

Aadhar Card Based Double Identity Verification System for Railway

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Abstract

“The reservation system of the Indian Railways is an enormous database system dealing with about millions of passengers everyday. Many of these passengers travel with a reservation however a lot more travel with unreserved tickets. In this measureless system, it is an extraordinary task to competently handle this data, which is the basic demand of the management. The problems with the existing scenario are Corruption, User Authentication Security Issues, Over population, Inefficient Railway Management. This paper presents an approach to tackle these problems in a much efficient manner. In case of Indian Railways, detailed passenger data is handled for reservations and in order to provide fast and efficient services, the data has to be processed and verified at a fast pace. For the Indian railways, enhancing the existent system with ADHAAR Card Identification will reduce manual intervention to a great extent. Also the verification of the passengers would be comprehensive and safe. The ADHAAR Card Based railway System will handle the passenger data more effectively and easily”.

Keywords: Aadhar card, authentication, validation, fingerprint.

1. Introduction

The necessity for secure, fast, and consistent rail services is a major concern for all the countries across the globe.[2] The incapability of the existing system to operate efficiently and be reliable, safe and secure are the issues that are haunting the countries in today's world and these issues urge the management to develop a better framework.[4] Over 22 million passengers travel daily and 8.107 billion annually by trains all over India. Security at railway platforms is not adequate and there is no verification of the passengers travelling. In our proposed system, the Aadhar card is used for verification and improving the security at railway stations.[5] Fingerprint scanner are also introduced for double verification of the passengers which also reduces the manual effort. The machine will take the fingerprints of the passengers, store them in the database and will verify the passengers by matching their fingerprints with the stored impressions. If the machine fails to identify the fingerprint then he is perceived to have used a fake identity during reservation. One major benefit of Aadhar Card-Linked Railway Management is that it will completely stop illegal and unauthorized agents from booking tickets in false names and then selling them in high prizes.[9]'. Dactyloscopy or the Fingerprint Identification System is about comparing friction ridges skin impressions of passenger's finger to determine whether the impression has come from the authorized individual or not.[7] Reasons for using Aadhar Card number in the verification system[6] -

1. It is the Unique Identification number which acts as their Unique Identity.

2. Also, The aadhar Card number fetches all the required information about the person in just one go without the trouble of entering all the data about a person again and again.
3. It also provides authenticated and verified information.



Fig. 1: Aadhar- Card [8]



Fig. 2: Fingerprint scanning for verification

2. Issues with the Existing System

In the Existing System, the person simply goes either to the Ticket counter at the Railway Station, tells the Destination and is given the Ticket, or during Online Booking we simply book tickets using our email ids.

There is no procedure where the Identity Proof of the person is asked for.

Following are the problems with the Existing Railway System of India[10]:

1. No Accurate Verification of Commuters
2. Poor Security at Railway Station.
3. Corruption
4. Railway Reservations
5. Centralized Ineffective Railway Management System

Passengers enter the Railway Station with least verification and Identification, their identities are taken for granted and are not asked for any verification at entry points on the Railway Platform which hinders Security.

Railway platform are also over crowded while people should be waiting at their respective waiting rooms and not on the platform unnecessarily.

Booking Agents and Touts sell tickets with high prices under fake names and identities, TTE's (Travelling Ticket Examiner) can be easily bribed. This causes corruption and fails the Management System.

The Government of India has also realized the issues and is also working towards generating a more secure and authentication based system for the citizens based linking Railway Ticketing with the Aadhar Card of the travelers. The system was said to be implemented by December 2016 but it has not been launched yet.[3]

3. Proposed System

We have designed the model keeping in mind the security of the Railway. All issues discussed above have been well monitored and we have proposed a system which addresses all the existing flaws.

It is a 2 Level Verification System which checks for authentication of a candidate twice. Below is the Block Diagram of the Proposed Framework:

1. **Visit to Ticket Generation Portal-** The passenger goes to the ticket portal. There he is asked for his Aadhar Card number.
2. **Enters the Aadhar card number-** The passenger enters his unique identification number and is then sent an OTP on his registered Aadhar Card details.
3. **OTP Sent for Verification-** This OTP is first step for the User Authorization and Verification. User is required to enter this OTP on the travel portal for further access to the Travel Portal.
4. **Select Travel Details-** Then the user is expected to select his destination station, arrival station, and date of

travelling.

5. **Balance Deducted-** As Aadhar Card is linked with their respective Bank Accounts, the expected amount of Travel is deducted from the available balance in their bank account.
6. **Fingerprint Verification at Platform Entry-** on Platform Entry, the Passenger is required to go through a biometric scanner where his thumb impression is verified with the one in his aadhar card. This is the Double Verification Identification point.

Once verified, the passenger gets entry to the platform. If not, he is supposed to visit the Admin or the Enquiry.

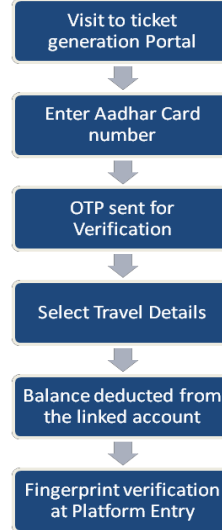


Fig. 3: Block Diagram of the aadhar Card based double identity verification system for railway

Enter Aadhar Card Number to Get OTP

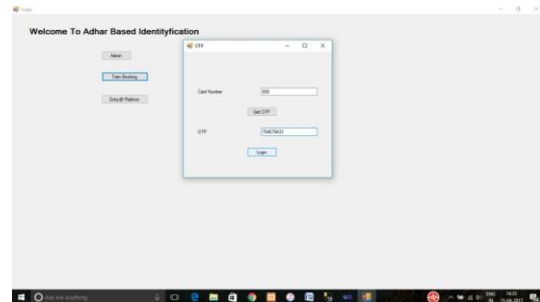


Fig. 4: OTP is generated for every user ticket booking login

OTP Sent for First Verification

This is the first verification step.

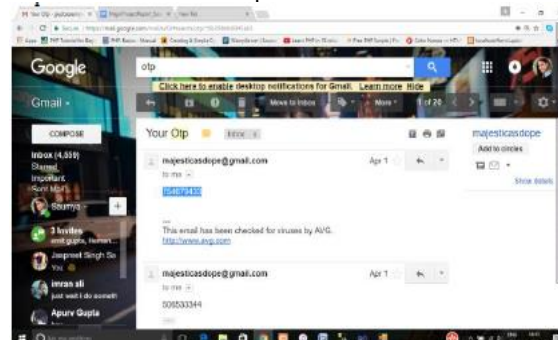


Fig. 5: OTP is sent to the person on the email id linked with his Aadhar card number

Move to Train Booking Page and Select in Details.

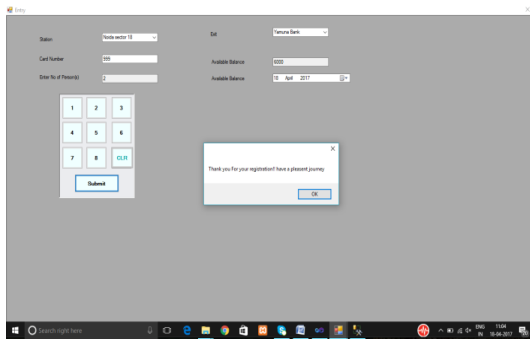


Fig. 6: Train booking page

Double Verification at Platform Entry with Fingerprint Scanning

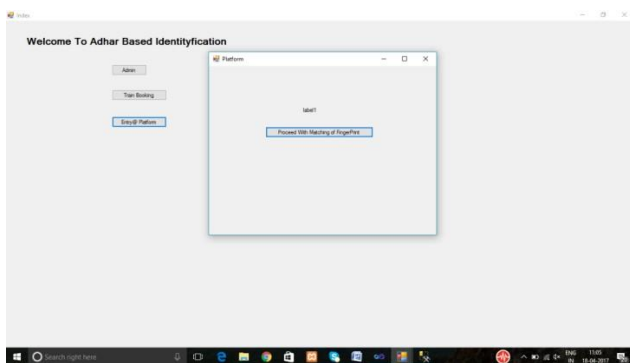


Fig. 7: Platform verification

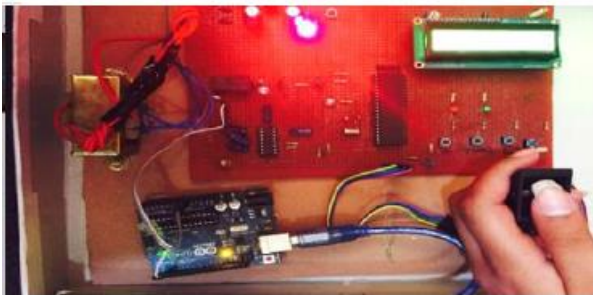


Fig. 8: Fingerprint scanner at platform

4. Conclusion

The security and verification at the railway platform will be guaranteed as every passenger would have been thoroughly verified and checked using their government ID. The management thus will encounter less fake and unauthorized travelers, reducing the risk of bomb blasts or any terror activities. The congestion at the platforms would also be reduce.

5. Future Scope

The project would really help in implementing safer railway platforms with proper verification of railway passengers. Railway platforms in India in the future would be as secure as the airports around the country. Security over the platform gets automatically increased without increasing any man power. This will cover almost all the worries the Railway management has about the rail services. Further on , Luggage tags can be introduced for passengers. The luggage tags are issued as they are at the airports.

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