

Final Project Presentation

UW Alerts

J. Joko, J. Michael, M. Qiao, E. Yip

The Current System

Drawbacks:

- Text Only
- Requires a map app to see where the alert is relative to current position

What it should be:

- Visual to process information faster
- Easy to see unsafe areas

December 13, 2022

UW Alert Seattle

UPDATE at 2:45 p.m. Tuesday: All clear. Seattle Fire Department's response to a potential hazardous materials incident at Hitchcock Hall, near NE Pacific Ave. and 15th Ave. NE, has ended and traffic is reopened.

UPDATE at 2:32 p.m. Tuesday: Seattle Fire Department is responding to a hazardous materials incident in Hitchcock Hall, resulting in the closure of eastbound traffic on NE Pacific Ave. near 15th Ave. NE. Please avoid the area, if possible.

ORIGINAL POST: SFD HazMat response at Hitchcock Hall. Road closed at e/b Pacific Ave. near 15th Ave. Avoid area. Info: alert.uw.edu
Sent at 2:30pm Tue

December 1, 2022

UW Advisory Seattle

UPDATED at 2:13 p.m. Thursday: UWPD has investigated and determined there is no credible threat in Kane Hall Room 130. There are no more closures to this room or other rooms in Kane Hall at this time.

UPDATED at 12:18 p.m. Thursday: UWPD was made aware of a post on an app claiming that there was a bomb in Kane Hall Room 130. UWPD cleared the room to begin investigating and there are no initial indications of a legitimate threat. Out of an abundance of caution, UWPD will continue to investigate and more information will be provided here as it becomes available.

UPDATED at 11:44 a.m. Thursday: UWPD is investigating an unconfirmed threat in Kane Hall Room 130. Out of an abundance of caution, the room has been evacuated to allow UWPD to

Background

Goal: Build an interactive map that displays incidents/announcements from the UW Alert system

Purpose: Allow students to see unsafe areas and avoid them

3 Components:

- Web app that hosts the map
- Visual markers for impacted areas on the map
- Text parser to process UW Alerts message

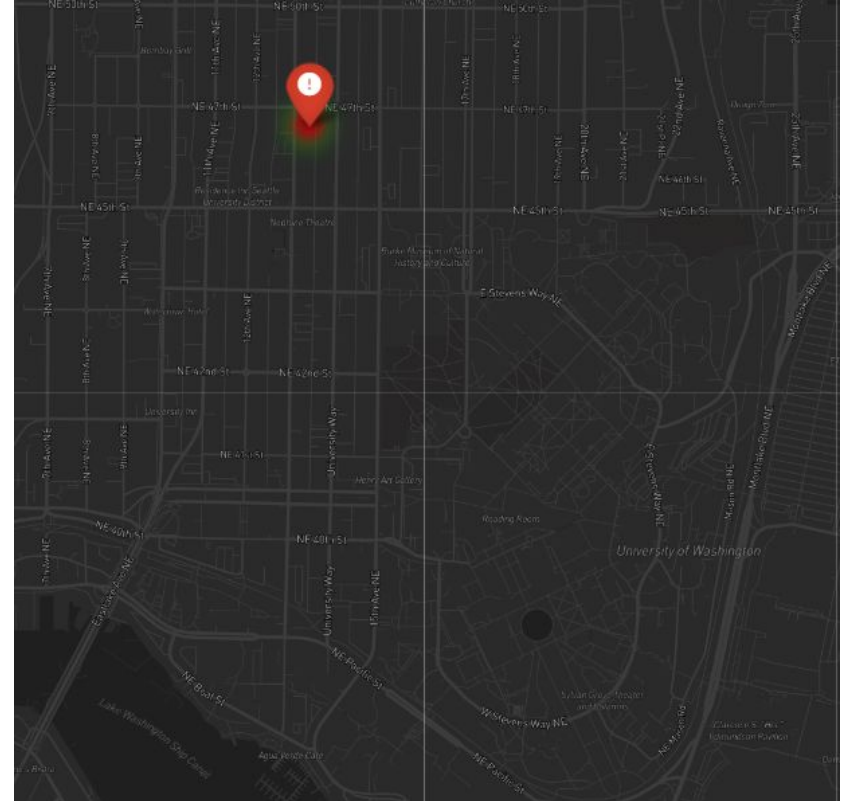
Data Sources

- Seattle GeoData
 - Geographic Information System (GIS) database for Seattle streets that allows for map visualizations
 - Source: The Seattle GIS Open Data
 - Limitations: Limited to Seattle streets only, have to manually filter for certain areas
- UW Alerts Blog
 - Official blog post maintained by the University of Washington dedicated to reporting incidents that may affect students
 - Source: UW Alert
 - Limitations: Human-typed data which is unstructured and unstandardized.

Use Case #1

I am walking home late after class, what area(s) should I avoid to stay safe?

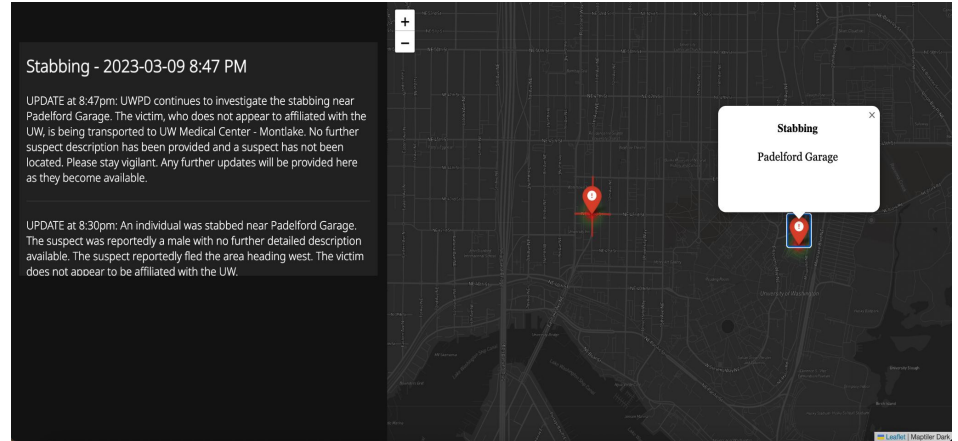
When opening the app, the user can see a map of the U-District area with markers indicating alerts within the past 4 hours.



Use Case #2

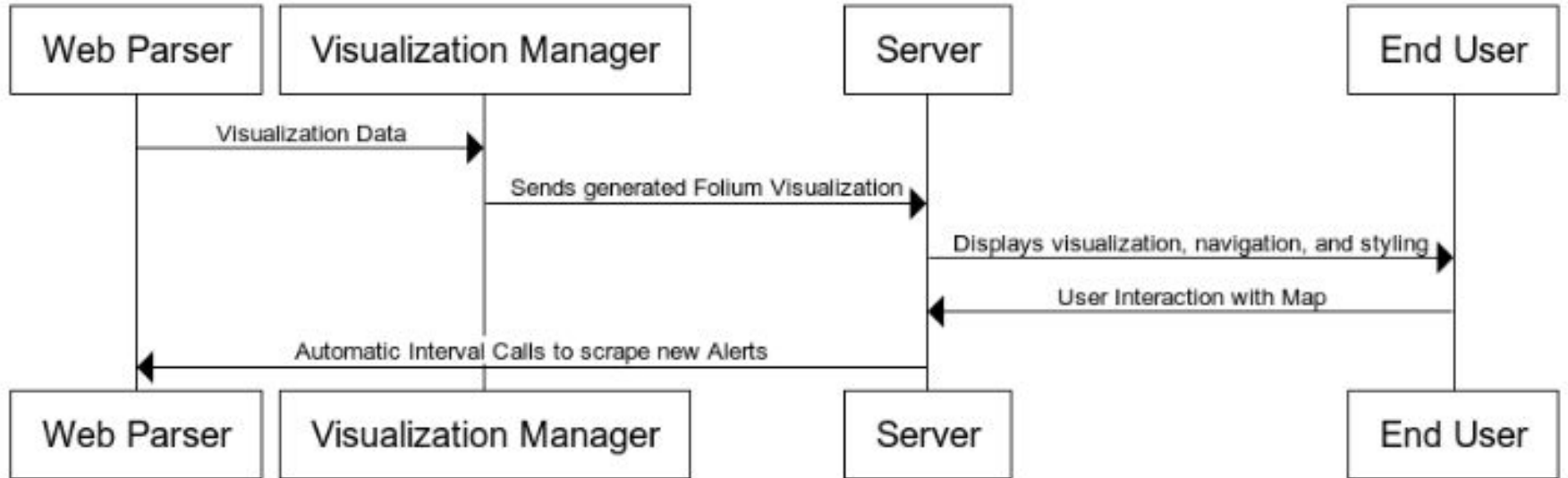
There was an alert 2 hours ago. Has the incident resolved?

Users can click on the markers within the app. A popup will show the alert incident type and the side panel will display text from the UW Alert Blog along with any updates.



Design

UW Alerts Map: Component Interaction Diagram



Design

Text Manager:

- Scrapes relevant information from the UW Alert Blog
- Automatically parses new alerts and converts them into a readable markdown table
- Updates the internal data storage used by the backend

Visualization Manager/Back End

- Renders a leaflet plot and markers using the internal data storage
- Send the plot to the frontend

Front End Manager

- Uses Flask to display the rendered plot

Demo

Lessons Learned

- Importance of utilizing test cases to catch errors in code
- Design components/modules in advance so that integration of multiple people's code is much easier
- Small features may seem simple at first but in reality might be extremely difficult to implement.
- Importance of adding more regex checks than what we would expect are needed.

Future Work

- We have contacted UW Alert to ask whether they want to utilize our app
- Migrate data storage to a database – mySQL, MongoDB, etc...
- Make additional improvements to UI
- Mobile functionality
- Optimize/preload assets in order to decrease load times.
- Create descriptive statistics for crime in “Past” tab.