

NC 812/ESD 812: Internet of Things

Lab 4

Bus Tracking Application using Internet/ Web Technologies

Due: March 24th, 2017

The objective of this lab is to develop a bus tracking application using Web technologies. This application will gather data from a Web service and display/log data on local system. You will be using open APIs available online for Bangalore Metropolitan Transport Corporation (BMTC). This will prepare you to understand how to establish and work with HTTP connections, HTTP requests and user interface development. You will require basics of Python and JavaScript (jQuery) for this lab. The deliverable will be a working demo of the application on your laptop configured sufficiently for the application. Configure and setup your own laptops for demo, no sharing of laptops will be allowed

1. Find the online resource to access BMTC's estimated time of arrival of a specific bus at a particular bus stop (of user's choice) and details of bus route to a stop (may be a few bus-stops away).
2. Create a website (which should run in one of the faster web browsers on your laptops) to display the above data and update the same every 30 seconds by reloading the latest information from BMTC. The source and destination will be user defined inputs. The destination as per user or a list of all stops on the route may be displayed. The student can decide on how to improve upon this.
3. The information about the time of arrival of the bus should be displayed as a countdown (in seconds or minutes). Use the Countdown widget from the jQuery library.
4. The above data from the resource will be in XML format which will require you to parse it as per your usage requirements locally.

References:

A few sample APIs available online (you may use other sources available online for BMTC API as per your requirement)

1. <https://www.npmjs.com/package/bmtc-js-api>
2. <https://github.com/vivekchand/bbus.in>
3. <https://github.com/iotakodali/bmtc-realtime-api>

Others:

4. <https://bcourses.berkeley.edu/courses/1293124/assignments/6059206>