SAN FRANCISCO TRANSIT MUNI DATA INSIGHTS

CMPE 138 Project Abstract

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CMPE-138 Sec 02 - Database Systems I

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11 April 2024

Project Description:

For our project, we will be working to create a muni transportation guide of San Francisco that can help guide individuals of the various routes they can take with the muni to get to different areas of SF. Our application will give individuals insight into the complicated route system of San Francisco and ensure they can get to their desired destination without getting lost and the correct route they would need to take. We will be referencing the BigQuery data set: San_Francisco_transit_muni.routes to help construct our application and provide the dataset we would be using. The application we are doing will be focusing on the data processing as our data layer where we would manage, process, and present the transportation data to users for efficient use. We would integrate and clean the raw transportation data from the dataset into a usable format for individuals to use. The dataset we are using will provide a unique route-id for the specific route as well as the short name and long name of the route for users to identify which route they would need to take and the destination of each route. Lastly, it will provide the route type which describes the type of transportation that can be used for said route ranging from streetcars, light rail, subway, and other possible forms of transportation. The goal of our application is to allow users to freely travel through San Francisco and understand the correct routes and forms of muni transportation they would need to get to their location of choosing.

Tentative Schedule

Week 1: Week 15, 2024 (Beg. April 8th)

Objective: This week we want to define our problem and refine our specifications.

Tasks:

- Identify our project problem or application with regards to the San Francisco public transit.
- Familiarize ourselves with the large data set (bigquery-public-data.san_francisco_transit_muni) and determine what data will be required to address our application.
- Refine project proposal.

Week 2: Week 16, 2024 (Beg. April 15th)

Objective: This week our objective is to define our technical structure and begin development of our project

Tasks:

- Create a conceptual model of our application's data layer with an ER diagram.
- Develop database schema with route information as part of our navigational guide.
- Begin coding SQL queries for primary application features like searching for routes and displaying route details.

Week 3: Week 17, 2024 (Beg. April 22th)

Objective: This week we will work on more features development and query optimizations.

Tasks:

- Develop and test SQL queries for more advanced features that we want to implement.
- Optimize database queries and other enhancements to improve user experience.
- Begin drafting PowerPoint slides and prepare for project presentation.

Week 4: Week 18, 2024 (Beg. April 29th)

Objective: This week we will finalize our work and finish our presentation.

Tasks:

- Perform comprehensive testing on our features and queries.
- Document the work we did and compile results/findings for the final project report.
- Practice our presentation and prepare our application for a demo.

References