GPS-Android based Location Tracking System for Public Transportation (TrackIT)

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Declaration

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Name of the Student Signature of the Student

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Supervised by

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Dedication

This thesis is dedicated to my parents, Mr. S.Vithanage and Mrs. G.Thambawita for their endless love, encouragement and support.

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Abstract

Public transportation has been considered as the main mode of transportation in Sri Lanka. General public can view static time table of public transportation but properly aligning the transportation with the correct time table is not happening due to various reasons such as traffic conditions, bad road condition and some technical or human resource unavailability. From the passenger's perspective, they do not have a method to find the actual location or availability of the bus or train causing to waste of time waiting on bus shelters and railway stations. Therefore some method for location tracking for transportation system is important to enable passengers to reduce their time wastage.

Many researches have been conducted on location tracking and monitoring in the world. With the spreading of information technology, over the past few years there have been some attempts to enhance the quality of public transportation with the application of information and communication technology. However still there is no proper mechanism to find real time location of a bus or train although there are some commercial tracking systems to track private vehicles by installing some costly hardware devices.

This research focused on utilizing commonly used technologies and infrastructure to implement the location tracking system for public transportation sector. The system consisting of a web application and a mobile application to enable location tracking. The web application is the core of the system which provides the interface for the general public to view the schedules and actual location of the bus or train. In addition to the location information, it predicts time of arrival/destination through analyzing previous data and current live data. The administration panel of the main web application enable management of all master data of the system.

With this system, it is expected to facilitate passengers to make better travelling decisions by providing required information for them. Also relevant authorities also can use system data to support decisions to enhance railway service and bus services. During the evaluation, it was shown that system was successful more than 70%.

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