Abstract:
The demand of the transport system has increased due to large amount of growth in India’s population. The cashless ticket travels propose Public Transport System Facility to the passengers and providing secure and hard-cash free travel, thus eliminating the problem of loose coins and greatly tackling the problem of corruption in developing countries like India! This paper presents the design of android application system that harnesses the functionality of the existing electronic smart cards. The idea is to develop an android application that incorporates its simplicity and usability. We employ this ticket friendly solution that replaces the conventional paper ticketing by paperless-ticketing. At the entrance the passenger scans the QR code and then enters the train platform. The ticket will be in the form of a QR code containing the details of the journey. At the exit station we scan the QR code at the destination place and passenger can go out only if the valid amount is paid. Thus, this proposal will show how this system can be executed and will benefit everyone with the help of the research and survey.

I. INTRODUCTION

In order to serve millions of commuters daily, the smart card facilities available includes standing in long queues which passengers running late find inconvenient. In today’s intensively fast growing world of technology we still are standing in queue for buying tokens or smart cards. This is more irritating and time consuming at stations to stand in the queue or if we forget our cards. Today’s transportation system still uses the smart card and token system. Also, people need to stand in queues for long hours. Therefore, user needs a smart system which provides real time information of trains/metro and gives an easy way to purchase a ticket. So, we proposed a new android application which overcomes the disadvantages of the current transportation system. In the fast-paced world, technology is playing a vital role in everybody's daily routine by means of digitalization. Technology has the motive to bring products which are time and cost efficient. Implementation of the idea behind digitalization in public transport systems could prove to be of greater benefit. We need to cater to the needs to thousands of people every day who demands for a proper systematic ticketing system to efficiently manage this crowd. Indians ranked second in the world in mobile usage, android and SQLite database can help to make public transport more efficient and secure. With majority of the mobile phone users preferring android as their Operating system, this concept will satisfy the need of most of the people. Many versions of android being released every year, this app requires only a basic version which can be found in around 97% of the existing android devices. SQLite database can be used to store the information of passengers which enables retrieval and efficient processing. Thus, to provide an agile and smooth ticketing experience to the commuters as well as to overcome the limitations of the existing app, a mobile application is proposed in this paper which enables users to book railway tickets without much hassle of logging in every time the application is being used. Only once the user needs to fill in all the basic information and card details which would be required for ticket payment. The idea is to employ user friendly solution that replaces the conventional paper ticketing by paperless-ticketing. The ticket will be in the form of a QR code containing the details of the journey.

II. LITERATURE SURVEY

1. Novel Approach for Smart Indian Railways – 2017

Sujith Kumar, S. K.M. Yatheendrar Pravan, V. Sumathy, Thejeswari C.K gave us a brief knowledge on android application and helped us to choose the appropriate approach for developing QR code. This paper focused on Android application for ticket booking and ticket checking in suburban railways gives an insight of booking tickets and receiving the ticket in an encrypted form of QR code through an SMS. But this would not be possible as SMS does not facilitate the sending of images, rather data in the form of texts only can be sent through an SMS. The proposed idea overcomes this error as it generates the QR code on the application screen from which the screenshot could be taken if necessary. This screenshot can be used for validation later.

2. Smart ATVM Application

Farhana Zubair Siddiqui, Tasneem Mumtaz Ahmed Ansari, Almas Molh Iqbal Ansari gave us a brief knowledge on android application and helped us to choose the appropriate approach for developing QR code. This paper focuses on providing a smooth and convenient ticketing experience to the passengers is a challenging task. The Proof-of-Payment fare collection system is used by the Mumbai suburban railway. To purchase a ticket passenger, need to stand in a long queue, which is inconvenient for the passengers. Passengers opt for going without ticket to avoid long queues if they are running late so that they can save time. Moreover, ticket checkers are not present every time and they follow a manual pattern to analyze every ticket for validation purpose. There was a need to automate the whole system where the passengers can purchase a ticket online. This requirement leads to an online. The ticket checker requires a scanning application in his/her mobile phone to scan the QR code, so that they can validate the passenger. Both the passengers and railway authorities will get better experience by using this application.

3. M-Ticketing System using QR Codes for Mumbai Local

Sanam Kadge, Saniya Sayyed, Bhavesh Buwa, Burhanuddin Madraswala gave us a brief knowledge on android application and helped us to choose the appropriate approach for
developing QR code. This paper aims to give smooth ticketing experience to the commuters as well as to overcome the limitations of the existing app, a mobile application is proposed that provide the user with an account upon a simple registration which will be linked to the user’s mobile number. The ticket can be booked from anywhere at any time. After logging in and filling in the details, the total amount will be deducted from the user’s account where payment can be made through any free payment gateway like Paytm. Finally a ticket will be generated in the form of a QR code. If implemented, it will give a new ticketing experience to people and will also contribute to a cashless economy.

### III. PROBLEM STATEMENT

Today’s biggest challenge in current ticketing system is “QUEUE” in booking railway tickets. In today’s intensively fast growing world of technology we still are standing in queue for buying railway ticket or to buy CVM coupons or smart cards. This is more irritating and time consuming at times to stand in the queue or if we forget our cards. And we are wasting papers where in today’s needs we need to save the paper. The existing app for booking tickets for suburban trains, UTS app, has unnecessarily long and complicated registration process. It allows for booking a ticket only if one is a certain distance away from the railway track/station. This means that one cannot book a ticket after entering the platform, which is inconvenient when in urgency. Many users have expressed their frustration with the GPS abilities of the app that appears to have prevented them from purchasing tickets.

### IV. OBJECTIVES

1. To create a paperless ticketing app with cashless transactions that allows passengers to book suburban railway tickets.
2. To provide a user friendly and stable interface to cater to the needs of the railway passengers.
3. Risk of loss of cash while carrying is avoided.
4. In this app, passengers deposit money in their wallets and book single-journey ticket.
5. A digital payment indirectly reduces expenditure by reducing need for printing of currency notes and its transportation.
6. Obviate the need for passengers to wait in queues for purchasing the tickets and enhance the experience for booking unreserved tickets.

### V. ARCHITECTURE

In Suburban Railways, initially passenger have to Sign In to the app, once he has Signed In, he can Login into the App anytime. He needs to scan the QR code at the entrance and that source Place automatically will be navigated to the next page where he only needs to enter the destination place. And the fare price will be showed to the passenger. Now to book the ticket, he needs to add the money to the wallet by entering the Card details and add money to wallet. Fare Price Amount will be deducted from the wallet. If the wallet amount is low, he will be intimated to add the money to the wallet by his card Number. After Successful transaction he will get the message. And at the exit he needs to scan the Exit QR code in order to move out. If the destination Place he entered matches the destination QR code, and he has paid the correct fare price, he will be allowed to move out, else if he entering the destination Place whose fare amount from the source Place is greater than the destination what he had entered then, the remaining fare price will be deducted from the wallet .If his wallet amount is less than the remaining Fare price then, he has to add extra amount to wallet and move out. Refer (figure 1)

### VI. WORKING

#### A. Algorithm

1. **Step 1:** Start
2. **Step 2:** Registration
3. **Step 3:** Click to Scan QR code
4. **Step 4:** Scan QR code
5. **Step 5:** Enter the Destination Place
6. **Step 6:** Enter Money to wallet by entering card details and add money to wallet
7. **Step 7:** Proceed to Pay Fare Amount
8. **Step 8:** If Fare Amount <Wallet Amount go to Step 9 else go to Step 6
9. **Step 9:** Scan QR code at the Destination place
10. **Step 10:** If Destination QR matches then he can move out.
11. **Step 11:** Stop
B. Flowchart

![Flowchart for INDIAN Suburban Railways](image)

VII. CONCLUSION

As per Android is the largest stakeholder in the mobile device market with around 1.4 billion active devices running on it, we can reach most of the population over the world through it. This project aims to give an agile and smooth ticketing experience to passengers. If implemented, it will give a new ticketing experience to people by contribute to a cashless economy. It would be safe for users to carry the tickets and payment details in their phones rather than carrying cash, credit/debit cards etc. With the growing popularity of smartphones and mobile wallets, this is the right time to introduce this technology so that people also become familiar with it and adapt to it. This will improve the overall service provided to passenger.

VIII. REFERENCES


[7]. David M. Monteiro, Joel J. P. C. Rodrigues, and Jaime Llorret, “A secure NFC Application for Credit Transfer among mobile phones”, 2011


