Street Sweepers

Highway to HPC

Final Presentations
Exit in 2 miles

November
9th, 2020

Team Members:

Aparna Bhat
Kellen Hill
Daniel Lamb

Team Mentors:

Josh Kissel
Boyd Wilson

Team Song: Life is a Highway

Problem Statement

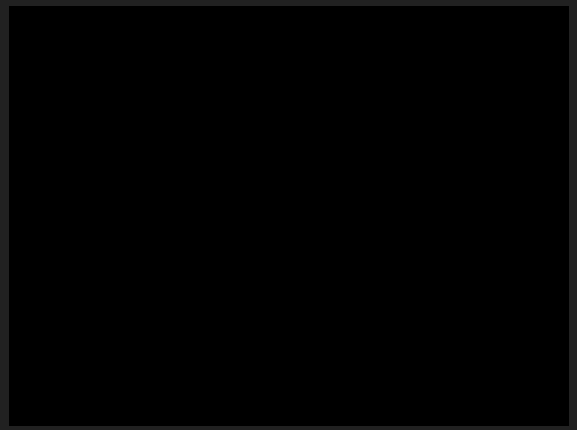
With an abundance of data detailing traffic related incidents from TrafficVision, what type of analysis and visualizations can be provided to best inform local DOT's allocation of resources to best keep traffic running safely and efficiently

Information for the State of Tennessee but the program will be able to work with data from Georgia's TrafficVision installation.

Question asked: How can we(the programmers) help TNDOT/GDOT visualize their data and allocate their resources?

The Goal

- Creating data visualizations from traffic analytics to better inform decision making of the TNDOT/GDOT
- Focus on a heat map of stand still traffic to inform location of HERO trucks
- Focus on incident locations over time
- Identifying problem areas by charting cameras with the highest incident counts



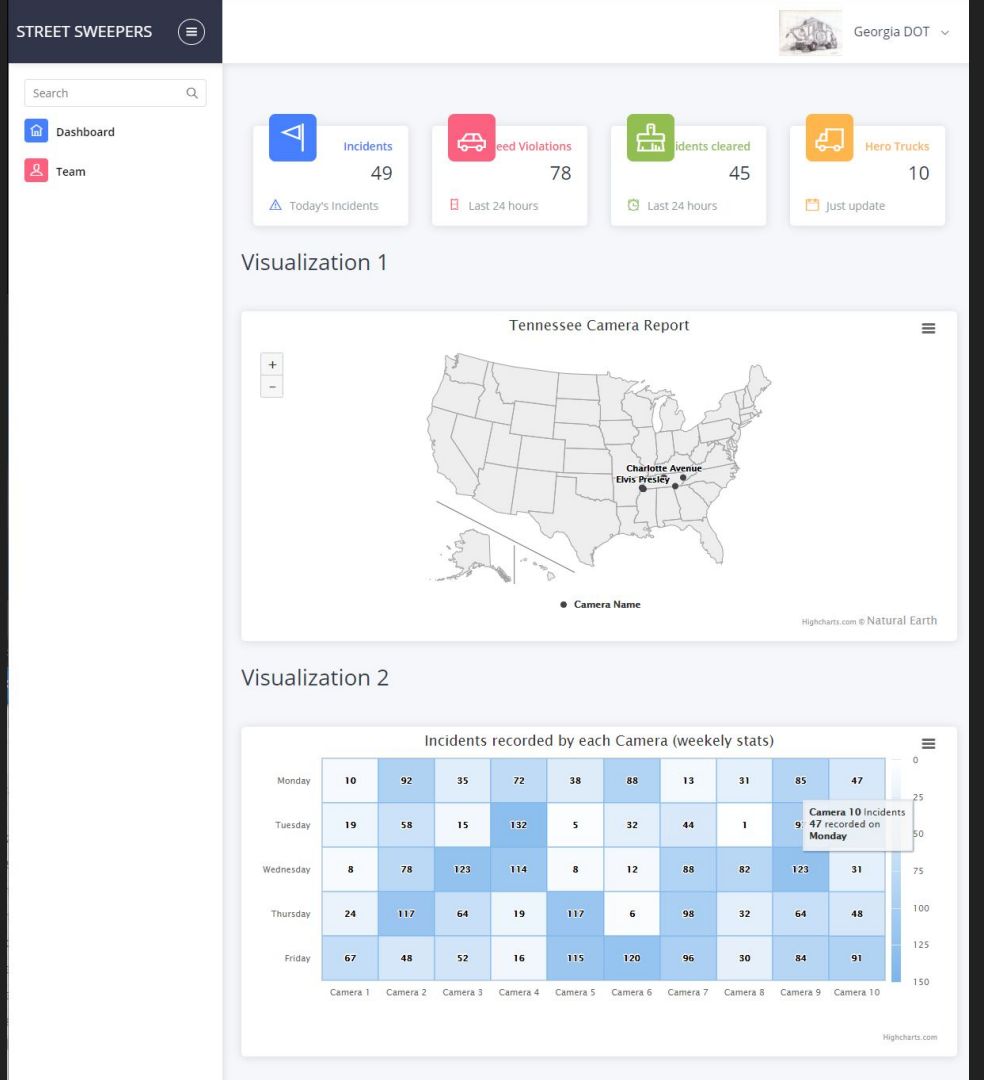
Goals Reached and Next Steps

- Accomplished
  - API calls successfully made to Traffic Vision
  - Data aggregated
  - Data Visualized
  - Developed Dashboard for visualization
- Next Steps
  - More visualization and analysis with Traffic Vision data

	camera_index	filename	timestamp	Latitude	Longitude	CameraName
0	1	2020-10-02_16-15-27_incident_stopped.json	1601673327	35.063700	-90.024067	M_I-55 @ US 51, Elvis Presley - Memphis
1	1	2020-10-05_06-57-41_incident_stopped.json	1601899061	35.063700	-90.024067	M_I-55 @ US 51, Elvis Presley - Memphis
2	1	2020-10-03_14-22-38_incident_stopped.json	1601752958	35.063700	-90.024067	M_I-55 @ US 51, Elvis Presley - Memphis
3	1	2020-10-05_10-31-19_incident_stopped.json	1601911879	35.063700	-90.024067	M_I-55 @ US 51, Elvis Presley - Memphis
4	1	2020-10-07_18-24-27_incident_stopped.json	1602113067	35.063700	-90.024067	M_I-55 @ US 51, Elvis Presley - Memphis

What was Learned

- Tools & Languages utilized
  - HTML
  - R
  - Python
  - Google Colab
  - High Charts
  - Pandas
  - Google Cloud Platform
  - Mapbox API
  - JSON
- Troubleshooting
  - Utilizing Google's Developer tools to analyze issues
- Pair Programming



Links

Github: https://github.com/TheNotBotBot/HackHPC20_TrafficVision.git

Demos:

- Data Aggregation
- Dashboard Tour and R
- Incidents Geographically Mapped with a Time Slider

Thank You!!

Thank you to all of the mentors and special thanks to our mentors Boyd and Josh!

Thank you to all the supporting organizations!

Thank you to SC20 for this amazing opportunity!

Slider Visualization Demo