# SMART BUS TICKETING SYSTEM

**Prof. B. A. Khivsara[1], Mr. Kakshil J. Jain[2], Mr. Nilesh M. Shinde[3], Miss. Kavita B. Pachorkar[4], Miss. Prachi A. Gandhi[5]**

[1,2,3,4,5]*DEPARTMENT OF COMPUTER ENGINEERING, SNJB's LATE SAU. K. B. JAIN COLLEGE OF ENGINEERING NEMINAGAR, CHANDWAD 423101*

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***Abstract—****Public transport is that the least expensive and has so, continuously been current with the plenty. The unfold in transport system has been increasing in daily life. The transport plays a significant role in individual's life, in manufacture it capable we have a tendency to area unit introducing associate humanoid application. The humanoid claim has the ticket system exploitation QR reader. The humanoid mobile contains a prodigious half in human life; it helps the folks to be keep connected with internet. During this project, we have a tendency to area unit proposing QR reader for bus ticketing system. The QR code (Quick Response code) becomes current outside the automotive business due to its quick readability and larger storage capability compared to normal UPC barcodes. The anticipated system affords internet application still as humanoid application for the passengers to shop for their tickets on-line. Throughout the business enterprise time, we will get the price ticket by getting into their location details and sort payment. Document alert are going to be notified to the rider. By this application, we will condense the usage of paper (Tickets) and there'll not be any downside in obtaining modification.*

***Keywords—*** *Smart bus ticket, QR code, android bus ticket, web application****;***

## I. INTRODUCTION

In fashion, many problems face by people because of ancient bus system. Thus to beat these evils planned system affords the solution. Standing of bus square measure planning to be checked by administrator and passengers can have information of the same by mechanism Application transport bus system area unit operated on their determined timetable and bus stops are also determined by the transport system. Another is conductor required to conduct fare assortment and commuters might face cash problems. If within the in the meantime in path bus gets fail then passengers keep unconscious concerning it and conductor might face problems for getting facilitate. Like these, there area unit many problems two-faced by this technique. To dumb these all we have a tendency to tend to come back make a copy with a replacement system pattern [11] one. Android application that is in a position to cut back waiting time for passengers additionally as many totally different problems. Currently this money modification draw back are solved biasing QR code. not completely error free and isn't user friendly Advantage of this system is that person can travel whereas not intermingling with anyone, fully drawback free travel and in addition human pays as per the house he/she extremely traveled.

## II. RESEARCH BACKGROUND

QR code (abbreviated from quick Response Code) is one form of barcode(or two-dimensional barcode) initial designed for the locomotive business in Japan. The technology for QR codes was developed by Densa-Wave, a Toyota subsidiary. A barcode might be a machine-readable label it contains information concerning the item to it it's connected. A QR code uses four standardized sterilization modes (numeric, alphameric, byte/binary, and kanji) to with competence store data; extensions could in addition be use

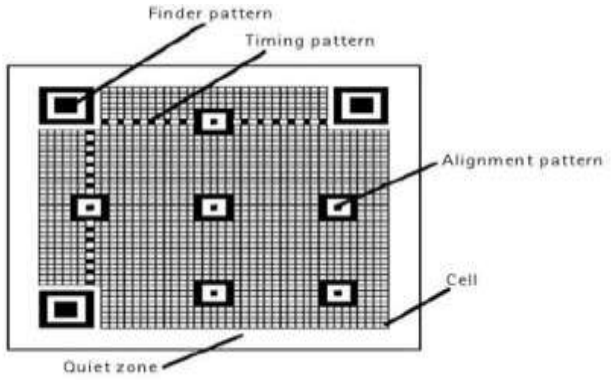



Figure: QR Code

Another technology that we have a tendency to tend to stand live pattern mechanism is associate package that runs on mobile subtracting devices like tablets and cellular phones. It originated in 2005, as a result of the chief invention being developed by a company stated as mechanism, Inc. This company was supported by Andy Rubin and moneyed manual laborer thus on advance mechanism.

**QR code payment** might be a contactless payment methodology where payment is performed by scanning a QR code from a mobile app.[1] this will be another to doing electronic funds transfer at purpose of sale using a payment terminal.[2] This avoids various the infrastructure traditionally associated with electronic payments such as payment cards, payment networks, compensation terminal and merchant accounts.

## III. LITERATURE SURVEY

**Current System:**

Conveniently getting a ticket has always been a problem with travelers facing long queues, frequent delays leading to bad customer practice, and eventual loss of revenue for the govt. Taking this into consideration Maharashtra State Road Vehicle Corporation (MSRTC) decided to require the assistance of electronic ticketing machines (ETM). Additionally to delivering swifter, simpler, safer visit passengers, this solution facilitates efficient fleet management and underestimates revenue leakage. MSRTC may be a leading passenger road transport organization in India with a fleet of over 16,000 buses and operating 90,000 scheduled bus trips daily on an middling. It's deployed over 30,000 conductors for these buses. Quite 60 lakh passengers, on a mean, use the MSRTC amenities daily. [3]

**Limitations:**

• E-payment system not present

• RFID reader not in machine

• Thumb system

• No data transfer machine to cloud

• No tracking system

**Red Bus:**

This Application is straightforward to use and therefore the operators can book ticket, manage boo Take your destination, select bus supported user ratings, view the seat layout, choose opportune seats, and book your ticket The red Bus experience doesn't end with the booking. In a series of industry leading features, red Bus offers navigation to bus boarding points, real-time tracking of buses and knowledge on rest stops.

• It's a technologically advanced bus and thus spells more comfort for passengers.

• There are a complete 350 bus machinists in India and most of them own fleet of AC buses.

• Red bus provide these interventions with technology to form their tickets.

• When a seat is booked/locked, that seat is further made unavailable within the Red bus spot also as within the portal of the agency which operate the concerned.

• There are some options like bus hired, travel package to assist the travellers

**Advantages:**

• You can choose your seat.

• You can book your bus tickets online, by phone or face to face.

• You can choose between over 15000+ bus operators

• You can choose between buses supported living points, timing & bus type.

**Limitations:**

• Local bus not available

• Not show right location

• Not show proper devour timing

## IV. PROPOSE SYSTEM DESIGN

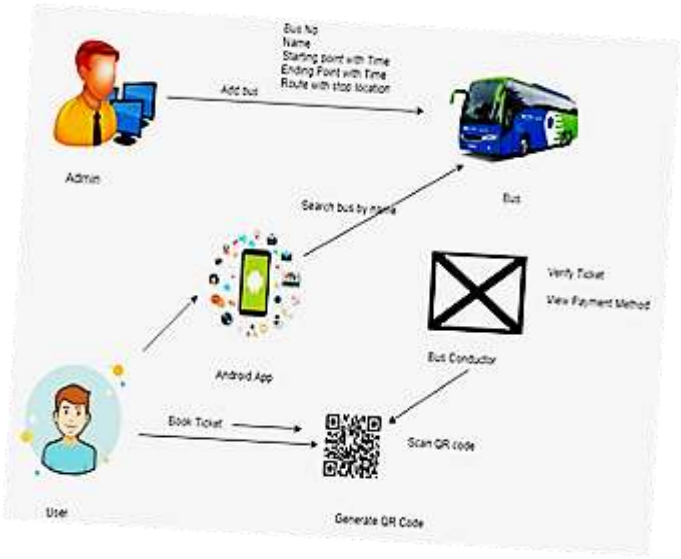



**Figure: System Architecture**

System Architecture gives us the general description about the how system is functioning System that contains both input and output and also short explanation about the operation I gives basic idea about what sort of functionality is performed. During this system we access the info from many sensors. QR code (abbreviated from Quick Response Code) is one quite barcode (or two-dimensional barcode) first designed for the automotive industry in Japan. The technology for QR codes was developed by Wave, a Toyota junior. A barcode may be a machine-readable label it contains information about the item to which it's attached. A QR code uses four standardized encoding modes (numeric, alphanumeric, byte/binary, and kanji) to efficiently store data; extensions can also be use. User are after booking ticket then QR code generated this QR code scan the conductor then conform the ticket. after one authenticate message is send to user catalogue mobile no and also give information about

location are display to next stop upcoming show location and time are to succeed in thereto stop.

**Mathematical Model**

**APPENDIX A:**

System S as a whole are often defined with the next main components.

S= {I, O, P, S, C, P, Ad, Q}

S=System

C= Conductor P=Passenger Ad=admin

Q=QR-Code

Input I = {Input1, Input2}

Where,

Input1=QR-Code

nput2=User information Procedures

P= {Pr, Cc, Qid, Amt}

Where,

Pr= Passenger Register with QR-Code

Qid= Generate QR-Code Id

Cc= Conductor verify that QR-Code on mobile

Amt= what percentage amount pay that also show

Output O = fOutput1, Output2g

Where,

{Output}=QR-Code successfully Verify

{Output2}=They reach destination without having any disturbance

{Initial State}= initially system are going to be during a state where user isn't enrolled, only admin of system.

{Final State}= QR-Code is successfully verify.

**Feasibility Study**

A key an area of the preliminary investigation that reviews anticipated costs and benefits and recommends a course of action supported operational, methodological, economic, and time factors. The aim of the study is to work out if the systems entreaty should proceed further.

**Technical Feasibility:**

The system being developed is economic. It's cost effective within the sense that it's disregarded the registered work completely. The system is additionally time active because the calculations are automated which are made at the top of the paper or as per the scholar requirement. The result obtained contains fewer errors and are highly truthful because the data is required.

**Economic feasibility:**

The technical necessity for the system is economic and it doesn't use the other additional Hardware and software.

**Behavioural Feasibility:**

The system working is sort of easy to use and learn thanks to its simple but attractive edge. User requires no special exercise for operating the system.

**Feasibility Assesment:**

A key an area of the introductory investigation that analyses anticipated costs and benefits and recommends a development of action supported operational, technical, economic, and time factors. The aim of the study is to figure out if the systems request should proceed further.

**Algorithm:**

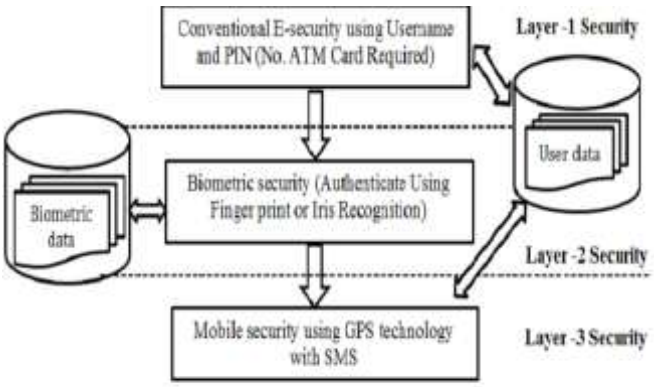
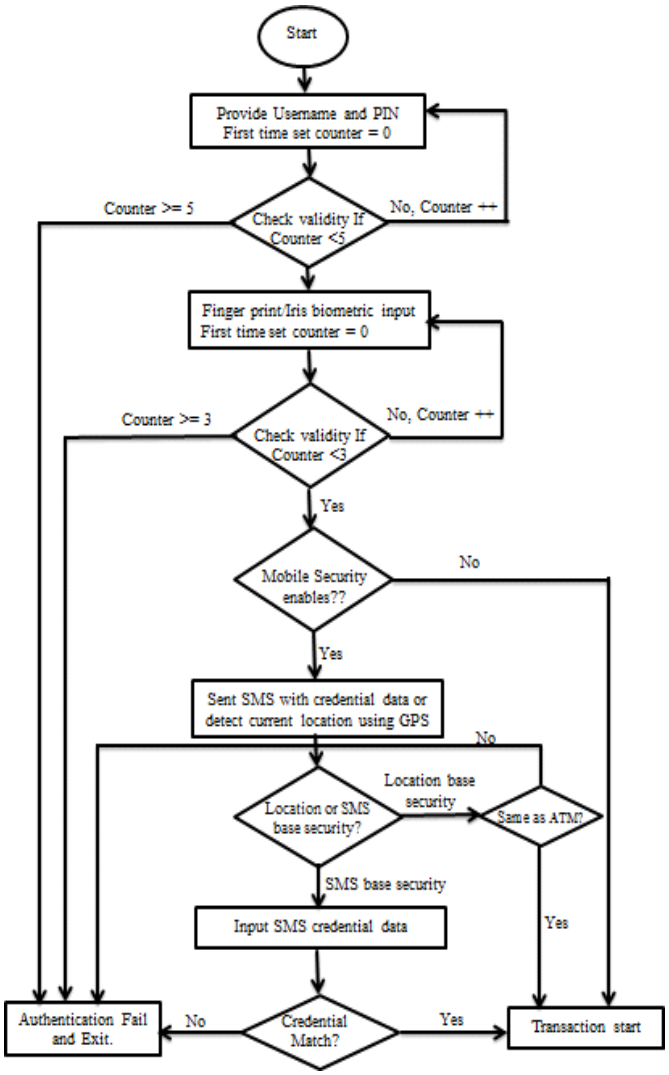



**Figure. Three Layer Security System Flow**

**Flowchart:**




**ADVANTAGES:**

• THE PASSENGER CAN GO CASHLESS and therefore the AMOUNT IS AUTOMATICALLY DEDUCTED with none INPUTS GIVEN TO THE APP.

• THE PASSENGER CAN VIEW ALL HIS PREVIOUS TRAVELS.

• THE ADMIN HAS ALL the tiny print REGARDING THE BUS and thus the PASSENGER TRAVELLING.

• EASY to trace AND MONITOR EVERYTHING

• IF THE PASSENGERS ACCOUNT HAS NO FUND THE SYSTEM GIVES A ALERT.

Limitation:

• Wi-Fi / Internet connection should be always Available.

• Physical part should be properly handled.

• Power supply is important.

**Application:**

• Use by MSRTC conductor and passenger.

• This technique is employed also privately travels, buses.

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**CONCLUSION**

To overcome the drawbacks of manual ticketing system we are using QR-Code for security purpose of passengers information within the propose system. With this testing, there'll be an increased usage of conveyance , as everything are often done independently .There is no need of any dependency on the conductor while stepping into the bus for collecting the ticket, all we'd wish to attempt to is get digitalize by using the scanner available within the mobile device and scan the QR code. This is able to ultimately make people use the transport fairly often.

**REFERENCES**

1. "GSM and GPS Based Vehicle Location and Tracking System", BaburaoKodavati, V. K. Raju, S. SrinivasaRao, A.V. Prabu, T. AppaRao, Dr. Y. V. Narayana, International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622 www.ijera.com Vol. 1, Issue 3, pp.616-625 2000.

2. "A User-Centered Design Approach to Self-Service Ticket ending Machines". KARIN SIEBENHANDL, GUNTHERSCHREDER, MICHAEL SMUC, EVA MAYR ANDMANUEL NAGL. IEEE TRANSACTION OF PROFESSIONAL COMMUNICATION, VOL. 56, NO. 2, JUNE 2013.

3. "Vehicle Tracking and Locking System Based on GSM and GPS", R. Ramani, S. Valarmathy, Dr. N. SuthanthiraVanitha, S. Selvaraju, M. Thiruppathi, R. Thangam, MECS I.J. Intelligent Systems and Applications, 2013, 09.

4. "Taking an Electronic Ticketing System to the Cloud: Design and Discussion". Filipe Araujo, Marilia Curado, Pedro Furtado, Raul Barbosa CISUC, Dept. of Informatics Engineering, University of Coimbra, Portugal filipius@uc.pt, marilia, pnf, rbarbosa@dei.uc.pt 2013.

5. "Bus Tracking & Ticketing using USSD Real -time application of USSD Protocol in Traffic Monitoring", Siddhartha Sarma, Journal of Emerging Technologies and Innovative Research (JETIR) www.jetir.org , Dec 2014 (Volume 1 Issue 7).
6. "Urban public transport service co-creation: leveraging passenger's knowledge to enhance travel experience. Antonio" A. Nunesa, Teresa Galvaoa, Joao Falcao e Cunhaa 2015
7. Tao Jing, XingWei, WeiCheng, LiranMa, YanHuo, Xiuzhen Cheng, "An 39. Efficient scheme for tag information updates in RFID system on roads", IEEE, issue 9, vol.10, 2015, pp. 147- 193.

8. Thimmaraja Yadava. G, Prem Narayankar, Beeresh H.V, "An Approach for RFID ticketing used for personal navigator for a public transport systems", International Journal of Technical Research and Applications, issue 3, vol.2, 2014, pp.109-112.

9. Miss. Mohini S. Shirsath ,Pooja M. Chinchole,Vaishnavi R. Mahajan, Varsha G. Mogal "A Review on Smart Bus Ticketing System using QR-Code " Volume: 05 Issue: 03 | Mar-2018