ECE 143

Project Proposal

Analysis of Traffic Data for the City of Los Angeles

Group 2

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Problem:

Gathering and understanding traffic data for the city of Los Angeles given the location data, travel time, freeway data, traffic incidents data and time of the year.

Dataset:

Uber Movement dataset (https://ubr.to/2JvIdNA)

The entire dataset comprises of 6 CSV files, for 4 different quarters of the year 2017 and one quarter of the year 2018 along with one map JSON file for Los Angeles. The CSV files comprise of Source ID, Destination ID, Hour of Day, Mean Travel Time for the city of Los Angeles. The map file contains the boundaries in geospatial (.geoJSON) format, including Zone IDs.

Traffic Freeways dataset (http://pems.dot.ca.gov/?dnode=Clearinghouse)

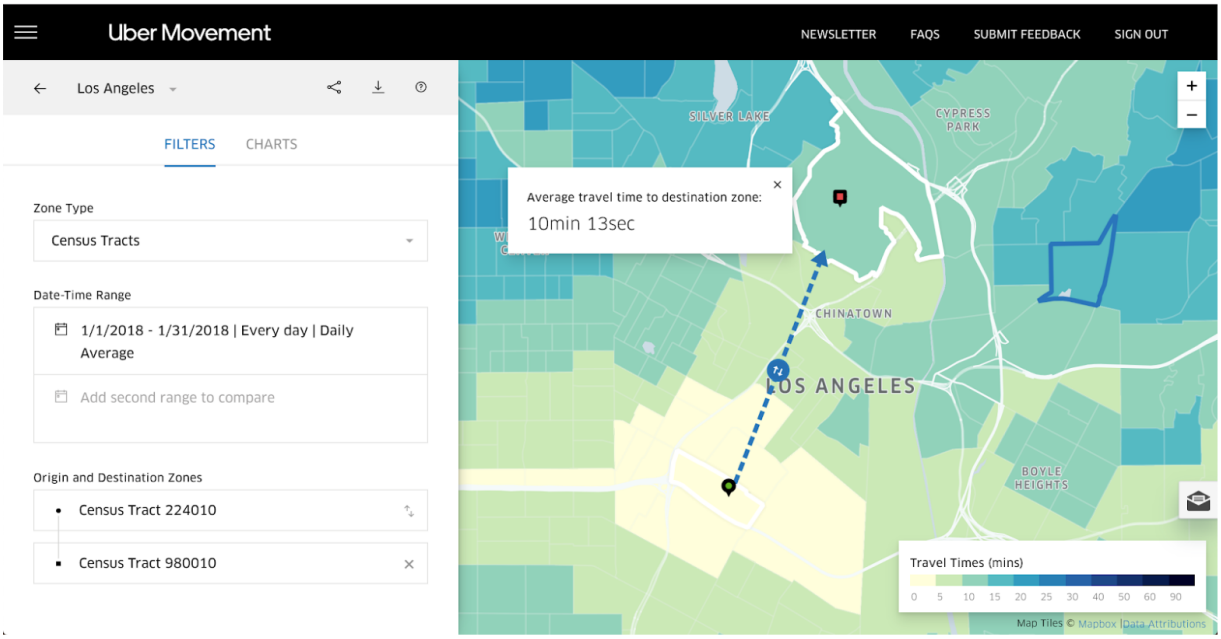
The dataset of freeway flows and speeds contains the station information in the district 7 (LA areas). For each row in the table, it has the timestamp, the flow and speeds around the stations, and the direction of the route. The dataset of traffic incidents happened in each freeway in LA area. For each of the incidents, it has the timestamp, the direction of the freeway, the freeway number, and the description of the incident.

Traffic incidents dataset (https://data.lacity.org/A-Safe-City/Traffic-Collision-Data-from-2010-to-Present/d5tf-ez2w)

The dataset contains the traffic collisions happened in LA from 2010 to present. For each of the incidents, it includes the time it occurred, the location in latitude and longitude, the cross street, and the area.

Proposed Solution and Real-world applications:

We propose to understand the urban mobility of the city of Los Angeles using data visualization tools such as bar graphs, line charts, heat maps of LA locations etc. to comprehend the travel duration given the source, destination and month of the year. The solution would be used to understand the urban mobility of Los Angeles given the hour of the day. This would be useful to make informed decisions about area picking and route picking for a more efficient traffic flow.



Project steps and timelines:

Steps	Estimated time of Completion	People responsible	Status
Data collection	10/29 to 11/3	Emal and Cai	Completed.
Data preprocessing	11/4 to 11/10	Emal and Moyan	Completed.
Exploratory analysis	11/11 to 11/17	Moyan and Yifan	Completed.
Data visualization	11/18 to 11/24	Cai and Yifan	Completed.
Drawing inferences	11/25 to 12/4	Everyone will be involved.	Completed.
Presentation preparation		Everyone will be involved.	Completed.

Github Repository:

https://github.com/bananannn/ECE-143-Group-2