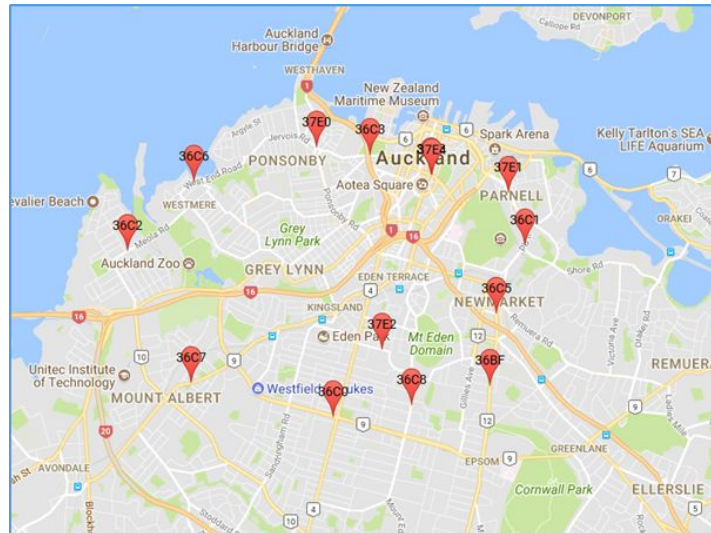


# Auckland Transport Vehicle Tracking

## INFO263 Assignment



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## **Introduction**

The website created was made to solve a problem where Auckland Transport wanted to track and manage their fleet of vehicles via an interactive web-based application. The website consists of a map (Google Maps) and a drop-down box which contains the available routes. Once a route is selected, the map is re-adjusted and populated with markers which indicate where the buses are on the current route. If there are no buses on a selected route, the webpage will display that there are no buses on the selected route and the map will not move. The markers contain information about the buses such as the ID, longitude, latitude, start time and the timestamp of the last update to the database. The map is then updated every 30 seconds to show the buses movements.

## **Website functionality**

Client side functionality:

- Initially, a map which shows the Auckland region is loaded into the webpage using the Google Maps JavaScript API.
- Inside a function, a SQL request using JavaScript is made using the `sql_request_processing.php` file (server side) to query the Auckland database.
- From the SQL request, data is pulled from the live Auckland API and is displayed as markers on the map.
- The map is then resized to show all the markers and information about a selected marker is shown in an information window above it.
- The web-page is formatted using the 'master.css' styling file, which ensures that all page elements are formatted correctly.
- The map size is readjusted to show a suitable size.

Server side functionality:

- A connection is made on the main website page to the database to retrieve information.
- A drop-down box is created which queries the database and gathers the short form of the routes to fill the drop down box with values.
- In the `sql_request_processing.php` file, a connection is made to the database, using the shortened name of the routes, a query receives all the trip ID's which match the route name. An array is then created which contains information for each bus on each trip that is then processed via JavaScript from the client side.
- Once an input is selected from the drop down box, the function from the client-side is executed.

## **Reflective summary for the group**

### **Communication**

Our group's primary form of communication was face to face whenever we were working on the project together. Facebook Messenger was used to organise times when the majority of us could get together to work on the assignment. This allowed us to talk about the code in more depth as it is nearly impossible to hold a complex conversation about code over the internet.

### **Code sharing**

After each group meeting the most updated code done was shared on Facebook Messenger. Often it was also shared using memory sticks, and was stored locally then shared whenever we needed more than one person working on it.

### **Task allocating**

All members had input into everything as we worked together to code so we could bounce ideas off each other. Since most of the work was done in group meetings, we worked together at the same time, sometimes trying to solve a specific problem together, or working on different tasks separately.

### **What went well and difficulties faced**

We worked well as a team to solve problems. Communication was key and we managed to do so very effectively to produce a high quality result.

One of the main difficulties we faced was that we didn't have a vast knowledge of web coding. Solving solutions was difficult at times and would take a while to solve it due to our knowledge at the time. Another of the difficulties faced was that we were often working on different versions of the project files - this meant that some of us were missing part of the functionality that had already been implemented. This therefore made it harder to test and debug our code.

### **What would we do differently next time**

One of the main things we would do differently next time, would be the use of a Git repository, as it would make code sharing so much easier; all group members would be able to access the latest version of the code from the repository, instead of needing to copy the latest version onto a USB drive, or to Facebook Messenger. We would also try and make more use of the allocated lab slots to question the tutor when we were stuck - initially, we worked on the assignment in our own time, and did not make use of the labs to ask questions about the assignment. However further into the project, we started making use of the labs, and tried to get as much clarity and answers we could from the tutor. Next time, we would do this from the beginning, so that we don't waste valuable time in the early stages of the project.