

## **Digi Bus, a mobile-based software application for public bus transportation in Sri Lanka**

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### **Abstract**

Even though Sri Lanka's public transportation has few location tracking and monitoring systems there is no proper mechanism to make it easier for the public. "Digi Bus" is a real-time tracking system introduced for the public transportation of Sri Lanka. Main aim of this research is to help passengers to travel conveniently and comfortably with the help of modern technology. The research has been used machine learning and IOT concepts and algorithms. In order to overcome all the drawbacks of the public bus transportation service and to build up a successful mobile application, data was gathered from the general public. The proposed system is successfully designed, implemented, and tested. After selecting the desired route and the bus stops user has the ability to view the bus details including bus number, Live onboard passenger count, Available number of seats, distance that the bus can travel based on the fuel level, real arrival time of the bus and the relevant bus fare. Then user can view and track the relevant bus using maps. Reader attached to the bus can successfully read the RFID tag which will be given to the passenger and the system has the ability to deduct money from the passenger's account based on the travelling distance. Also "Digi Bus" will give continuous notification about buses through speech output that helps visually impaired people to travel easily using public transportation. GPS-based tracking system, seat availability indicators, onboard passenger count indicators, traveling cost calculator, fuel amount-based estimations, real arrival time calculator, a special component designed for visually impaired people, and RFID-based automatic bus ticketing system of "Digi Bus" are aiming to provide a better service to the passenger.

**Keywords:** *Automatic bus ticketing system, GPS, Real arrival time, Visual impairment people, RFID.*