How Safe is Your Neighborhood?

Team Members

Ejaz Saifudeen

Prasanth Venugopal

Rajiv Prathapan

Sanjana Vasudevan

Motivation

- Generally, people tend to move to new cities and they must go about visiting different sites to know about the safety of the city in terms of fire, crimes, sanitation and natural calamities.

- This web application aims to be a one stop to know all that is needed to know about the safety of a neighborhood.

- Datasets are obtained from official US government sites and are linked in such a way that when a user queries for the safety of a neighborhood, all the relevant information is obtained with the help of heat map and statistics.

Data Sets

- Crimes committed in the US – https://www.ucrdatatool.gov/ (Data sets for the crimes that have been committed in USA)

- Arson and Fire outbreak data https://www.usfa.fema.gov/data/nfirs/ (Data for the Fire outbreak and Arson which have occurred in USA)

- Natural hazards - https://www.ngdc.noaa.gov/hazard/hazards.shtml (Data of the natural hazards that have occurred in USA)

- Disease outbreak -https://cloud.google.com/bigquery/public-data/usa-disease (Data for the disease outbreaks that have occurred in USA)

Ontology
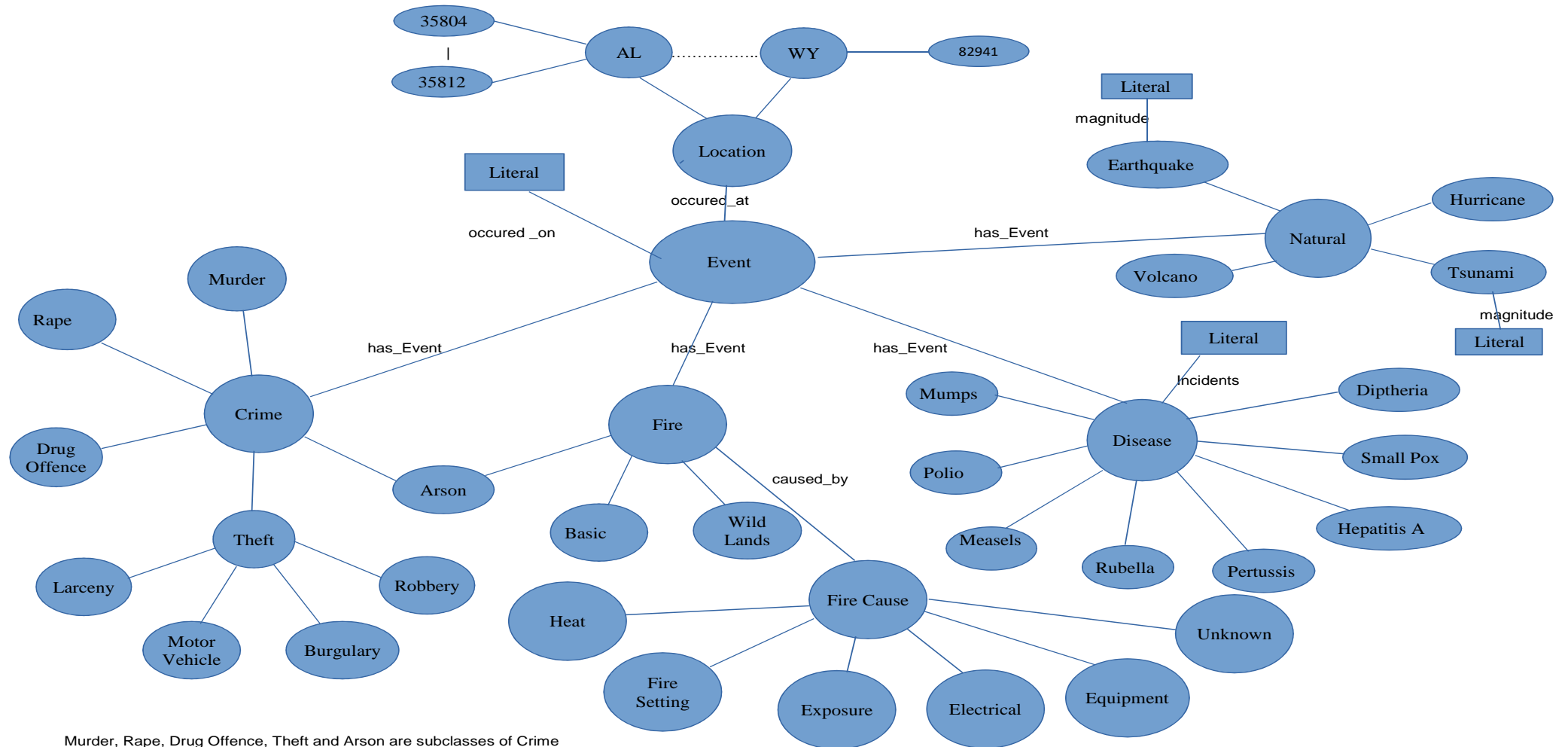
Frontend
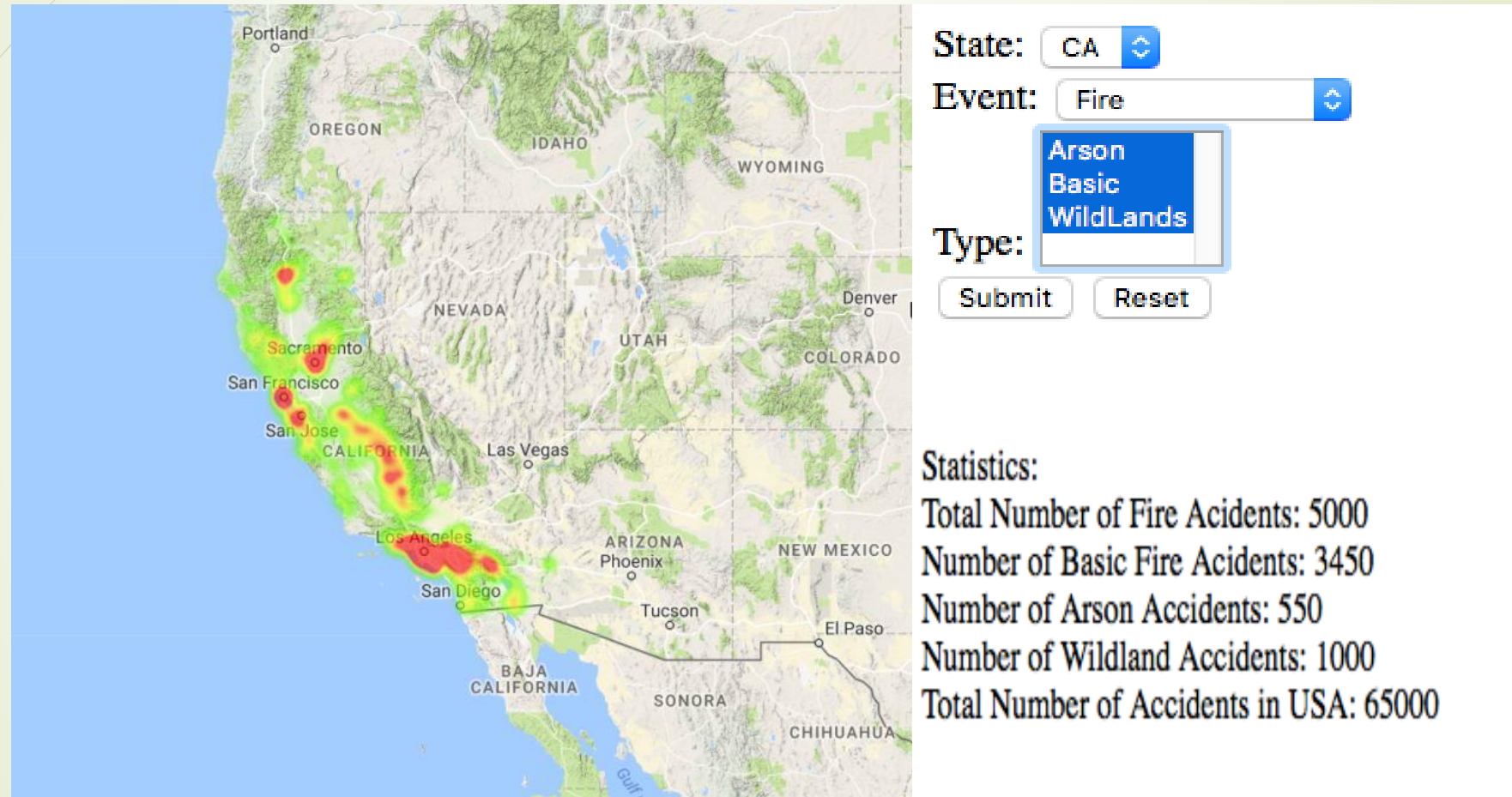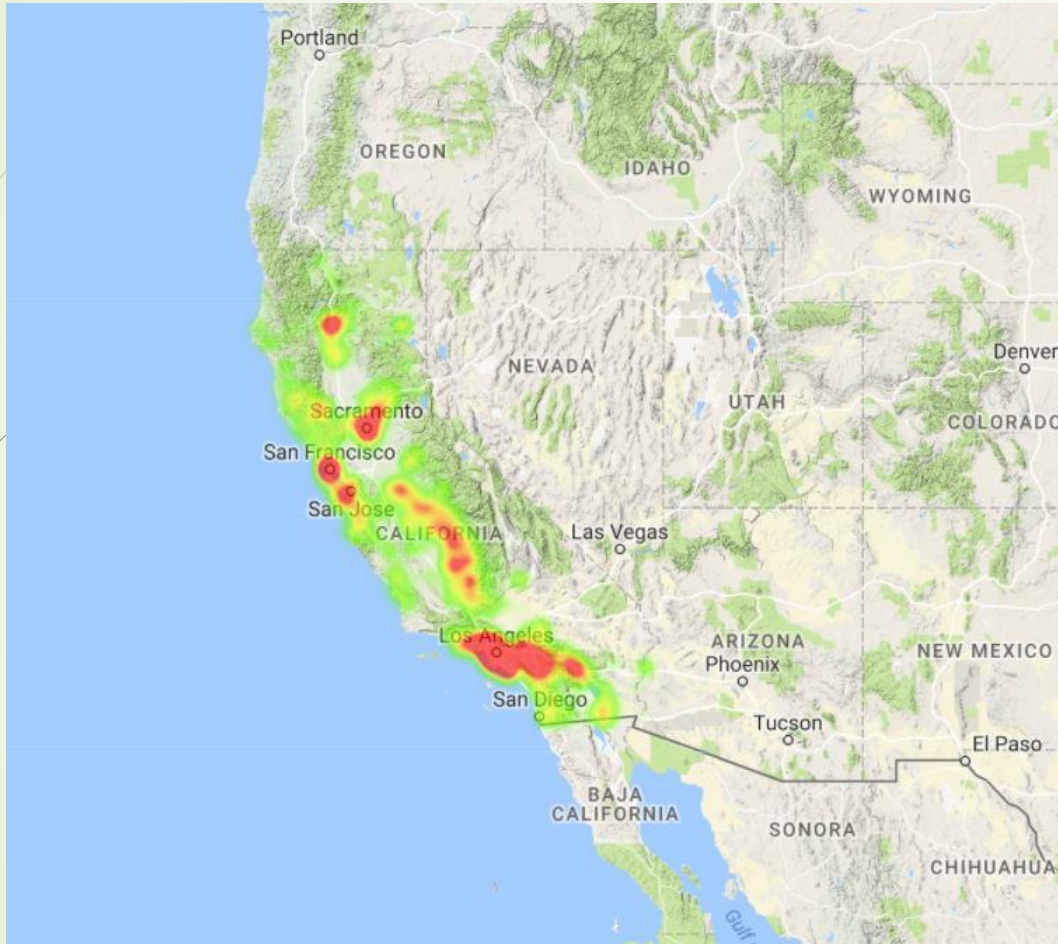
This is the heat map for fire incidents that have occurred in California .

The count is sent to Google Map API based on the number of RDF instances for that zip code.

For each count , we plot the incident and based on the plots , the heat map is generated.

SPARQL

- There are 4 Models present namely Fire, Disease , Crime and Natural hazards

- We have a function "BuildFilter" where based on the input, we are able to build the filter during runtime.

- A generic query is used for all the 4 datasets as we are sending model as a parameter.

SELECT ?loc (count(?loc) as ?count)

WHERE { ?r rdf:type ?type.

  ?r sn:occured_at ?loc.

  FILTER (contains(str(?loc), "85281") || contains(str(?loc), "85282"))

  FILTER (contains(str(?type), "Arson") || contains(str(?type), "Basic"))

} GROUP BY ?loc

Contribution

- Ejaz Saifudeen – Fire dataset RDF instance, RESTful API.

- Prasanth Venugopal – Natural calamities RDF instance, Frontend.

- Rajiv Prathapan – Crime dataset RDF instance creation, RESTful API.

- Sanjana Vasudevan – Disease dataset RDF instance, Frontend.

- All the team members are taking equal roles and responsibilities in writing queries, uploading data and testing of the application.