University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: _1_____

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Group Number: ___49____

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

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Project Description:

Domain: City public transportation—public services in a city by a company/government for transportation

The application aims to optimize the public transportation system in terms of providing information like real-time scheduling data and user feedback.
An efficient transportation system is crucial for a city as it facilitates economic growth, reduces traffic congestion, and minimizes environmental impact.

By improving public transit efficiency, cities can enhance accessibility for residents, promote sustainable commuting options, and ultimately contribute to a higher quality of life while reducing reliance on personal vehicles.

Additionally, this application manages the efficient scheduling, and maintenance of all public transportation vehicles in Vancouver, as well as ridership. This includes managing the real-time schedule of a city subway, and public buses, which helps reduce wait times and makes public transit more reliable and encouraging more people to use it.

Information about the riders of the system can be recorded to further customize their commuting experience and provide the system with capabilities of operating at maximum capacity at required times, avoiding overcrowding during busy times. Additionally, the app addresses environmental concerns by tracking the carbon savings associated with increased public transit use, contributing to the city's sustainability goals.

Database Specification:

A user using this database will be able to manage the schedules of bus/train lines, as well as manage different stops and vehicles. The gas usage/carbon footprint for vehicles are able to be recorded as well. People that ride the vehicles will be able to plan trips and have them logged along with their name, including the relevant destinations and the departure time. There will also be functionality to gather user feedback and measure demand for transportation at certain times of the day in order to meet the needs of the city. Furthermore, a user can keep track of revenue and whether or not a user meets the sufficient funds to be allowed on a vehicle.

Application Platform:

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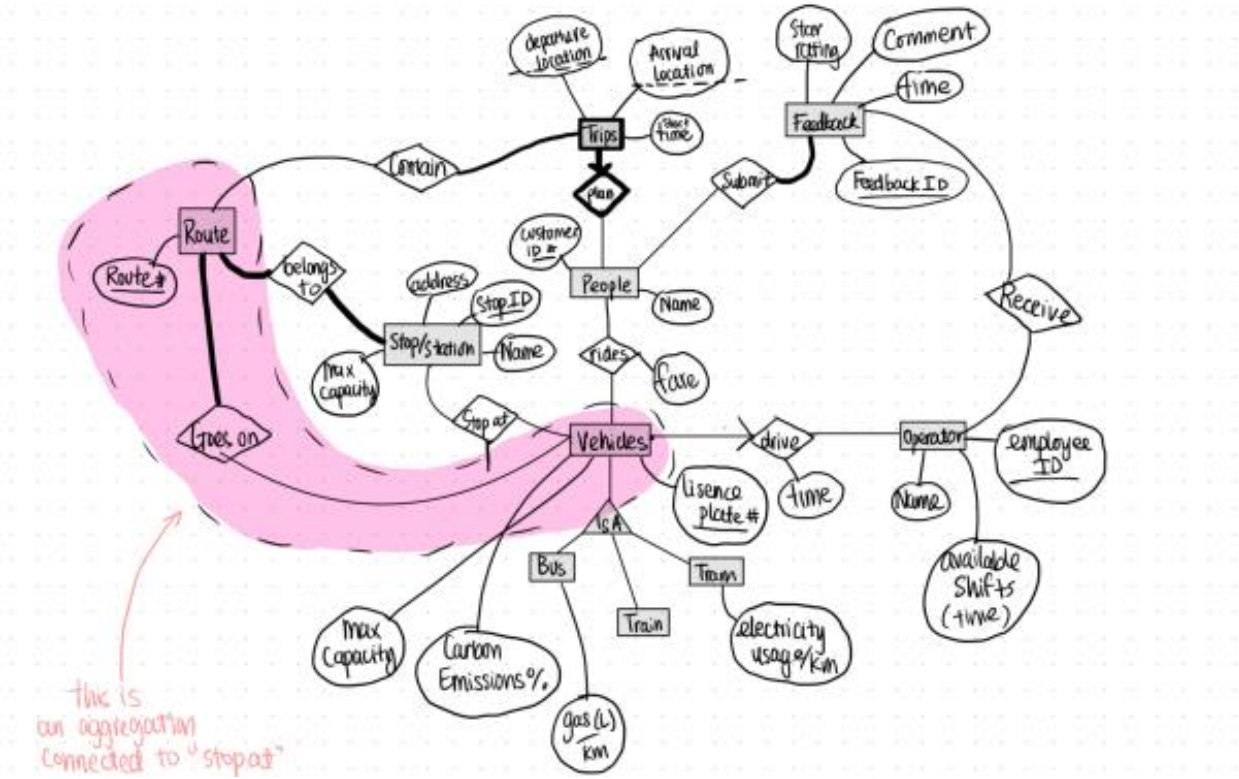
Our application will use the department provided Oracle for our database. Our tech stack will include JavaScript which will be paired with Oracle, and we plan to create a front-end with HTML and CSS.

ER Diagram:



Further Comments:
Route only has a single attribute, a primary key “Route #”. The route represents the “line” of the bus or train. For example, in Vancouver there is the R4, 99, and Expo Line. In our model, the lines are represented using numbers only and this is the only relevant information unique to a Route.