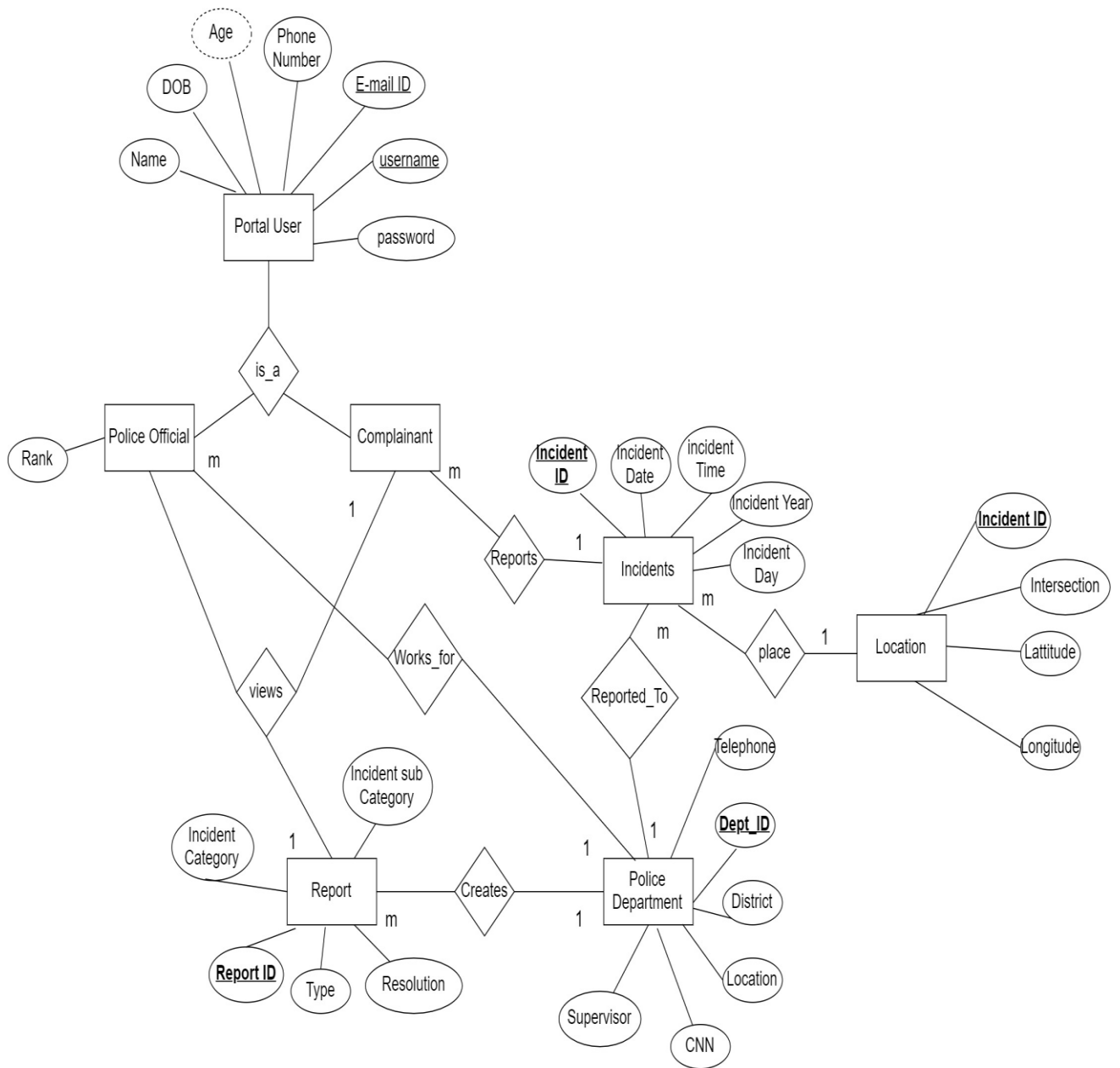
In the second phase of project specification we would like to provide some insights on the user functionality and User interface of the project. Also, here we provide the explanations of Conceptual database which comprises of Entity relationship diagram. ER diagram is pictorial representation of the various real-world entities. These entities are connected using relationships to provide more insights on how each entity behaves. Every entity has attributes attached to it. Here we have Users as Police official who maintains and views the reports and cases filed. We also have complainant who reports the crime to the police department and can only view the reports of the complaints he/she has reported. User Interface design depicts how the web portal would look and behave. We have different sections in web portal to show trends and search various records using filters.

Motivation of Proposed ER Diagram

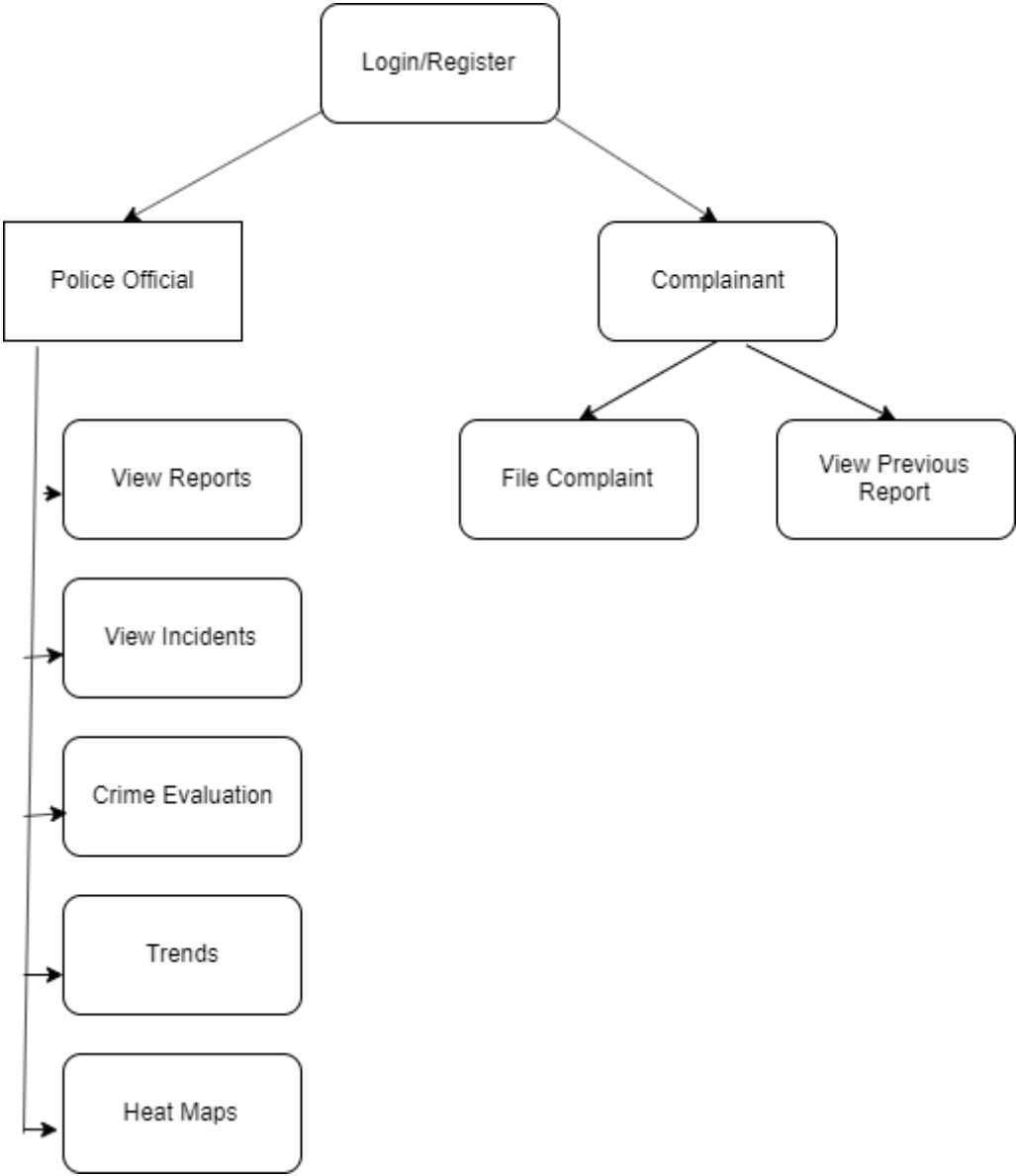
Entities of the ER Diagram with their attributes

- | | |
|-------------------------------|--------------------------------|
| ➤ User | |
| • Name | Name of the User |
| • DOB | Date of Birth |
| • Age | Age of User |
| • Phone Number | Contact Information |
| • Email ID | Email ID of user |
| • <u>Username</u> | Unique ID to Login |
| • Password | Password for login |
| ➤ Police Official (is a User) | |
| • Rank | Rank of Official |
| ➤ Complainant (is a User) | |
| ➤ Incidents | |
| • <u>Incident ID</u> | Unique ID |
| • Incident Date | Date of incident |
| • Incident Day | Day of incident |
| • Incident Time | Time of incident |
| • Incident Year | Year of incident |
| ➤ Report | |
| • <u>Report ID</u> | Unique report Number |
| • Incident Category | Type of crime |
| • Incident subcategory | Subtype of crime |
| • Resolution | Case |
| • Resolved/Active/inactive | |
| • Type | Type of Report |
| ➤ Location | |
| • <u>Incident ID</u> | Foreign Key of Incident |
| • Longitude | Longitude of crime scene |
| • Latitude | Latitude of crime scene |
| • Intersection | Depicts PD affinity |
| ➤ Police Department | |
| • <u>Department ID</u> | Unique Dept ID |
| • District | District of PD |
| • Location | Address of PD |
| • CNN | Identifier of the intersection |
| • Telephone | Contact Info |
| • Supervisor | Head of PD |

ER Diagram

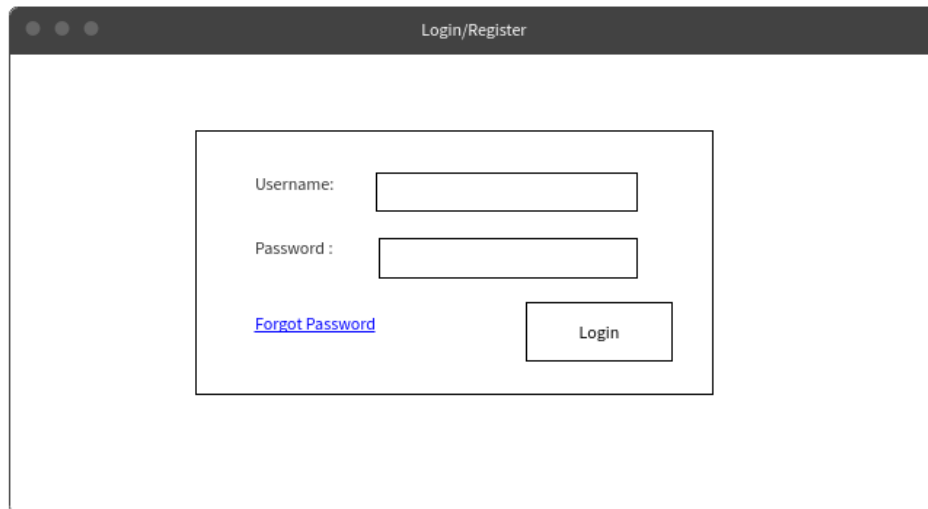


UI Diagram and Flow



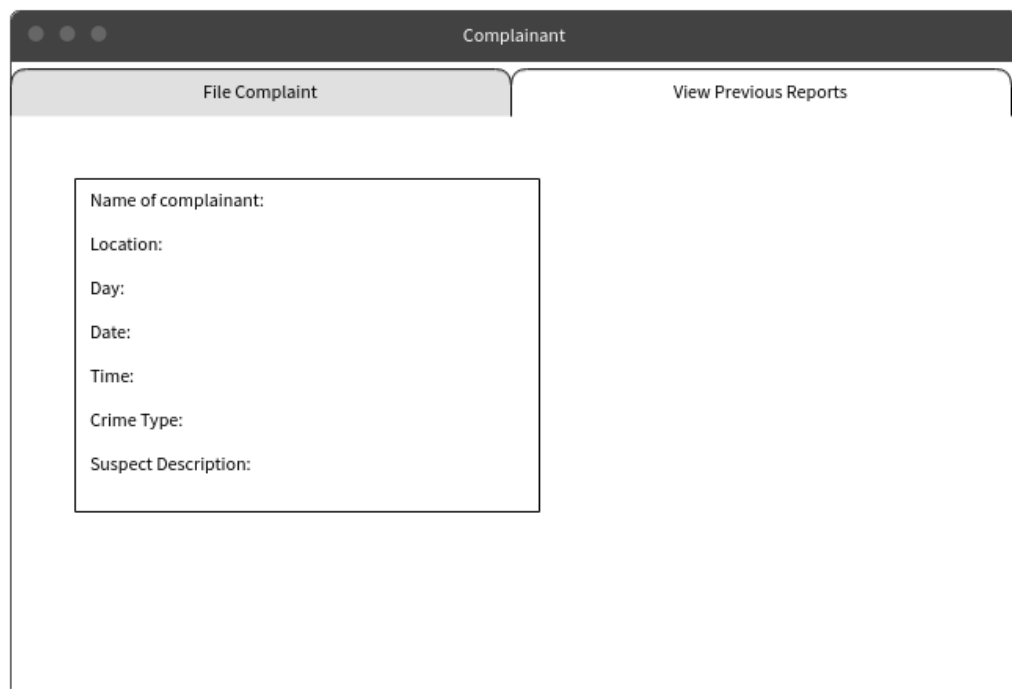
Proposed UI Design and Functionality

- User Login Page



The image shows a web browser window titled "Login/Register". Inside the window, there is a central form box. The form contains two input fields: "Username:" and "Password :". Below the password field is a blue hyperlink labeled "Forgot Password". To the right of the "Forgot Password" link is a rectangular button labeled "Login".

- Complainant Page



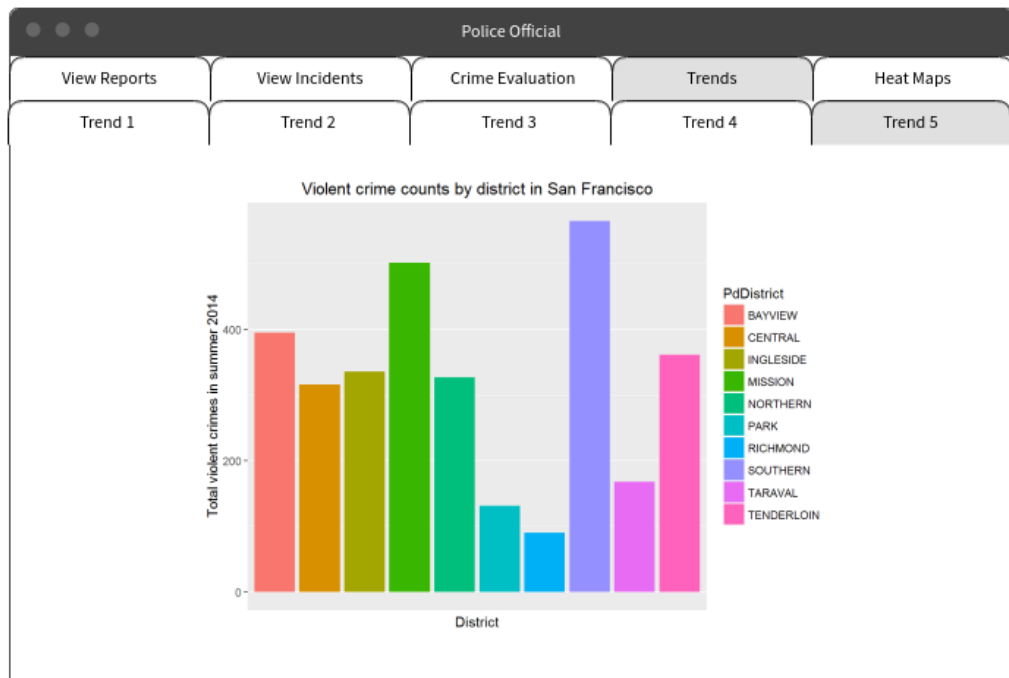
The image shows a web browser window titled "Complainant". The window has two tabs: "File Complaint" (which is active and highlighted) and "View Previous Reports". Inside the "File Complaint" tab, there is a form box with the following labels: "Name of complainant:", "Location:", "Day:", "Date:", "Time:", "Crime Type:", and "Suspect Description:".

Complainant

File ComplaintView Previous Reports

<input type="checkbox"/>	Country	Companies
<input checked="" type="checkbox"/>	USA	Apple Inc , Microsoft
<input type="checkbox"/>	Sweden	IKEA Furnitures , Spotify
<input checked="" type="checkbox"/>	Finland	Nokia Communications

- Police Official Page



Police Official			
View Reports	View Incidents	Crime Evaluation	Trends
			Heat Maps
Report ID	Incident Category	Type	Resolution
1	Theft	Online	Active

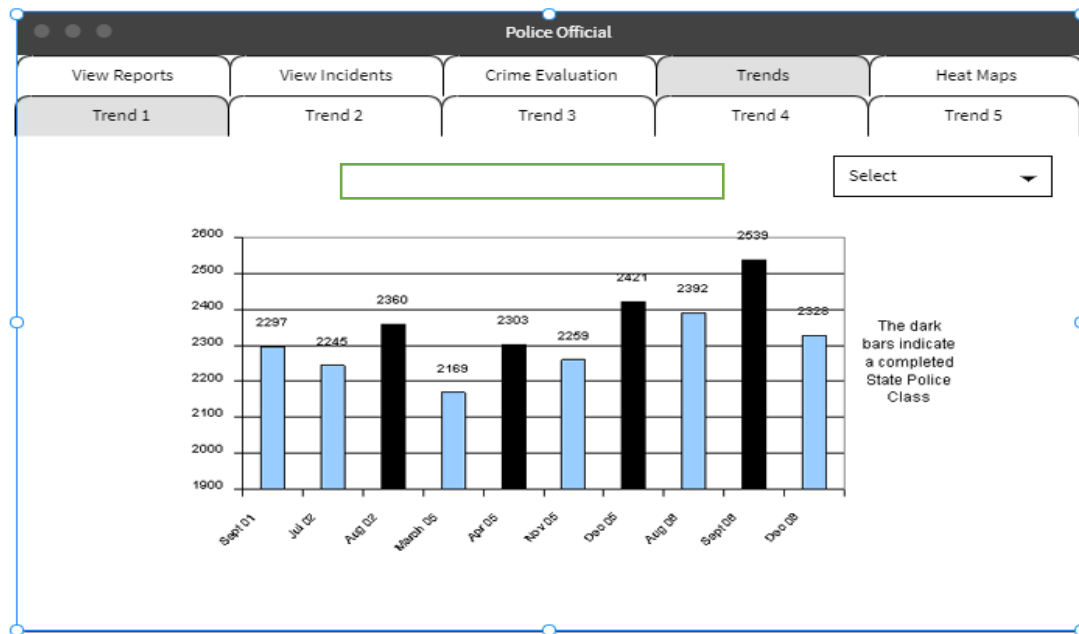
- A Police official will be able to check all the reports, incidents and be able to generate reports.
- A Police official will also be able to search for reports, update the reports.
- A Police Official also has access to crime evaluation and Heat maps.
- A police official will be able to view all the trends.
- A complainant will be able to view the previous incidents filled and also be able to file new incidents.
- A complainant will be able to see the status of the report.

Trends: Visualized

Trend 1: Police Department Efficiency in its region

Determine police departments which solves more cases of specific crime in its affinity with respect to other police departments over several months.

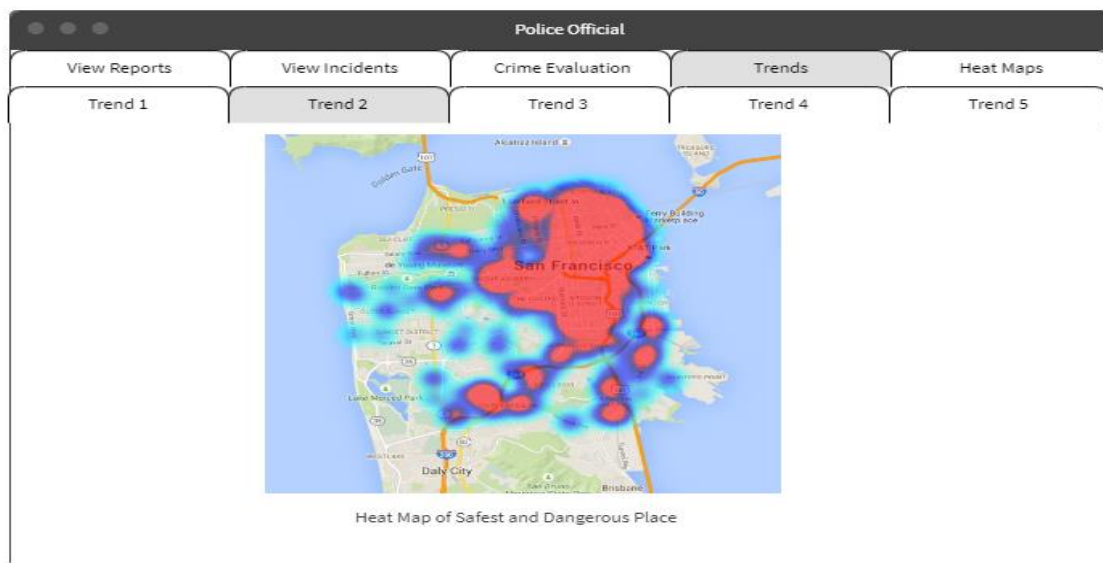
Graph Type: Bar graph



Trend 2: Dangerous and Safest Places in San Francisco

Find the 5 most dangerous and safest place considering seriousness of crime and the frequency of crime represented on the map.

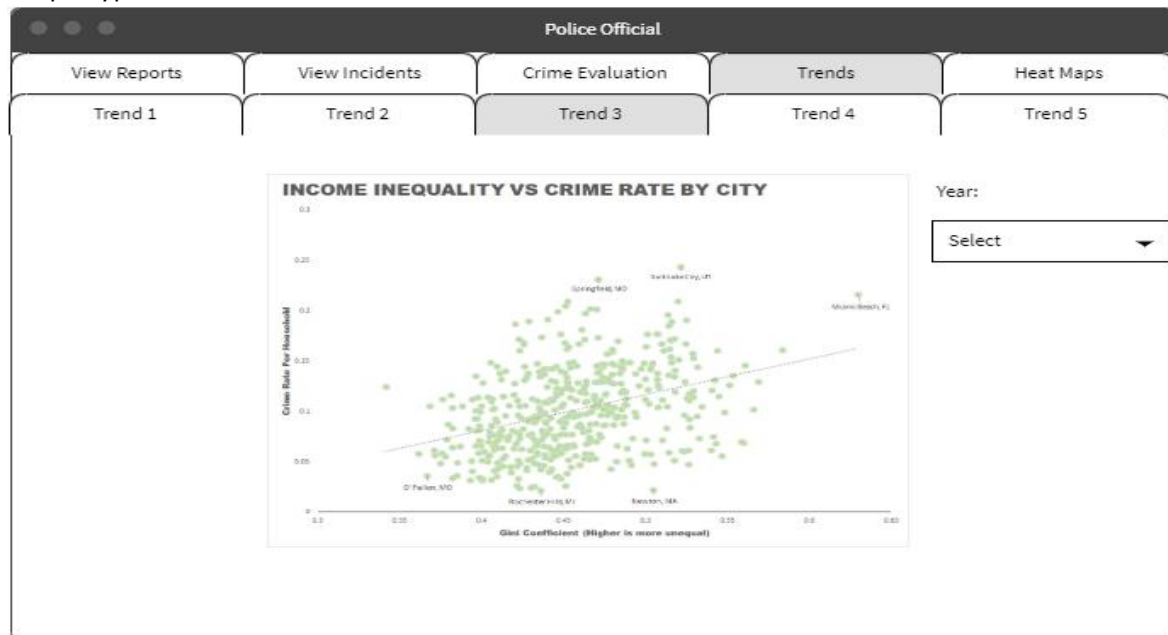
Graph Type: Map



Trend 3: Income inequality v/s Crime rate

Determine how income of various groups can affect the city with respect to crimes.

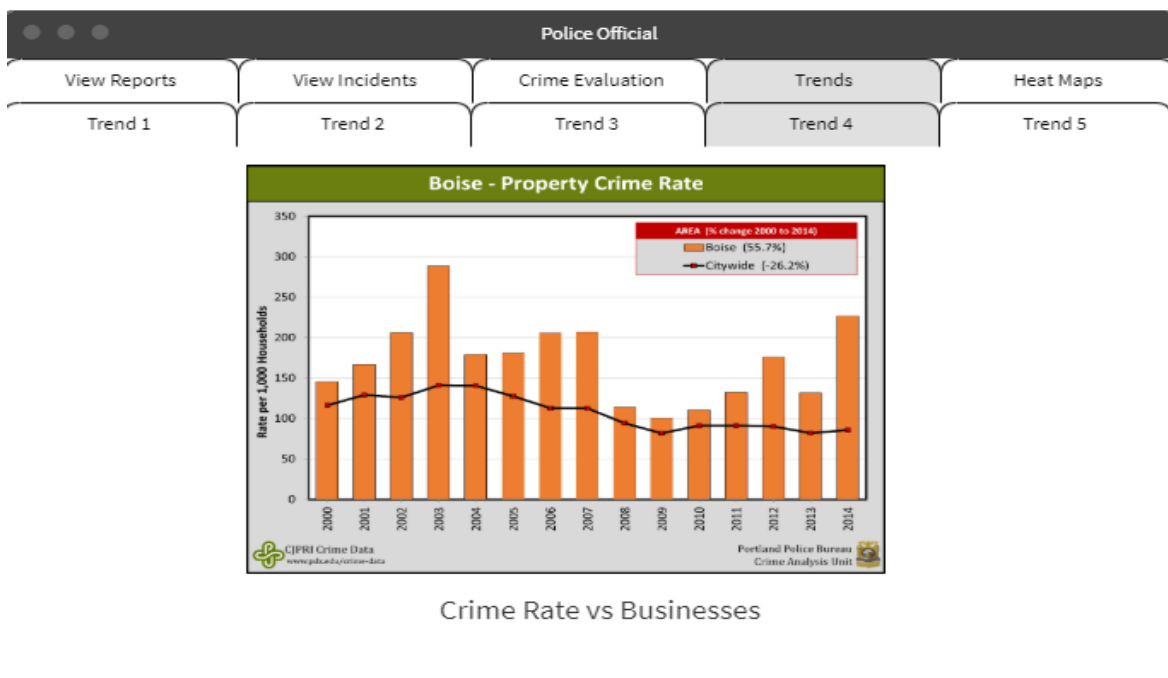
Graph Type: Line



Trend 4: Effects of a Crime on Business Locations in various SF Districts.

Determine how the crime in the region affects the businesses and local shop. This can show how shops and other businesses respond to crimes.

Graph Type: Heat Map with Bar Graph



Trend 5: Violent Crimes in all the districts of San Francisco over several period of time.

Find how the violent crime rates increase or decrease over a period of time. Also find if the colleges Campuses are affected by the violent crimes.

Graph Type: Bar Graph

