

EE/CprE/SE 491 REPORT 6

Mar 6 - Mar 19

Group number: 10

Project title: “Visualizing Probabilistic Whereabouts of Moving Objects”

Client &/Advisor: Goce Trajcevski

Team Members/Role:

Nathan Thoms - Frontend

Mara Prochaska - Backend

Eric Jorgensen - Documentation

Ryan Cook - Backend / Frontend Switch

Report Summary

Within the report timeframe mentioned above, our team has begun discussing design details – what frameworks and libraries we will use to aid in application development. In our discussion we were primarily looking at frontend frameworks and libraries for visualization of map and space data. The goal is to find a set of tools that enables us to meaningfully visualize and interact with data to satisfy user needs with the least amount of development time – given the time constraints and deadlines of the project. Through discussion and research we found vue.js, a frontend framework, and plotly.js / mapbox.js, JavaScript compatible visualization libraries.

Accomplishments

Accomplishments from the report time period include:

- Framework and library research
 - Framework and library compatibility
 - Functionality provided
- Generation of high-level task decomposition diagram (Included Below - *Figure 1*)

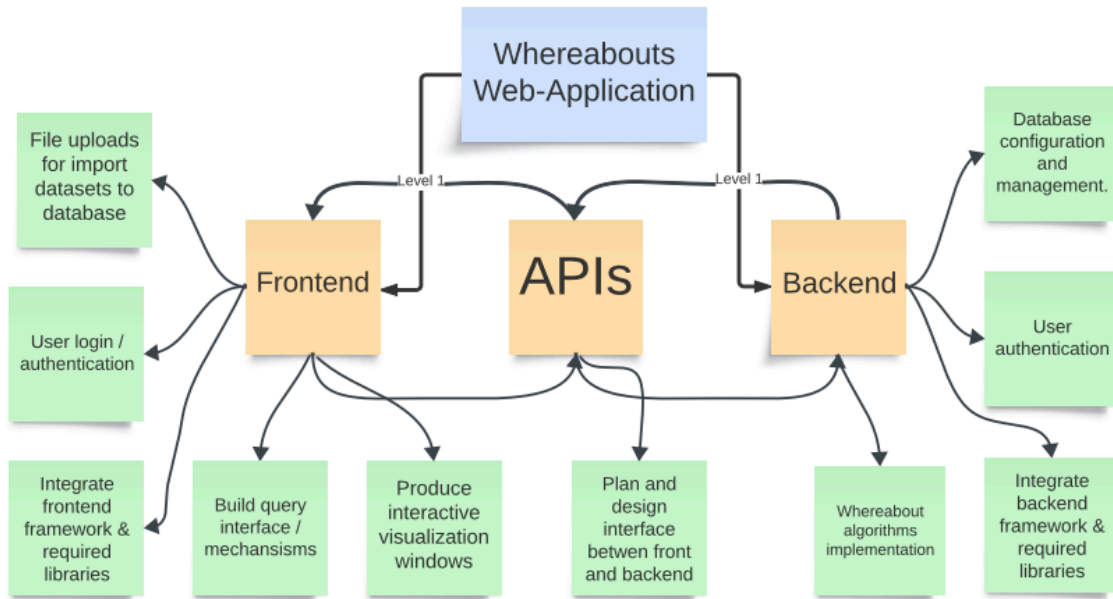


Figure 1 - High Level Task Decomposition Chart

- Completion of Lightning Talk slides and in-class presentation
 - Narrowed down risks and mitigations
 - Determined project management style will be Agile with frequent scrum meetings in order to allow for obstacles and readjustments as necessary

Pending Issues

From researching vue framework compatibility with mapbox.js there may present an issue or at a minimum, added complexity, in integrating the two together. The issue is related to mapbox tools directly performing DOM manipulation – this may conflict with Vue’s virtual DOM-based rendering system. Mapbox provides documentation on how to integrate the two together, but is a noteworthy compatibility issue nonetheless, especially when potentially using plotly.js to abstract interaction with mapbox.

Possible solution may be directly use mapbox.js, following their integration documentation should issues arise during implementation.

Individual Contributions

Team Member	Individual Contribution	Hours this Week	Hours Cumulative
Nathan Thoms	Task decomposition chart, framework & library research.	5	29.5
Mara Prochaska	Lightning talk project management information, framework/library research, updated team website.	4	23.5
Eric Jorgensen	Lightning talk slides	2	20
Ryan Cook	Engineering standards research, framework & library research.	6	19

Upcoming Plans

Within the next week we will begin thinking more about the finer details using the high-level task decomposition and user requirements as a guide. This week was a good start – having looked into visualization frameworks and plotting libraries. Things to look into include how to enable cross origin resource sharing and user authentication given a java spring boot backend. Establishing a more concrete picture of the front and back end should prove beneficial when designing the backend API; the contract between client and server for passing information.

Action Items

Team Member	Individual Goals	Estimated Hours
Nathan Thoms	A high-level systems diagram still needs to be created. Research Java Spring Boot backend framework.	5
Mara Prochaska	Begin rough Spring Boot experimentation, start on Design Doc 3 information, update team website, team meetings.	5
Eric Jorgensen	Design doc 3 work.	3
Ryan Cook	Begin learning javascript and vue.js	7

Advisor Meeting Summary

During the advisor meeting this week, we determined that we will begin experimenting with a rough prototype or demo that can be shown to the faculty as proof of concept at the end of the term. After this week, we will experiment with the identified libraries to ensure they are the appropriate tools to include in the final design documentation. We also discussed possibly refining the expectations for team members in terms of meeting regularly and informing other members of absences.