

Online Ticket Booking Using Secure QR Code

D. Beulah Pretty

Associate Professor, Dept. of Computer Science and Engineering, T. J. Institute of Technology, Chennai, India

Abstract: The current suburban ticket checking system comprises of many challenges, that is the tickets has to be checked manually, travelers have to wait in long queue to get their tickets. . An android mobile application is developed through which ticket for local trains can be bought online. It consists of the travel details and a QR code (Quick Response). For example: If a user buys a ticket through this app, a QR code for the ticket will be automatically generated and its ID will be stored in cloud. User have to register their details like their name mobile number and finger prints. User will reserve their ticket and they will get their QR code. Same like that train seat will also contain QR code Passenger have to scan the QR code on seat and punch their finger id also. Admin will compare those QR code and finger print with existing data. Through this admin will know about passenger's presence on the seat.

Keywords: SMS alert aadhaar card, QRcode

1. Introduction

This project deals with the development and implementation of smart phone application which is more effective and simple than current ticketing system. The "Railway Ticket Booking System using QR Code" can be bought easily anytime, anywhere and the ticket will be present in the customer's phone in the form of "ticket id". Admin will add the customers based on their aadhaar card details and finger id details which will be retrieved while registration of customer on an android application. After successfully creating an account, customer can book a ticket by specifying the source and the destination and book a ticket. The Constant QR code of booked ticket coach and seat no above which will be used at train to scan the QR code. The information for each user is stored in a SQL database for security purpose which is unavailable in the current suburban railway system. Also the ticket checker is provided with an application to search for the user's ticket with the seat number in the cloud database for checking purposes.

- **Purpose:** If an android user wants to know the location of Android device then user has to send SMS to designated device. So that he can locate device either by it making ring or gets actual location of device using GPS or network provider.
- **Scope:** This project supports only the Android OS and makes communication with the tracker through SMS messages only. The Architecture, Security and the accuracy of tracking unit itself are the scope of this project.

2. Objective of the study

In this process, we are generating an automatic alert to the administrator about the unauthorized movement. We are also developing an Android application which is used to view the image of the affected person from the Server's database.

The objective of this project is to provide location tracking functionalities to Android devices using SMS. This application locates device by making device contact details, battery level and get latitude and longitude of an Android device.

3. System analysis

A. Existing system

In the existing system, Due to very high job prospects in Mumbai city, the population which started travelling through this train increased immensely, which resulted in various issues such as never ending queues, wastage of paper, lots of resources and staff utilization .There is no any Qr code to travel on train. People are booking their ticket through mobile application.

- Long queue will be formed for ticket booking
- Ticket forgery was made
- There is no SMS alert if train was missed
- Finger print authentication is not available

B. Proposed system

If the user intends to travel from a source to destination with no intention to return on the very same day, then only half ticket costing will be taken into consideration. The users will be benefited with the provision of using the seasonal tickets as per his/her requirements depending on the number of days he/she has subscribed. In the proposed system, User have to register their details like their name mobile number and finger prints. User will reserve their ticket and they will get their QR code. Same like that train seat will also contain QR code Passenger have to scan the Qr code on seat and punch their finger print also. Admin will compare those QR code and finger print with existing data. If it any case passenger miss the train an SMS intimation will send to the passenger about arrival of train. Through this admin will know about passenger's presence on the seat. Through this TTR need not to check all over the people he had application to check the availability of seats and he can provide the seat who are in waiting list based on first in first out.

1) Advantages of proposed system

- QR code scanning is implemented.

- TTR can replace the passenger by updating database.
- OTP for verification.
- SMS alert is send to passengers
- Finger id verification for authentication

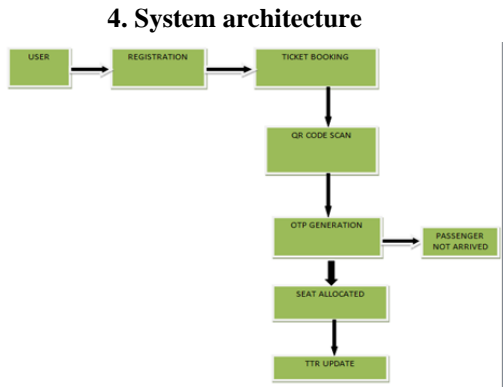


Fig. 1. System architecture

5. Modules description

A. Android application

Develop an android application. Develop an android application. Mobile Client is an Android application which created and installed in the User’s Android Mobile Phone. So that we can perform the activities. The Application First Page Consist of the User registration Process. We’ll create the User Login Page by Button and Text Field Class in the Android. While creating the Android Application, we have to design the page by dragging the tools like Button, Text field, and Radio Button. Once we designed the page we have to write the codes for each. Once we create the full mobile application, it will generated as Android Platform Kit (APK) file. This APK file will be installed in the User’s Mobile Phone an Application. User have to register their details on mobile application along with their aadhar number. Also user will have to register their finger print in bio metric for security purpose.

B. Server

The Server will monitor the entire User’s information in their database and verify them if required. Also the Server will store the entire User’s information in their database. Also the Server has to establish the connection to communicate with the Users. The Server will update the each User’s activities in its database. The Server will authenticate each user before they access the Application. So that the Server will prevent the Unauthorized User from accessing the Application.

C. Ticket booking and mobile wallet

User have to book ticket to travel on train while booking ticket, system will show how many seats is available in train. By this passenger will book their ticket and the amount for ticket will be debited from mobile wallet on your mobile phone. A mobile wallet is a way to carry your credit card or debit card information in a digital form on your mobile device. Instead of

using your physical plastic card to make purchases, you can pay with your smartphone, tablet, or smart watch. Here’s an overview of the benefits of mobile wallets and how mobile wallet services generally work.

D. QR code

QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode). A barcode is a machine-readable optical label that contains information about the item to which it is attached. A QR code uses four standardized encoding modes (numeric, alphanumeric, byte/binary, and kanji) to efficiently store data; extensions may also be used. Here we are using bar code for, to store seat number, coach number and train number. This is a permanent QR bar code which is attached in seat. While people booking ticket to travel corresponding seat QR code will be send to passenger. So while they scan the QR code, system will compare both value if it match it will allow passenger to seat.

E. Fingerprint and OTP generation

User have to give finger print before they sit. System will check correct authentication by matching with previous data. While register finger print an OTP will be generated to confirm the authentication.

F. Check availability of seats

Admin have an application to check the availability of seats. In application there are two options are there one is availability and another one is engaged. While checking availability of seats if there is any seat is available admin can provide it to another passenger.

6. Testing strategies

- A number of software testing strategies have been proposed in the literature. All provide the software developer with a template for testing and all have the following generic characteristics:
- Testing begins at the component level and works “outward” toward the integration of the entire computer-based system.
- Different testing techniques are appropriate at different points in time.

The developer of the software conducts testing and for large projects, independent test group. Unit Testing is a software testing method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures, are tested to determine whether they are fit for use. In this project, all statements are executed properly. All units of program programs are tested in different computer. And the result of the project is same in all system.

A. Integration testing

Integration testing (sometimes called integration and testing, abbreviated I&T) is the phase in software testing in which

individual software modules are combined and tested as a group. It occurs after unit testing and before validation testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

B. Future enhancement

- Get notification of a SIM card change.
- SMS/Call Filtering.
- Allowing user to specify his own attention words (Database Connectivity).
- Lock device, wipe memory to keep your private data safe.
- Control your Android remotely via a web-based interface through Android Locator.

7. Conclusion

Thus we provide a secured travel system by allocating seat for passenger through QR code and finger id. People cannot travel without paying money. By this way we are providing an easier way seat verification for TTR. Then journey source can also be changed in on journey. Then ID can be given for the ticket for the security. TTR update can be done easily

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