

Toll Gate Integration System

Arul Jothi K, Reni Hena Helen R, Ajay Akilan K, Dinesh E, Mohanraj M

Professor, Department of Computer Science and Engineering¹

Students, Department of Computer Science and Engineering^{2,3,4,5}

Dhanalakshmi College of Engineering, Chennai, India

Abstract: Toll collection contracts have certain guidelines and rules for collection of toll tax from vehicles against the use of constructed roads. Representation of such rules for collection of toll taxes using a smart contract, which is a paradigm based on blockchain, will solve some of the drawbacks of current toll collection and management system. The proposed methodology uses the strengths of blockchain to propose a solution to the current toll tax collection system, by ensuring complete transparency between tax payers and collectors and also attempts to curb the malicious collection of taxes from commuters. Blockchain will enable a radical way of approaching transactions as compared to the traditional society approved method where trust is placed on a central third party to carry out transactions. This paper is to provide an alternative method of processing toll tax transactions, using ethereum based smart contracts, written in solidity language, to transform traditional desktop applications into blockchain based web application, which perform better, consume lesser resources and are much more secure as compared to the current system.

Keywords: Intelligent Transportation Systems, Deep- Learning, Blockchain, Markov Queues, Smart Contracts, IPFS

REFERENCES

- [1]. Vulnerability Analysis of Highway Traffic Networks Using Origin-destination Tollgate Data, Shi Fang, Kaigui Bian, 2016, IEEE.
- [2]. The shortest Path or Not? Analysing the Ambiguity of Path Selection in China's Toll Highway Networks, Shi Fang, Kaigui Bian, 2016, IEEE.
- [3]. Analysis of E-toll card usage at pondok ranji tollgate Andry M. Panjaitan, Jonathan Andrew, 2018.
- [4]. A Survey on RFID based automatic toll gate management, K. Gowrisubadra, Jeevitha, IEEE, 2017.
- [5]. Transport Improved Intelligent System for Reliable Traffic Control Management by Adapting Internet of Things, Ramkumar Eswaraprasad, Linesh Raja, IEEE, 2017.
- [6]. Automated toll collection system using GPS and GPRS, Sudheer Kumar Nagothu, IEEE, 2016.
- [7]. A Unique Identity based Automated Toll Collection System using RFID and Image Processing, Prakshaal Jain, Prashant Dhillon, Anand Vardhan Singh, IEEE, 2018.
- [8]. Automated Toll Tax Collection System using Cloud Database, Dipesh Garg; Rajeev Tiwari; Shuchi Upadhyay, IEEE, 2018.
- [9]. Design and implementation of low-cost electronic toll collection system Subhankar Chattoraj, Saptarshi Bhowmik, Karan Vishwakarma, Parami Roy, IEEE, 2017.
- [10]. Radio Frequency Identification (RFID) Based Toll Collection System, Atif Ali Khan; Adnan Essam El. Yakzan; Maaruf Ali, IEEE, 2011.
- [11]. Automated toll collection with security system, P Kamala Kannan; M Balaji; A Avinash; S Keerthana; R. Mangayarkarasi, IEEE, 2010.
- [12]. A survey on automatic toll gate collection and management, S. Aarthi; M. Indu; V. Sadhana, IEEE, 2017.