

IRCTC-RAILWAY TICKET GENERATION USING QR CODE IN ANDROID

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Abstract: The Railway Ticket generation using android is basically derived from computer reservation system and upgrade to android based ticket generation using QR Code. Railway Ticket generation System contains the details about train schedules and its fare tariffs, passenger reservations and ticket records. A Railway inventory contains all train details with QR Code Information. The online QR Based ticket generation system has its database centrally located which is accessed through an Application Programming Interface (API). With the invent of Railway management system the traveller and the train got the freedom to get a ticket without standing in a queue. For travelling in unreserved section, the passengers have to stand in a queue to get the ticket. In our system, the passenger can generate the unreserved ticket through their android phone itself. The passenger can get the train details by scanning the QR code of a train to get the ticket. The passenger can get a ticket by entering number of seats and payment details. It has also become a hassle free transaction for both the train and the traveler. The Railway reservation system involves three main actors the database, online operator and a database scheduler. The database scheduler updates the database, One of the core functions of the inventory management of railway reservation system is the inventory control. Inventory control steers how many seats are available for the booking in unreserved section.

Keywords: Indian Railway, QR Code Image, Un Reservation System, Queue.

I. INTRODUCTION

Indian Railway is India's third largest human transport system over which 2 core passengers travel daily all over India. The passengers accomplish their journey from their source station to destination in standing mode. The number of passengers in Indian Railway has been increasing drastically in every year, in a rate of 25 to 50 percent from its previous year. Such increase also increases the number of waiting queue passengers in station. Increasing number of waiting queue passengers, increase rushes in train which results "happy journey" slogan of Indian Railway in to "unhappy journey". In order to ease the ticket booking facility for passengers, as well as, boost paperless ticketing, railways is planning to introduces QR code system. The national transporter is also working to strengthen its Unreserved Ticketing System (UTS) for QR railway app.

Aside from UTS improvement and QR code introduction, railways' north western division is also working to increase the number of automatic ticket vending machines at stations.

Soon, passengers will be able to get QR codes of train tickets online which is expected to boost the paperless ticketing system.

It may be noted that the QR railway mobile app allows users to book unreserved tickets online. Buying unreserved tickets on all non-suburban sections across all zone railways was made available. The process of availing tickets involves downloading the application and registration by furnishing the requisite details.

After successful registration, the user is given a user-ID and password, which the person can use to log-in and book tickets and scan QR. The passenger has to be present before one hour to the source station to be able to scan a ticket through the app. A passenger is allowed to book two or more tickets at a time.

II. EXISTING SYSTEM

The existing railway ticket generation system has many shortcomings associated with it. In the existing system railway used to set train ticket generation only by the computer operator. The passenger have to stand in the queue to get the ticket in the unreserved category. The emergency traveller cannot have to time to stand in the queue to get the ticket while the train departure time. In the existing system due to non-availability of a central server the railway and the agents suffered unwanted delays in ticket generation and payments. In the existing system integration of different train on a single platform was not met. With the advent of the railway ticket generation using QR Code for the unreserved category these flaws can be overcome.

Drawbacks

- ❖ Only few bookings could be made due to manual operation.
- ❖ It takes enormous amount of time for recording transactions.

- ❖ *The existing system often encounters errors due to duplication of data values for various report requirements.*
- ❖ *Existing system involves too much of paper works.*
- ❖ *The railway computer operator can only generate the ticket.*



Fig.1 Existing System

- ❖ *The information is stored in centralized server so quick in processing.*
- ❖ *Reduce labour work.*

IV. MODULES

After careful analysis the system has been identified to have the following modules:

1. Administrator Module
2. Passenger Module
3. Train Details Module
4. Check train & QR Code Scanner
5. Book Ticket & Payment Module
6. Reports

Administrator Module

Enables the administrator to perform all administrative functions and manage inventory. The administrator can define or modify routes, fares, schedules and assign or deny access rights for qualified travel agents and other authorized users.



Fig.2 Administrative Module

III. PROPOSED SYSTEM

The new railway ticket generation system maintains the database centrally giving the clients the information required from anywhere in the world whenever required. This system requires the use of an API (Application Programming Interface) through which it extracts the data from a central database. The central database monitors all the data changes that are made at the passenger side to it and updates it automatically. Through mobile based online ticket generation with QR Code system passenger is able to purchase the ticket from their mobile phone without standing in the queue. This system reduces the work load of a railway computer operator. Also it provides the easy environment to purchase a ticket to the passenger. The passenger can search the train and scans the QR Code of a specific train through the mobile phone. Then the passenger enters the number of seats and payment details, then the passenger can get the ticket in their mobile phone itself.

Advantages

- ❖ *The main objective of the new system is to provide easy environment to purchase the ticket for unreserved category without standing in the long queue.*
- ❖ *Accurate data processing.*
- ❖ *The records are dynamically updated.*
- ❖ *Reduce passenger and computer operator time and money.*

Passenger Module

The passenger should register himself in order to precede the book ticket service. They need to input all the required particular details during the registration process. The web service will perform validation checks on passenger input and length constraints. Upon successful login, the passenger will be registered officially to the web service and he can login using his username and password.



Fig.3 Passenger Module



Fig.5 QR Code

Train Details Module

The administrator can enter the trains details and its route details. Also this contains the fare information with the QR code for each train. These details are stored in the database.

NO	TRAIN NAME	TRAIN NO	SOURCE	DESTINATION
1	Kovai Express	134564	Coimbatore	Chennai
2	Nellai Express	135677	Thiruvelli	Coimbatore
3	Palakkad	237536	palakkad	kollam

Fig.4 Train Details

Check train & QR Code Scanner

The passenger is permitted to search available trains based on the origin city, destination city, departure date. The web service will display any matching records based on the search criteria entered. The web service will notify the passenger about the availability. If the searched train are available, then the passenger scan the QR code of a train in which they want to travel.

Book Ticket & Payment Module

From the Check Train, the passenger is required to log in and the web service will prompt the passenger to confirm the Trains. The web service will then ask the passenger whether to update his profile details or not. Subsequently, the passenger will be asked to purchase and confirm the ticket for the selected Train. After Book Ticket, the web service will generate payment ID upon successful transaction is made. Once it has been confirmed, the web service will generate booking id to the passenger and require the passenger to view the payment receipt.



Fig.6 Payment Module

Reports

Necessary reports are generated when required. The report that can be generated in this module are passenger's details report, check train report, payments details report etc...

V. SYSTEM REQUIREMENTS

SOFTWARE REQUIREMENTS:

Operating System : Windows XP

Technology : Android / ASP.Net 2008

IDE : Android Studio / Visual Studio .Net 2008

Database : SQL server 2005

HARDWARE REQUIREMENTS:

Hardware - Pentium

Speed - 1.1 Ghz

RAM - 2GB

Hard Disk - 80 GB

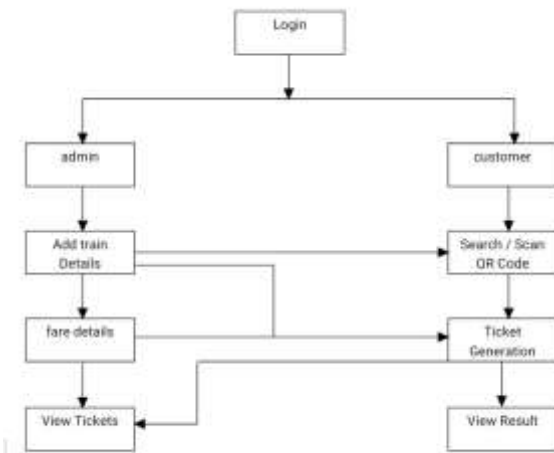
Key Board - Standard Windows Keyboard

Mouse - Three Button Mouse

or - TFT

Mobile - Android Mobile

VI. ARCHITECTURE DIAGRAM



VII. CONCLUSION

In this paper a mobile ticket application developed for Android using Dot net, SQL, and PHP on the server side which can change the way people buy their tickets in future. This kind of ticketing application can be applied to any kind of transport system. The android application is one of its kinds and finds huge application to buy sub-urban railway tickets through android mobile.

Also this application saves work in ticket counters. At the station level security user can have Hardware devices to validate the QR codes before the user enters or leaves the station, where the user can have access towards platform after being validated by the hardware device. Time trains will be available will also ease the user to allot his time accordingly to reach the station, so in this project users will be using QR railway app here to find the location of the user and nearby train station to display the train. Hence problem of issuing local train tickets has been solved with new application

VIII. REFERENCES

[1] Indian railway budget 2017 <http://www.nr.indianrailways.gov.in> (accessed on 16 April 2017)

[2] Jerry Zeya Gao, "Understanding QR Code Technology and Application in M-Commerce-Design and Implementation of A 2D Barcode Processing Solution", IEEE 31st Annual International Computer Software and Application Conference 2015.

[3] Centre for Railway Information System, Passenger Reservation System. <http://cris.org.in/CRIS/Projects/PRS>

[4] Android Developer, <http://www.developer.android.com/guide/basics/whatis>

[5] Indian railway budget 2012 <http://www.nr.indianrailways.gov.in> (accessed on 16 April 2012)

[6] Yu-Hsan Chang, Chung-Hua Chu and Ming-Syen Chen, A General Scheme for Extracting QR Code from a non-uniform background in Camera Phones and Applications, Ninth IEEE International Symposium on Multimedia 2007. [7] Jerry Zeyu Gao, "Understanding 2D-BarCode Technology and Application in M-Commerce-Design and Implementation of A 2D Barcode Processing Solution", IEEE 31st Annual International Computer Software and Application Conference 2007.

[8] Viamana Varta, India's Complete Aviation. Automobiles. Transport News Portal, WR anti-tout squad raids travel agent for ticket frauds <http://vimanavarta.com/2012/02/18/wr-anti-tout-squad-raids-travel-agentticket-frauds/#axzz1sZbbsgz6>. (accessed on 18 February 2012)

[9] Deccan Herald, Palmtops for TTEs in Rajdhani Trains <http://www.deccanherald.com/content/237972/palmtopsttes-rajdhanitrains.html>. (accessed on 28 March 2012)

[10] *The Times of India, Tech Check on Track: Now Railway TTEs to get palmtops*
http://articles.timesofindia.indiatimes.com/2012-04-02/india/31274785_1_palmtops-ttes-railway-board.
(accessed on 02 April 2012)

[11] *Center for Railway Information System, Passenger Reservation System.* <http://cris.org.in/CRIS/Projects/PRS>

[12] *Android Developer,* <http://www.developer.android.com/guide/basics/whatis-android.html>. **AUTHORS First Author – Omprakash Yadav, Senior Professor, Xavier**

IX. BIBLIOGRAPHY



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