Community Based Train Locating System (CBTLS)

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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 Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Dedication

This thesis is dedicated to my parents, Mr. D.S. Senevirathna and Mrs. A.P.P Karunasingha for their endless love, encouragement and support.

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Abstract

Rail transportation has been considered as a main mode of transportation in Sri Lanka since a long time. Therefore it is important to further develop and enhance railway transportation as an alternative method of transportation, especially considering the traffic congestion that could be observed in city areas. With the advancement of information technology, over the past time there have been many attempts to enhance the quality of railway services, but despite of them, some major concerns for the train passengers in Sri Lanka still remaining unsolved to date.

The main objective of this project is to propose and implement a crowdsourced real time train tracking system based on GPS named Community Based Train Locating System (CBTLS), for the benefit of train passengers and train transportation of Sri Lanka, aiming to address the major concerns and enhance the railway service.

CBTLS is a community based (crowdsourced) system, therefore data is retrieved from the train passengers, and then organized, processed and analyzed by the system, and resulting information and predictions is given back to the train passengers.

The proposed system consists of a native Android mobile application and a Web application. Any train passenger with a smart mobile device or a computer would be able to access the system through internet, update the train locations, compartment details, and view current and/or last known locations of a train, view analysis, predictions and suggestions on train schedules. Other than static train schedules, rest of the data required for system's functionality is acquired from the train passengers, hence the system is community based.

As an additional feature, a location aware alarm clock is integrated into the native android application, for the use of passengers to indicate when their destination has been reached.

Other than train passengers, the system consists of an administrative functionality as well. System administrators hold responsibility to control and overview the user accounts created by train passengers and manage static master data.

With this system, it is expected to facilitate train passengers to make better travelling decisions by providing required information for them, hence facilitating efficient usage of railway services.

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