

An Optimum Train Selection and Management Platform

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Sri Lanka, as a developing country faces rapid urbanization, which leads to high mobility requirements. Due to increased traffic congestions during peak hours, people tend to select the railway system as their mode of transportation. As a considerable amount of people choose railway as their preferred platform in their daily routine, it is highly crucial to maintain an efficient and timely railway system. Unfortunately, the Sri Lankan Railway system is not known for its efficiency. As a result, considerable number of daily users of the system are affected in their daily routines. Increasing the efficiency of underlying infrastructure has been going on for decades, yet it has not been a solution for the inefficiency of the railway system itself. Hence, the only logical approach to address this issue is to introduce a common platform, which the users and Railway department can communicate, while maintaining a stand-alone system which can select optimum trains for the users. The objective of this research is to discuss the necessity of the proposed solution, ultimately providing a solution to the inefficiency of the railway system of Sri Lanka. The proposed platform will comprise of two parts; A web application for the railway department and an Android-based mobile Application for railway users. The web application will be powered by a ESP8266 and NRF-24 based hardware modules with a firebase Backend. A mobile application will gather required inputs via the hardware modules to provide users with an optimum train to travel at any given time of the day towards the required destination. System will be running using dynamic data acquired from the train stations with a dynamic train schedule. Users will have the opportunity to get notified about train delays, unavailability and breakdowns. The aim of this research is to provide a common communication platform to railway department and public, ultimately making railway platforms more efficient.

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