Biometric Based Automatic Ticket Vending Machine for Indian Railways

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Abstract – This paper deals with the new model of Automatic Ticket Vending Machine (ATVM) for Indian Railways which will make it smart and secure. The purpose of this project is to enable cashless payment through a biometric device. As each and every person has a unique fingerprint, we can store it in already existing ATVM database or we can link it to AADHAR card.

Key Words: AADHAR card, Fingerprint, Ticket Vending Machine

1. INTRODUCTION

India is the second largest country in terms of population and the Indian Railways is the biggest employer in India and also Indian Railways finds spot in top three for longest railway coverage. By looking at this we can say India have a huge amount of people travel by train.

We see a lot of people standing in a line to get a railway ticket and lot of time is spent to get a ticket especially in during weekends and festive time. As India is vasty cultured country we have many holidays and ticket counters are very rushed and getting a ticket is getting almost like a lottery ticket. As we know India is developing country and many people travel by train to their jobs.

1.1 Digital India and Smart India

In India, our Prime Minister is stressing for Digital India and Smart India movements where newer technologies and smart applications are encouraged. In India AADHAR Identification is a unique identification system where our biometrics such as fingerprints and retina scanned data is stored into the AADHAR database server. For every person, a unique identification number is allotted.

1.2 AADHAR

AADHAR Identification number can be used to make money transactions as the bank accounts are linked with the AADHAR ID. There is an AADHAR payment system called AADHAR pay by just using our fingerprint we make payments.

1.3 Biometric ATVM

In this prototype, we have developed a software where as a railway system administrator we can set train details and register new ATVM user. The payment will be done using our fingerprints. That is this system can be either linked with AADHAR ID or unique identification provided by the Indian Railways. The registered user can use this software to book tickets in quick time without worrying about hard cash, smart card, debit or credit card etc.

2. LITERATURE SURVEY

Many types of Ticket Vending Machines are being seen in recent years with software and hardware of different kinds.

In paper [1], the authors discuss about user centered design approach for self-serving ticket vending machine where context of use was analyzed, and conducted requirement analysis different hardware and software interaction designs were iteratively tested and evaluated with the help of 250 participants.

In paper [2], a new improved project for ticket ejecting module of TVM was proposed to overcome the defects of traditional method of vending tickets with frictional wheel, which hurts the cards easily with low control accuracy.

In paper [3], the authors proposed a smart card technology for payment of tickets and it was tested in Dublin.

3. METHODOLOGY
In the Fig -1 we have a proposed ATVM model which consists of touch screen display, fingerprint scanner and thermal printer.

Here we need to login using unique identification number, it maybe AADHAR UID or Indian Railways UID depending on what database we take into use.

4. RESULTS

The software divides into administrator and passenger user interfaces respectively.

Administrator interface consists rain information, train fare, train seat availability, reports, register user.

Passenger user interface consists of single ticket which auto fills the details only train details have to be entered and in multiple booking we have enter the train details as well as of passengers.
Fig-7: User Registration form

Fig-8: Admin train reports

Fig-9: Train Fare List

Fig-10: List of Trains

Fig-11: User Login

Fig-12: Single Ticket booking

Fig-13: Ticket for Single booking
5. CONCLUSIONS

In this paper, we successfully present the prototype model for Biometric Based Automatic Ticket Vending Machine. With the help of finger prints we can make the payment as shown in the paper for better and secure cashless transaction for buying a ticket. This would lessen the amount of people standing in line and it will be smarter and secure method of payment option.

REFERENCES

