

All Aboard : Transforming the Tracks of Travel with an Innovative Railway Reservation System

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ABSTRACT

In all nations across the world, the demand for safe, rapid, and dependable train services continues to be a source of worry. Safety, operational inefficiency and reliability of old railway systems and operations, as well as safety and security concerns that haunt many countries for changing rail infrastructure that exist the worldwide train sector is battling to stay afloat. to accommodate the rising freight and passenger demand because of the inefficient utilization of the rail network and Rail assets are being used inefficiently. This is predicted to cause train congestion. executives to design better and more efficient train systems efficiently. Indian Railways' passenger reservation system is one of the most extensive in the world. Approximately one million passengers travel with Indian Airlines every day in reserved accommodations. Another sixteen million passengers use unreserved flights.

Railways in India It are a huge job to navigate this large structure. We have investigated several aspects of implementing smart computing in reservation models for railway networks.

I. INTRODUCTION

Water Railways transportation has become more demanding these days as traveling is a major priority of the people, it also helps the user to easily identify trains by its shortest path so that the user can reach their destination in an easy way and quickly making it user friendly by developing a better interface. Users will be able to select a train between stations (Finding the train with the shortest path). Users can get live status where the train is at a particular time. Users can

check the PNR Status which means, whether the ticket is confirmed or is waiting. Users can check seat availability, book tickets for a train through an e-booking system and check the train route and the stations where the train goes through have the choice to cancel their ticket. The specification during this method is that if there are many routes to an equivalent source and destination, the user gets the minimum route to the destination which helps in saving time for the passenger.

Smart Railway Reservation System:

The Indian Aadhaar Number UIDAI may also be required to serve as the central hub for the complete Smart Passenger Reservation System (SPRS). The services provided through the Passenger Reservation System (PRS) can be provided with UIDAI as the primary identity key. UIDAI is an important part of the smart reservation system. The following are concerns with gift PRS and how they can be overcome using the clever railway reservation tool.

Problem 1: In the gift PRS, the maximum number of passengers traveling in a one rate tag is six. However, the rate tag has only been obtained by one person.

Solution: The passenger must bring the Aadhaar or UIDAI numbers of various passengers with him. It is possible to verify the number one passenger OTP. After completing the authentication of one passenger, he can book tickets for other passengers within the same rate tag as himself by entering their UIDAI numbers. As soon as the reservation has been processed for payment, an SMS should be sent to all of the passengers.

Problem 2: The (Reservation Against Cancellation) RAC traveler is unconcerned about his visit because of the gift PRS.

Solution: Using a clever reservation tool, a large range of available berths is precisely allotted to a wide range of passengers, and the berth reserved for each passenger UIDAI quantity is precisely allotted to each passenger.

Problem 3: Senior citizen passengers required concession fare on their tickets.

Solution: A senior citizen is looking for a fare concession. The fare is deducted from the question stop result obtained from the UIDAI database right away. The concession must be chosen by the older citizen. When he selects "senior citizen" as the concession type, the tool checks his age and intercourse before applying the appropriate concession fare ("Male Senior Citizen" or "Female Senior Citizen"). The rate tag validation device will confirm whether or not the passenger's Aadhaar card

(senior citizenship) contains the same information as the rate tag. Other than that, allowances will be made.

Problem 4: A passenger's legal advisor has arrived at the reservation counter to purchase tickets. The passenger's legal consultant must provide the UIDAI to all passengers. He also wants to provide his very private UID (or Aadhaar Card) and submit his fingerprint, which will be stored in the railway database. In that instance, the details of the passengers' legal counsel are likewise saved inside the tool for the purpose of destiny reference on the side of the passengers.

Solution: The passenger's legal advisor is reserving a rate tag. His UID is typed into the tool in this situation. In addition, the UIDs of all passengers who may be traveling are entered into the tool. The OTP can be sent to the primary passenger in this scenario. The tool will preserve similarly for reserving, payment, and rate tag production with OTP's accurate response.

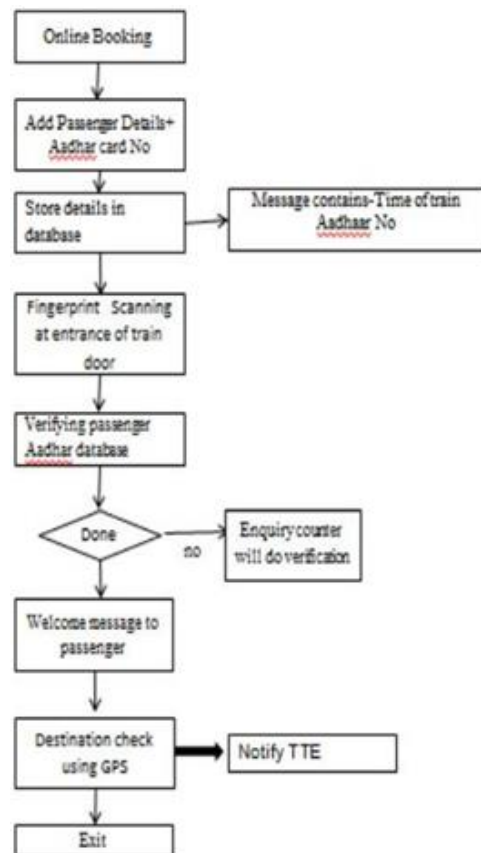


Figure: Workflow diagram for automatic ticket validation system

If the passenger price has been completed, the price tag generation device has been completed properly as analyzed within the specified price tag generation flowchart. The charge tag validation machine has scanned the passenger charge tag; if the passenger charge tag is validated, the passenger enters the train; otherwise, if all and sundry do not have a charge tag, the passenger purchases a charge tag.

The intelligent railway reservation database is kept via facts bases, one of which is a railway facts base, and several others are maintained via UIDAI, the green to apply those databases and carry out the question-issuer a number of fact bases. A query is made from the railway database computer to the UIDAI database asking if the UIDAI range and the passenger's fingerprint satisfy each other. If they all pertain to the same person, the information about a traveler is obtained from the UIDAI variety.

The proposed tool consists of four modules.

A. Aadhaar based, totally honest Ticket Reservation System

Booking the train fare tag with the use of an Android application by entering the passenger's name, train number, date of travel, delivery, and vacation destination, as well as Aadhaar number. An Aadhaar number is a very special number issued by the Indian government to prevent unknown passengers. The popup confirmation of booking will appear after you submit the charge tag.

B. Ticket Checker Application

The fee tag checker module is accessed by logging in with your train number and password. Ticket Checker can see all of the passengers on that train who have a name and an Aadhaar number. In addition, if the traveler departs from their pre-arranged vacation destination, a notification may be sent to the TTE.

C. Location Application

GPS tracking is required to verify the passenger's delivery and vacation destination. This software programmed application can be used to manually set the region. For holiday location verification, this is tied to the Ticket Checker software programmed application. The notification reached the Ticket Checker once the passenger had crossed the holiday spot.

D. Biometric Validation

Passengers can test their fingerprints at the education's entry and gain admittance following certification. With the cloud Aadhaar database, fingerprints can be searched. If it matches, you can begin your schooling. This must also be taken at the time of departure to confirm the vacation site. For ticket fraud, a biometric test is conducted. The Aadhaar database stores the fingerprints of each traveler. Passenger records can be checked using this method. Avoid anyone who travels without paying a fee. Find out who is using other people's tickets to travel. The following set of rules shows how to register a fingerprint and how to search and match it. The fingerprint is enrolled in passenger records kept in the Aadhaar database.

The realm of technology is progressing. In the case of the Railway Department, an e-ticketing system was implemented, allowing customers to browse through government documents, websites and buy their long-distance tickets for a later date printed to be shown to the checker as needed. Following it, a new m-ticketing is a technique that was introduced. After sending a text message to the web portal through the cell phone the mobile phone received an entire web page.

After that, the user can complete the entire booking procedure as if it were an e- ticketing facility.

II. FUTURE SCOPE

It is also feasible to decentralize the work of reservation from booking clerks (at railway reservation counters) to automatic ticket vending machines (ATVM) using this UID-based technology. Since unreserved tickets are already being distributed the reservation functionality may be applied in ATVMs as well. This might be simply accomplished by connecting the reserved words. Trains are accommodated in machinery and issued Smart Travel Cards with biometric verification and PIN protection. Alternatively, biometric data may be recorded at Smart Card counters when the cards are being issued. This can quickly relieve some of the pressure on the PRS counters. The Passenger verification might potentially be done during the travel. any approved ID card (e.g., PAN card, Electoral Photo ID card) When Aadhaar cards are not accessible, other options are available. reason. This would not be an issue because the reservation charts already exist. having passenger pictures (as derived from UIDAI) database) would be the safest method of physically confirming a traveling passenger.

Passengers will also be able to purchase reservation tickets at any of the railway counters. Automatic ticket vending machines and online reservations are both options. "It shall be ours," says Indian Railways' Vision 2020. Make every effort to ensure that no train passenger needs to wait more than 5 minutes. Even in the unreserved category, it takes minutes to obtain a ticket." This would be a significant step towards the promotion of the fast-paced atmosphere of purchasing airline tickets.

III. REFERENCES

- [1]. <https://www.ijrte.org/wp-content/uploads/papers/v7i4s/E1978017519.pdf>
- [2]. https://www.researchgate.net/publication/327011714_Enhanced_Railway_Reservation_System_using_Internet_of_Things

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