Locale.ai Interview Task – Frontend

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Representing csv data on a map, filter through it and convey useful info through charts on some of the key criteria.

Approach –

Tech stack –

React and redux for the frontend framework, react-mapbox for the map , react-mapbox-scatterplot overlay wrapper for the plotting of the points and react-vis for the charting.

React components –

The app has 3 main components-

1.The file upload component – User interactive button to upload a local csv file.

2.The map component – The biggest component in the app, containing much of the logic for cleaning, filtering and displaying the points on the map.

3.The charts component – Displays the charts to help user understand their data better.

Methodology –

1.The file component takes in the data, then converts it into a javascript object with a custom function and passes it along to the map component;

2. The map component has a cleaning method that will make the object into more usable pieces of data and stores them in the state. The cleaned data will have info like hour, month and booking mode in a more accessible way, making it easier to display and filter.

3. The data is passed onto the reactmapGL over a scatterplotoverlay to display it on the map with a select style.

4. The different types of charts required are made into different sets of data and passed onto the charts component where there are conditionally rendered based on user choice, default being the hourly monitoring .

Things to build on –

- Combined filtering for more precise inference.
- Using deck.gl instead of a react-mapbox wrapper.
- More charts
- Mobile responsiveness
- API fetching for non-local data
- Custom styling
- Accept JSON data
- Popups for in-map data display
- Better code structure

- Variety in the kind of charts

Thoughts on the dataset –

- An area pincode or name would help add another layer of filter and be useful to track where rides are started. The area code and city code inside the dataset is meaningless to a third party, like me. I tried to reversegeocode the lat,long but that's over 40,000 fetch api requests and app would throttle.
- Translating the car_id to an actual car would give more insights to what users prefer that we can show in the charts.
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Conclusion –

This app / task was something extremely new to me as I have always only worked on the UI/UX side of things and never had to handle anything related to charting or data display and had to learn almost everything in here from scratch. I simply could not understand deck.gl well enough to implement in this project, which is probably the biggest shortcoming I can see in it. I spent a good amount of time building a version of this that was not scaling at all, with marker and popups for each ride, and realized the switch late and all said and done, it was great fun to build this, although slightly infuriating at times and more than a little frustrating some other times, but it was definitely a fun challenge.