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# Project Requirements

1. Must include Python Flask-powered API, HTML/CSS, JavaScript, and at least one database.
2. Project should fall into one of the four tracks:
3. A custom “creative” D3.js project (i.e. nonstandard graph or chart)
4. A combination of web scraping and Leaflet or plotly
5. A dashboard page with multiple charts that update from the same data
6. A “thick” server that performs multiple manipulations on data in a database prior to visualization (**must be approved**)
7. Includes at least one JS library that we did not cover.
8. Must be powered by a data set with at least 100 records.
9. Must include some level of user-driven interaction, e.g. menus, dropdowns, text boxes.
10. Final visualization should ideally include at least three views.

# Minimum Viable Product Features

1. Display Google Map of Oakland
2. Map layer of Oakland Police beat boundaries
3. Map layer of Oakland crimes
4. User entry form and database query.
5. User presentation of database query

# Tasks

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# Requirements

Can someone put these items into the project board located in Sanureets Git?

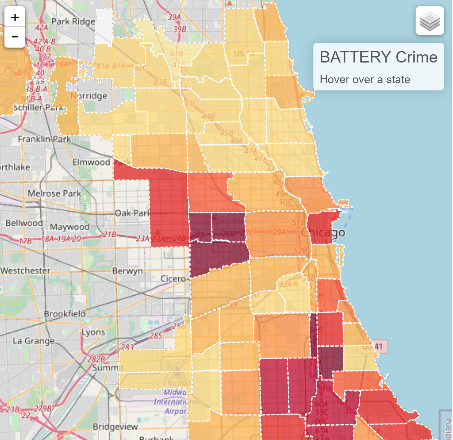
Please review, and discuss in slack if this is what we want. Edit/modify as needed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Owner** | **Description** | **User Input** | **Output** | **Location** | **Due** |
|  | Data Table: (columns)   * Crimes Type * Description * Date time * Address * City * State * Case Number * Police Beat * Latitude * Longitude | Select Navigation button “Data”, which will display data table.  Table data changes based on user input, selecting:  Previous 1 2 3 4…100 Next | Data table shows 10 rows at a time. Remaining rows shown when appropriate page number is clicked. | Data Page |  |
|  | Top 5 Violent crimes | Select Navigation button Analysis, which will show page of various charts | Pie Chart? | Analysis Page |  |
|  | Top 5 Property crimes | Select Navigation button Analysis, which will show page of various charts | Pie Chart? | Analysis Page |  |
|  |  |  |  |  |  |
|  | Group crime counts by type:   * Aggravated Assault * Homicide * Robbery * Auto Theft * Larceny * Arson | Select drop down menu to display layer. | Marker on map. Selection achieved by drop-down menu. Each marker has it’s own color | Home Page |  |
|  | Time series of crime count by date | Select Navigation button Analysis, which will show page of various charts |  |  |  |
|  | Oakland Police Beat Map | Select check box to display layer. | Layer on top of map. 1st choice static single pict  2nd choice interactive boundaries, with | Home Page |  |
|  | Crime type by type |  | Plotly |  |  |
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# Website Visualizations

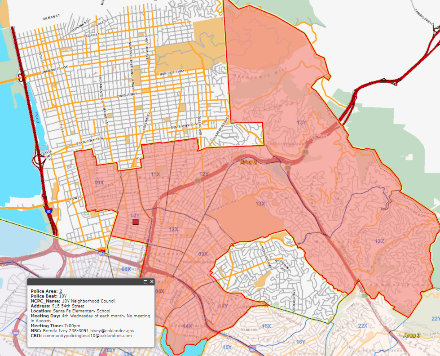
Police beat boundaries. Single image

Source: <https://oakgis.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=12ae8a087be44043abc6996c5e499d5c>

 This image shows Police beat boundaries. This may be possible to do using Mapbox. Google Maps can do this as well. I did it many years ago, see [here](https://www.google.com/maps/@37.7232752,-121.8631245,6198m/data=!3m1!1e3!4m2!6m1!1s1Jn49rxrP_O2LrsgqE_KxpELf0OgOuWKQ).

Source:

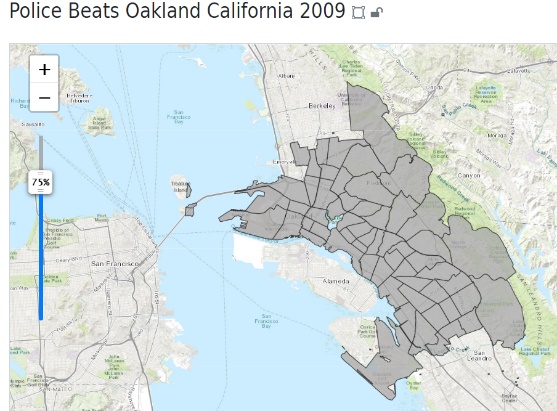
<https://crime-dashboard.herokuapp.com/index.html>



Police area boundaries. Oakland has 5 Areas, which is composed of multiple beats. The following image shows map layers for the 5 areas as opposed to individual beat layers.

Source:

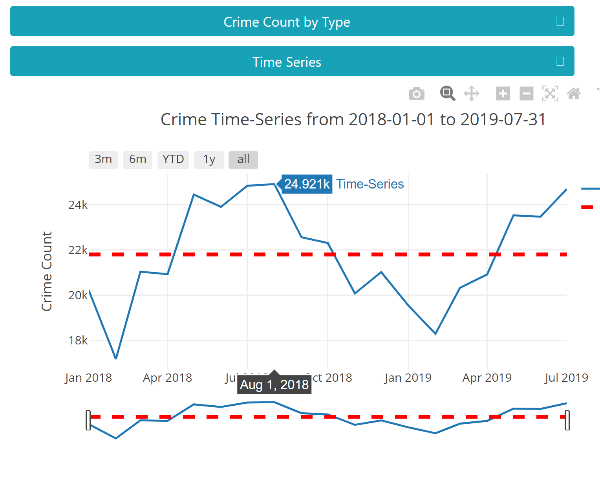
<http://gisapps1.mapoakland.com/policedistricts/>



Police Beats is a single overlay. The file has been downloaded as a GeoJson file, located in the static, js folder. It is named, opd\_boundaries-geojson.json

Source:

<https://maps.princeton.edu/catalog/ark28722-s71s46>



Time Series

Source:

https://crime-dashboard.herokuapp.com/index.html

# Schedule

* Team dry run: 22-July
* Class Presentation: 24-July

|  |  |  |  |
| --- | --- | --- | --- |
| **Day** | **Description** | **Tasks** | **Status** |
| 10-Jul | Brainstorm topics, research data sets | * Select topic |  |
|  |  | * Find data set |  |
|  |  | * Find inspiration |  |
|  |  | * Sketch idea visuals |  |
|  |  | * Create 1-page proposal |  |
| 13-Jul | Create 1-page proposal | * Articulate chosen topic and rationale |  |
|  |  | * Provide link to data sets and a screenshot of metadata if it exists |  |
|  |  | * 3-4 screenshots of relevant, “inspiring” visualizations that frame the creative fodder. |  |
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| 22-Jul | Team dry run |  |  |
|  |  |  |  |

**TEAM**: MattJ, SanureetB, VeerpalS, JohnC

# Datasets/Sources

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Description** | **Type** | **URL** |  |  |
| **1** | Oakland Crime | API | <https://data.oaklandca.gov/Public-Safety/CrimeWatch-Maps-Past-90-Days/ym6k-rx7a> |  | Do |
| **2** | Hospitals | CSV | Matt to provide |  |  |
| **3** | Oakland Census Data | CSV | <https://www.census.gov/quickfacts/oaklandcitycalifornia> |  |  |
| **4** | Open Justice – Types of crime | CSV | <https://openjustice.doj.ca.gov/data> |  |  |
| **5** | Oakland PD (OPD) Beat Boundaries | Website | <https://maps.princeton.edu/catalog/ark28722-s71s46> | GeoJSON of the Oakland Police beat boundaries. Already added to static js folder |  |
| **6** | OPD Info | Website | <https://www.oaklandca.gov/resources/find-a-police-area-or-beat> | Contains beat maps and policing areas |  |
| **7** | How to reduce violent crimes | PDF | <http://www2.oaklandnet.com/oakca/groups/police/documents/webcontent/dowd007487.pdf> |  |  |
| **8** | Education stats | Website | <http://www.ed-data.org/district/Alameda/Oakland-Unified> | Data visualized in charts. Raw data can be found here:  <https://www.cde.ca.gov/ds/ad/downloadabledata.asp> |  |
| **9** | Geospatial data |  | <https://oakland-oakgis.opendata.arcgis.com/datasets/oaklandcitylimits/explore?location=37.770882%2C-122.207400%2C11.85> | Download options include GeoJSON |  |

# Other Sources

1. Placeholder

# Crime Categories

1. Violent crime
2. Murder
3. Rape
4. Robbery
5. Assault
6. Property crime
7. Burglary
8. Theft
9. Vehicle theft

# Statistics

1. Reported incidents

2. Oakland per/1K people

3. California per/1k people

4. National per/1k people

# High-Level Tasks / Libraries

1. Finalize hypothesis
2. Identify data sources
   1. Pull data
   2. Clean & munge data
3. Create database
4. Decide/agree on data to expose
   1. Crime type
   2. Oakland PD beat overlay
5. Web page
   1. Website architecture – plan/design site info structure
   2. Decide on presentation elements
6. Python Flask API
7. HTML/CSS/JavaScript
   1. Bootstrap
   2. Leaflet

# Roles & Responsibilities

1. SQL: Veerpal
2. Github: Sanureet
3. Visualization: Matt
4. HTML: John / Sanureet
5. Sources: John
6. ETL:

# Availability

- Matt: after 8pm

- Sanureet: after 7:30

- John: after 5:00, available during day if needed.

# Actions

1. Github – Sanureet. Done
2. List possible sources – John. Done 12-Jul
3. Everyone: Review data sources; provide feedback which data we should use. Done
4. Pulled json [Oakland Crimewatch map data](https://data.oaklandca.gov/Public-Safety/CrimeWatch-Maps-Past-90-Days/ym6k-rx7a) – John. Done 12-Jul
5. Project plan/timeline- John. EOD 11-July

# Website Inspiration / Ideas

1. [Leaflet Crime Dashboard](https://crime-dashboard.herokuapp.com/index.html).
2. [Leaflet Crime](https://hermionewy.github.io/crime/index.html) Website (great visual examples using Leaflet)
3. [Leaflet usage](https://www.city-data.com/crime/crime-Oakland-California.html)
4. [Visualization - Menus](https://www.opendatanetwork.com/entity/1600000US0653000/Oakland_CA/crime.fbi_ucr.count?crime_type=Aggravated%20assault&year=2018)
5. [Oakland PD Beat Boundry Map](https://oakgis.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=12ae8a087be44043abc6996c5e499d5c) (Uses boundary map overlay, drop down widgets, possible reuse icons/images)
   1. https://gisapps1.mapoakland.com/oakgis/rest/services/Prod/OPDDistrictsBdrysBeats/MapServer/export?dpi=96&transparent=true&format=png32&layers=show%3A0%2C1%2C2&bbox=-13621618.2234245%2C4545155.192395562%2C-13609292.752613531%2C4556429.654067611&bboxSR=102100&imageSR=102100&size=645%2C590&f=image
6. [Website Ideas 1](https://spotcrime.com/CA/Oakland) (Cool icons)
7. [Crime Analytics Visualization](https://www.neighborhoodscout.com/ca/oakland/crime#:~:text=With%20a%20crime%20rate%20of,here%20is%20one%20in%2013.) (Charts, tables)

# DEPRICATE. NO LONGER NEEDED.

### 13-JUL

1. Crime against Asian population; increase/decrease. Time period dependent
2. Crime per/1k, based on income-level, education-level
3. Crime per/1k vs CalFresh usage (not sure if possible). Not possible. Confirmed county data only available
4. Crime per/1k, by type, based on location and or income-level (need to specify)
5. I’m thinking that we not need a hypothesis since we are only providing visualization to the data.