

Design and Implementation of an Automated Train Transportation Ticketing System for Kaduna to Abuja Train Stations

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Abstract - Transportation is an easy way of moving goods, people or animals from one place to another. There are different types of means to which things can be transported but the area we are going to concentrate on is transportation by train. Rail transport is a means of transporting people and goods from one place to another via a train. Trains are vehicles that runs on rails or tracks. Ever since humans came to existence, the drive we have towards knowledge, inventions and innovation is on an unending loop. Thanks to that, we have profoundly moved forward in terms of our technological developments and thus created things that added more value and efficiency to our day to day activities. In this work, we lay out a research intention directed at designing and implementing an automated train transportation ticketing system for the Kaduna-Abuja Train Stations.

Keywords: Design, Implementation, Ticketing, Automated Train Transportation System, Kaduna, Abuja Train, Stations

I. BACKGROUND OF THE STUDY

“The Train Ticket Reservation System is an online application that allow guests to access transport ticket, purchase and pay the ticket on the internet” [1] E-ticketing is a medium that allows passengers to get their tickets electronically without stress of being in a long queue. “Electronic ticketing for urban or rail public transport is usually referred to as travel card or transit pass”[4] The use of an online train ticketing

system brings efficiency in the process of ticket acquisition, managing train schedule and records.

“The Nigerian Railway Corporation traces its history to the year 1898, when the first railroad in Nigeria was constructed by the British colonial government” [2] One of the first standard gauge railway modernization projects (SGRMP) is the Abuja-Kaduna rail. It has a total length of 186km and was contracted by China Civil and Engineering Construction Company (CCECC). “The construction of the Abuja-Kaduna rail line was started in February 2011 and completed in December 2014 with China’s support. Nigerian President Muhammadu Buhari officially inaugurated the line for commercial services in July 2016” [3]

The fact that train transport is the cheapest means of transportation and would be able to transport a large percentage of the population when fully utilized is the main factor of motivation. Also, the recent interest of the government in the railway sector plays a vital role in being the main motivation for this project. Our interest is to solve the problem that passengers face when going through the manual process.

II. PROBLEM STATEMENT

Being a Nigerian, we can say that one thing is certain when it comes to buying or getting tickets manually and that is long queues. Long queues at ticket counters is almost inevitable. Traveling Stations do not usually provide adequate number of ticket

counters in order to serve with absolute efficiency and effectiveness. Another reason is the long duration of time that takes the passengers to get their ticket or time the person in charge at the counter takes to settle the passenger's change. Automated ticketing systems will resolve this issue.

Data redundancy (repetition): This implies that data repetitions can occur in different ways, files or the same data will be repeated in different formats. The problem faced in manual processes is that maintaining such large data is a big problem and no adequate security measures are put in place. The implementation of an automated system will help manage these problems and would require log in details in order to access the system and access would be denied when a false information is typed in.

III. AIMS

The aim of this project is to design and implement an automated train ticketing system which will fit in with the transport system and will be cost friendly.

IV. OBJECTIVES

The successful implementation of the system means that time taken to get tickets at the ticket counter will significantly reduce. The project objectives are as follows;

- 1 To identify the significance of the project in providing information that is useful to railway passengers and use the web based application to overcome some of the problems the current manual system brings.
- 2 To help keep customer records because running this kind of services often comes with a huge amount of data which would be really hard to sort out manually.
- 3 To build a web based application on train reservation to take care of online booking and know the train schedules.

V. SCOPE AND LIMITATION

The system to be developed will include online ticket booking; keeping of customer records, train schedules and prices for various destinations and will have a page dedicated for customer feedback on their trips or complains they might have.

The system will not have the feature to cancel reservation; specific seat reservation, and other management issues.

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