**Project Proposal - CTFastrak Application**

**Team V.T.D.**

Team Members: Khuong Tong, Kevin Daley, Karthigaa Vijayakumar

**Intended use:**

This system is designed for riders of the CTFastrack in the central Connecticut region. All riders with access to an internet enabled device with a modern web-browser will be able to access the website. The system will provide routing information for a user once they have entered a location and destination. User may also select points on the map to view more detailed information.

**Overall functionality:**

The application will provide the following functions:

* User can input time, location, and one or multiple destinations.
* Users can zoom in or out of the map.
* Locate the nearest bus stop to the current location and destination.
* Provide a detailed view displaying show the bus number and where it is going.
* Real time calculation of expected bus-fare, time, and distance.
* Display service alerts about events that may affect travel.
* Email subscription for service alerts.
* Show the complete route from start to destination.
* Provide alternate routes based on user criteria.
* Users can add multiple destinations.
* Provide suggested optimum route.
* Allow users to rearrange the their destinations.
* Form for user input, review, and suggestions.

**Main Components:**

Service Provider- This is an external resource that will provide our application with live data. The Datafeeds component will send out requests and accept data from the service provider.

Google API- This is an external resource that will provide us with map services. This will include the base maps and methods for interacting with geographic data.

Datafeeds - Datafeeds will send out requests for live data. Then it accepts, extract, and formats the raw data. It will be able to handle the data in JSON or GTFS-realtime formats as provided by the Service Provider.

Interface Controller- This component can accept data from the Google API and the Datafeeds. This dynamic data will be stored by the Interface Controller and updated as necessary. Queries from the User Interface is interpreted by this component. This component will respond to queries from the User Interface and send live data updates.

User Interface- The user interface is the only component that interacts directly with the user and accepts user queries. In response to user interaction, this component displays real-time information and detailed data about the routes, bus-stops, and map data. This component feeds user queries to the Interface Controller.

Email Service- The email service could take the user input through the Interface Controller and gives updates in response to the user by processing the real time information from our external service providers.