

A Review on QR-code Based Ticket Booking System

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ABSTRACT

With the advancement of technology, new software and devices are being developed to ease man's work. Waiting for train tickets in long queues is a time consuming process. Diagnosing record of real-time data of each who are all using train tickets or metro tickets, metro ticket booking system automation would be beneficial for government to implement proper and better rates for tickets and also it would be useful for people as they don't need to wait in long ques. This system is useful for passengers to get their ticket online instead of standing in long queues to obtain their ticket. This system is helpful to reduce the paper work; time consumption and passengers get the metro ticket in simple and faster way. In this paper, we are proposing QR-code generator and reader for metro ticket system. The QR-code (Quick Response code) becomes popular outside the automotive industry due to its fast readability and greater storage capacity compared to standard UPC barcodes and we also propose facility to take metro ticket using android mobile application. This system provides a facility for ticket checker to check daily passengers ticket by just scanning the QR-code. The app is also providing live tracking so that passengers can view upcoming stations on map and time to reach at particular station. This project provides an effective solution for managing metro tickets using a database. Our system has two logins; one for passengers, and another for ticket checker.

Keywords : Metro Tickets, Android, Smart Phone Application, Ticket Checker Application, QR-code.

I. INTRODUCTION

As technology is growing fast, so we need to update ourselves to be in touch with new technology. The current process of metro ticket booking ticketing is very slow and tedious process. Customer needs to stand in long queue for issuing metro ticket at metro stations which is time consuming and this process is hectic to employees in the stations as well as passengers. Existing train ticket booking system has some drawbacks, like ticket is regenerated every time and is in paper printout format. This is a vapid process,

which require to reprint the ticket every time. And existence system does not provide any security options.

QR-code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode) first designed for the automotive industry in Japan. 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. The QR-code system became popular outside the automotive industry due to its fast readability and greater storage capacity compared to standard UPC barcodes. Applications include product tracking, item identification, time tracking, document management, and general marketing. A QR-code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera, and processed using Reed–Solomon error correction until the image can be appropriately interpreted. The required data is then extracted from patterns that are present in both horizontal and vertical components of the image.

The Purpose of proposed system is to provide use of new technology in travel sector. To develop an android application that is cost efficient. To make an efficient use of QR-code technique. Provide solution without extra hardware requirement. To make system easy to handle. This system provides effective software for maintaining metro tickets. Digital metro ticket generating system is useful for peoples to get their metro ticket online, anytime and from anywhere instead of standing in long queues to get their tickets. This system reduces paperwork, time consumption and makes the process of issuing ticket in simpler and faster way. Passengers can book ticket very fast as within two or three click he / she can book metro ticket on app, just need to recharge their account of digital ticketing. No need to print the ticket every time. This system performs functionalities like accessing basic information of user authentication. The admin or the ticket checker would be able to verify the authenticity of the passenger's ticket by scanning QR-code which is provided on the recommended device like android mobile and after scanning it will notify to user when ticket is accessed.

In our proposed system once the ticket number and time of buy is generated the details saved in the

MySQL database are sent to Google Chart API engine in order to generate the QR-code. here all the personal and ticket information are converted into QR-code and sent back to the user mobile as HTTP response and saved in the application memory.

In this Module the GPS plays the role of the checker, where when the passenger buys the ticket, the source geo points, destination geo points, ticket type, expiry time & date are stored in a mobile MySQL database. This service checks the user's current location in accordance with the destination geo points, after which the ticket type is checked and accordingly the ticket is deleted if two is single or updated if type is return.

In this module the checker will have QR-code reader and scan the QR-code with the application in order to validate QR-code and verify the journey details, especially the time and date of the ticket.

II. LITERATURE REVIEW

A QR-code [1] (it stands for “Quick Response”) is a mobile phone readable barcode that can store website URL’s, plain text, phone number, Email addresses and pretty much any other alphanumeric data. The Quick Response (QR) code first used in automotive industry has now become popular due to its large storage capacity and extremely less response time here QR-code is used to store user information in encoded form. QR-code can be used in Android, Blackberry OS, Nokia Symbian as well as Apple iOS devices. The browser supports URL redirection which allows QR-code to send metadata to existing applications on the device.

In paper [2] Vrijendra Singh, Man Mohan Swarup, Abhiram Dwivedi, Rajendra Prasad, Chanchal Sonkar , Monark Bag, proposed a system in which the Dynamic Seat Allocation (DSA) system consider the

advantage of QR-code processing along with one of the standards of wireless communication. Their approach is to make fair processing in seat reservation or allocation in Indian Railway. [2]

In paper [3] Gayatri Shinde Sadaf Sheikh, Tazeen Shaikh, Mayuri Potghan, authors proposed an android application in which ticket can carry in the form of QR-code but it is difficult to passenger to understand the buying ticket is correct or not. Because most of the people are unaware of QR-code technology.

In paper [4] Akshay Babar, Tushar Dongare introduced a model which provide various techniques for buying tickets through their mobile application through GPS facility of android mobile so that user can easily get the list of station and he can easily buy tickets, but Sometimes GPS signals are not accurate due to some obstacles to the signals.

In paper [5] L. Trebar, Finzgar describes the implementation of a system, which enables the use of phones for acquiring electronic public transport ticket. QR-codes and RFID tags are used for registering passenger at the beginning and at the end of their journeys. Use of NFC and QR-code identification in an e-ticket system for public transport.

In paper [6] authors implemented a smart card for digital bus pass system. They used QR-code on smart card to fetch the information of the user like username, source, destination, DOB, expiry date etc. In their system, user has to create his profile by visiting the website, after registering he/she will be able to sign in and make payment, for his pass / ticket. After the successful payment, QR-code will be generated and sent to his email address. Hence, e-mail address is mandatory field. Camera and Android third party libraries will be used to scan the QR-code. When QR-code is successfully scanned, we will be able to fetch all the general information of the user as

well as the validity of the card. The information fetched by scanning will be verified by the conductor who will be scanning the smartcard.

As pointed out by Sadaf Shaikh et al. [7], this QR-code can be used to transfer between mobiles and can be shown to the ticket checker for validation. QR-codes are the 2D barcode that can store more than 4,000 alphanumeric characters in a limited horizontal and vertical space. A traditional linear (1D) barcode can hold roughly 20 horizontal characters. QR-codes are also easy to use and can be easily read from any direction with a simple Smartphone application or dedicated barcode scanner.

ATVMs and CVM machines technologies are already installed in the Mumbai Suburban Railways. On October 2007 ATVM technology was introduced in the MSR in order to decrease long queues for tickets. The major drawback with existing ATVM system is the scalability issue. Only 3-4 tickets can be bought per minute through ATVM. Another issue with the system is the cost of installing the machine. Each machine costs around 17500 INR excluding the maintenance costs which vary according to the usage intensity [8]

In paper [9] the German transport association RMV (Rhein Main-Verkehrsverbund) started a pilot project, where customers could use their NFC enabled mobile phone to purchase tickets. Based on a best price-policy passenger only had to check in/out at a terminal in the bus when they entered or left, in order to receive the cheapest ticket for the route. But the major problem is NFC enabled mobile phones are high costly.

III. SYSTEM ARCHITECTURE

Architecture Overview

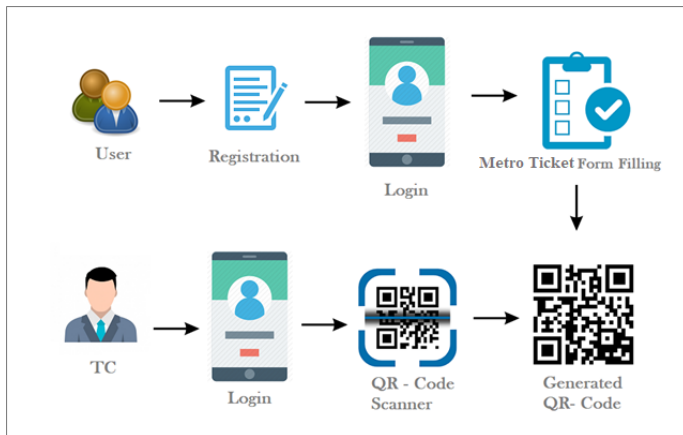


Fig 1. System Architecture

Fig 1. Shows the proposed system architecture. Initially passenger do registration and then login to system with valid credentials and then fill the ticket details. information is stored in the passenger details database. After scanning the ticket holder details, the information is verified and in response server generate QR-code which is store in passenger / user application. Once the QR-code is generated the passenger can use that QR-code for day today traveling through metro. The generated QR-code is need to show to ticket checker when passenger wants to travel, the ticket checker has QR-code scanner through which it scans the ticket details of passenger and check validity of ticket through available details which are displayed on his android application.

Objective of proposed System.

1. Reducing waiting time of passenger in que.
2. Develop an android application that is cost efficient.
3. Use of QR-code technique which provide better solution without extra hardware requirement.

4. Generating quick and easy to use android application.
5. Improving security of passenger's ticket by providing registration and login to android application

IV. CONCLUSION

The proposed system would enable the passengers to register for the metro tickets. It also enables the passengers to get the ticket within two or three clicks on their android device. This system uses the mobile android application for ticket booking and to verify the ticket. The passenger and ticket checker will have the android application. The passenger wants to sign in the basic information like name, address, banking details, source and destination etc that stored into the database and generated in the form of QR-code. The ticket checker scans the QR-code through the android application and accordingly validation will be check through it. The proposed system also used the GPS for tracking. Passengers can view the upcoming station name while traveling in metro.

V. REFERENCES

- [1] Vinay Maheshwar, Kalpesh Patil, Azim Maredia, Apeksha Waghmare "Android Application on E-Ticketing Railway System Using Qr-Code", IOSRJEN, ISSN (e): 2250-3021, ISSN (p): 2278-8719 Volume 13, PP 33-38
- [2] Man Mohan Swarup, Abhiram Dwivedi, Chanchal Sonkar, Rajendra Prasad, Monark Bag, Vrijendra Singh, —A QR-code Based Processing For Dynamic and Transparent Seat Allocation in Indian Railway, IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 3, No 1, May 2012.
- [3] Sadaf Sheikh, Gayatri Shinde, Mayuri Potghan, Tazeen Shaikh, —Urban railway ticketing

application], International Journal Of Advance Research In Computer Science And Software Engineering Vol. 4, Issue 1.

- [4] Tushar Dongare, Akshay Babar, Et Al., Android Application For Ticket Reservation With GPS As Ticket Validation International Journal Of Emerging Research In Management And Technology ISSN: 2278-9359, Vol-3, Issue-3, March 2014.
- [5] L. Finžgar and M. Trebar, "Use of NFC and QR code identification in an electronic ticket system for public transport," SoftCOM 2011, 19th International Conference on Software, Telecommunications and Computer Networks, Split, 2011, pp. 1-6.
- [6] Snehal Kalbhor, Ashwini Mangulkar, Mrs. Snehal Kulkarni" Android App for Local Railway Ticketing Using GPS Validation" Android App for Local Railway Ticketing Using GPS Validation (IJETST), pp71-74, March-2014
- [7] Sadaf Shaikh, Gayatri Shinde, Mayuri Potghan, Tazzen Shaikh, Ranjeetsingh Suryawanshi "Urban Railway Ticketing Appion", International Journal of Advanced Research in Computer Science and Software Engineering (IJARCSSE), pp. 130-132, January-2014.
- [8] Google "m suburban train ticket system" <http://www.slideshare.net/kalpesh1908/m-suburban-train-ticket-system>.
- [9] N. F. Inc, —Nfc in public transport], January 2011.

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