Smart Metro Payment System Using IOT

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ABSTRACT: This project is designed so that students can understand the technology used in the now a day's driver less metro train which is used in most of the developed countries like Germany, France, and Japan etc. These trains are equipped with the CPU, which control the train. The train is programmed for the specific path. Every station on the path is defined; stoppage timing of the train and distance between the two stations is predefined. This work aims to design and develop a new efficient Payment system using User identification which will be a good among all other systems. Today's biometric system using in many workplaces.To use this techniques in payment system for cashless transaction. Replace so many drawbacks like travel without ticket or many more. It is high security and easy to use. Lots of many techniques combined and more networks are used to high performance. Replaced old fashioned time consuming system by this system to design using Image Processing and Raspberry pi in IOT.

KEYWORDS: internet of things, biometric fingerprint, Database system, embedded system, Ticketing System..

I. INTRODUCTION

In the daily operation of public transport systems i.e. Frameworks, when travelers use the public transport, every time they confront the troubles when the transport comes up short amid progressing venture. The transport driver and the conductor attempt all alone to discover the answer for the transport disappointment. To get the vital offer assistance from confirmed sources is truly troublesome and protracted. Amid this feverish procedure all passengers don't have some other alternative yet to hold up. Be that as it may, passengers in the transport have no clue at the point when the real cause will arrive or not. They go into predicament whether to sit tight there for help to arrive or to move by private vehicle. This is truly tedious prepare and irritating for passengers. Public transportation systems play an increasingly important role in the way people move around their communities. Consider some of the benefits of public transportation, the challenges facing its widespread adoption, and the role transit traveler information systems can play in meeting those challenges. For individuals, public transportation provides mobility to those who cannot or prefer not to drive, including access to jobs, education, and medical services. In general, transport mobility the ability for people to move around their community - is a strong indicator for employment, with studies showing, for example, a direct connection between car ownership and employment. By helping travelers move from single-occupancy vehicles to public transportation systems, communities can reduce traffic congestion as well as its environmental impact.

Some objectives of this system are:

- Collect Data. The authenticated user loads the data sent by the device.

- Data Set Conversion and Extraction: After loading the data set, various Operations performed to process raw data (captured fingerprint).

- Store Data: Stores the data to database.

- Respond system Send the data to system when requested; only the requested data will be sent.

- Handles all communication.

- Cut the calculated amount from client database.

II. RELATED WORK

A review of literature places a research study in its proper perspective by showing the amount of work already carried out in the related areas of the study. The amenities provided with the passengers by the Indian Railways have attracted the attention of many researchers these days due to its recognized importance. Shanmugam has highlighted in general some aspects related to the marketing of railway services in Madurai and the behaviour of passengers and users of goods traffic towards rail transport [1]. Promila Sharma have reported that most of the passengers were dissatisfied with the railway service on different fronts namely catering, cleanliness and enquiry service. Most of the complainants did not use the redressal service provided by the Railway department because they did not expect any concrete action from Railways [2]. Vivekanandhan in his study has pointed that the services provided by the Virudhunagar Goods shed satisfy its customers [3]. The study revealed that both the categories of employees have regular meetings with their subordinates, which is important to improve the performance of the subordinates. The regularity of the superiors meeting the subordinates depends on span of control. It is observed that the span of control is sufficient as expressed by majority of the employees. The recent observation that the expenditure incurred by SCR has increased from the year of inception to terminal year drastically indicates that SCR is becoming more quality conscious and seeks to provide comfort and security to its passengers [4]. Bansal analyzed a study about the catering services in the Indian Railways, the objective of this study was to observe and analyze the catering service of the dining cars and to correlate it to the hazards that may accrue with consumption of contaminated food. The study revealed that the infrastructure of the railway dining cars, the hygienic practices observed by the food handled and the entire catering process from storage of unsatisfactory and fraught with health hazards [5]. Vijaya Raghavan expresses the need for service marketing approach to public road transport is emphasised based on a few diagnostic studies carried out earlier and a framework is developed based on the lines of Parasuraman, Zeithaml and Berry model of service quality gap and their refined SERVQUAL methodology is applied in the case of an urban city transport undertaking [6]

This study evolves a method to measure the quality of service of passenger road transport service as perceived by the customers. To establish a positive relation, between the results of the measurement and quality of services using both the approaches prove that the customer perception is related to actual service performance [7]. Freight transportation becomes imminent because the production and consumption centres are spatially separated. At present, it is found that railways are catering for the domestic freight in any country with marginal share by other modes. In India, Road and Rail are the main modes for commodity movement with marginal shares by sea and air. It is generally observed that railways are suitable for moving bulk traffic while roadways are preferred for high valued packages for short and medium distances [8]. The study indicates that an efficient transport system is essential for the movement of both goods and passengers. The omnibuses are however a refreshing contrasts to the government-owned buses. The omnibus operators constantly endeavour to improve the quality of their services. In this direction, the prescribed criteria with some of the proven methods of analysis are brought forward through this article [9]. The objectives of the study were to measure the level of job satisfaction of employees of Indian Railways and to study the working conditions in the Southern Railways. Installation of equipments of the latest technology in enquiry counters like overhead microphone to answer on-line queries should be done; works like chart enquiry, phone enquiry, personal enquiry, manning of gate should be divided among the staff. Canteen facilities should be improved; Crèches must be in operation for the women staff to enable them to leave their babies while working. Grievance cell should be opened to redress the grievance of the employees [12].

II. PROPOSED ARCHITECTURE

The current system will reduce the persons work to stand in queue for ticketing. The passengers who travel on Metro Railway, they do not require to carry some tickets, tokens. By using fingerprint authentication he/she can pay for the ticket.

Proposed system consists of number of modules for working of the system. The system consists of finger print module, raspberry pi micro-controller acts as main control unit. Finger print module used to do the biometric authentication. Person fingerprint is stored into database. When person authenticate using fingerprint then the person

punched fingerprint matched with the fingerprint samples present in database, if the fingerprint matched or verified then the amount of ticketing is deduct from his/her account automatically. The person ticketing entry details such as route and ticket cost is also stored into database for further processing required by railway ticketing department.
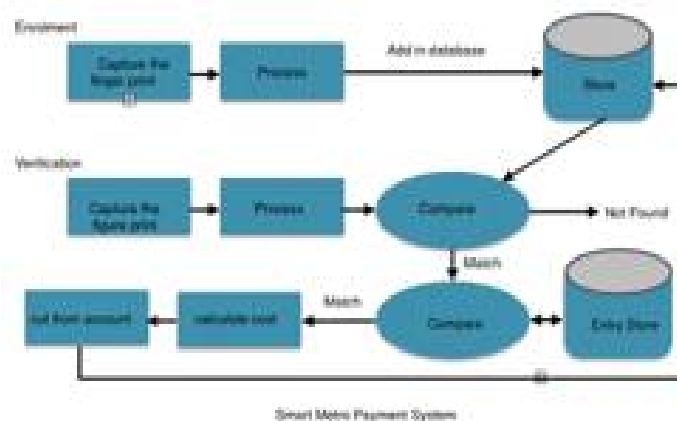

Fig 1 System Architecture

III. SYSTEM ALGORITHM

We propose an algorithm to describe the operation of the system.

i)Algorithm :

Below is the algorithm of the proposed system
1. Start.

2. Initialize the system.

3. Capture fingerprint of user.

4. Is fingerprint match with the fingerprint already stored in database? If no then jump to step 6.

5. Calculate cost and cut that amount from user'saccount. Go to step

6. Is the user is new? If yes then capture his fingerprint and save on database. Go to step 8

7. Print not found.
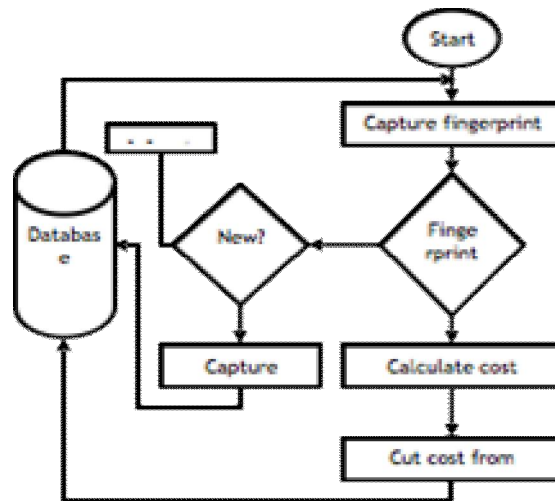
8. Stop.

ii)Flowchart :

Fig 2 Flow of System

When person authenticate using fingerprint then the person punched fingerprint matched with the fingerprint samples present in database, if the fingerprint matched or verified then the amount of ticketing is deduct from his/her account automatically. If he is a new person then has to enroll himself and this saves as a new user in database. If he is not new but still the fingerprint doesn't match then it will display not found.
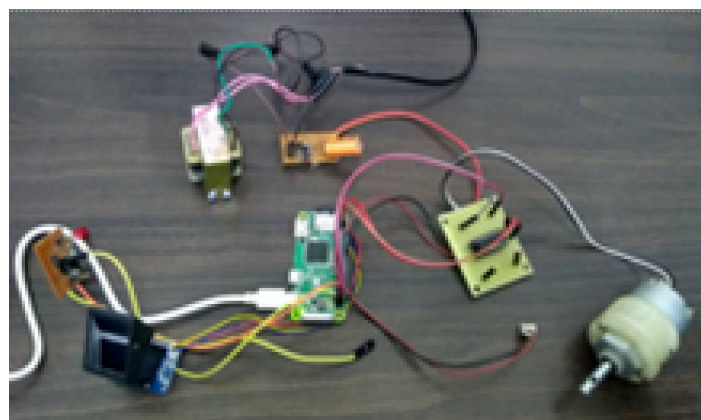
IV. RESULTS

Hardware Model :

Fig 3 Hardware model of the system

V. CONCLUSION

The smart metro payment system is used to make the rail ticketing process in easy way by using biometric authentication i.e. fingerprint authentication. Using this system person can easily pay the ticketing cost without waiting in queue for ticketing. This system can save the time of waiting in queue for rail ticketing. System will provide advance technology in rail ticketing process. This system can help to make digital India.

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