



# International Journal of Innovative Research in Computer and Communication Engineering

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## Generation of City Bus Pass with Implementation of QR-Code Technology

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**ABSTRACT:** This project will provide a successful solution for managing bus pass information using a database. Our system will be having three login, for user, admin and conductor. This system will provide web application for people to get their Bus passes online. This system will be useful for users to get their bus pass online instead of standing in long queues to obtain their bus passes. This system will help to reduce the paper work; time consumption and user will get the bus pass in simple and faster way. User will refill their account and extend the validity of card when the pass is going to expire. The rapidly ageing population causes long waiting times for taking bus pass. Diagnosing record of real-time data of each who will be using bus passes. Bus pass automation will be beneficial for Government to implement proper and better rates for passes and also it would be useful for people who forget to renew their bus passes. Also taking Bus Pass in an MTC bus is a tedious process now-a-days. Giving exact change for Pass to a large crowd is also a tedious process for conductors in the buses. In this paper, we will propose a facility to take bus passes using android mobile application.

**KEYWORDS:** Authentication, Client and Server, Online Payment, Privacy, QR Code

### I. INTRODUCTION

Buses are the foremost widely used public transportation in many cities nowadays. To improve the standard of Bus Company, a period system that will monitor and predict the rider Flow of the running buses is useful. Here, rider Flow denotes the number of on-board passengers of a bus that varies over time and house. The current system of taking pass in the buses and applying or renewing for bus pass is a tedious process. It takes long time for taking for bus passes it involves a long queue in depot and it is a time consuming process. This system will provide a connection between government server, where data is managed and android application which provides a GUI for the user. This helps in avoiding bus delay due to queues in bus stands and helps in reminding user about bus pass expiry. In addition, providing a user bus Pass facility will help to determine how efficiently users use their bus passes and helps in planning new rates for bus.

This system will provide a facility for taking bus Pass on the go, by just swilling the QR code user will book a bus pass and pay online[1]. This system also provides a facility to remind when the bus pass is about to expire. The app is also used to take print out of the pass, so that it will be shown to the conductors who are unfamiliar with android phones. The system will also provide digital wallet where the user will load money as a whole and use it in each buses the user travels.

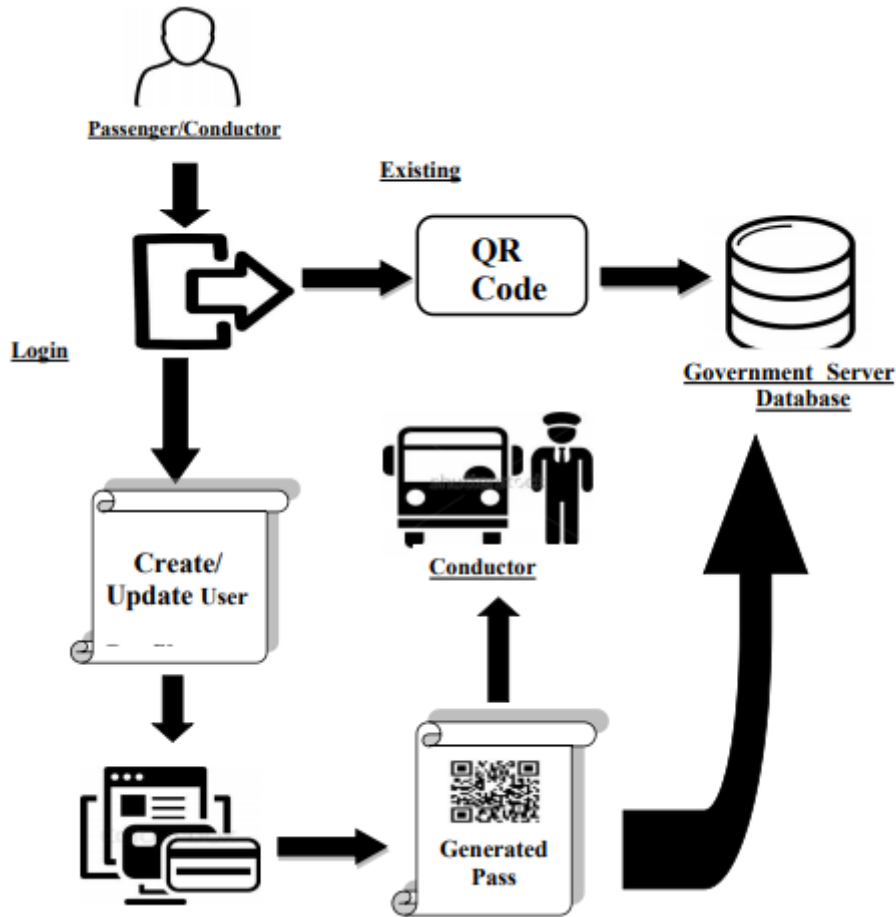
This system provides security option for user. The conductor in bus would be able to verify the pass by swilling the QR code provided on the pass with a recommended device. The notification generated by the system would be send to the user in form of message such as when, where and what time the card was used. This system also provides online payment facility

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**Fig.1. System Architecture**

## II. RELATED WORK

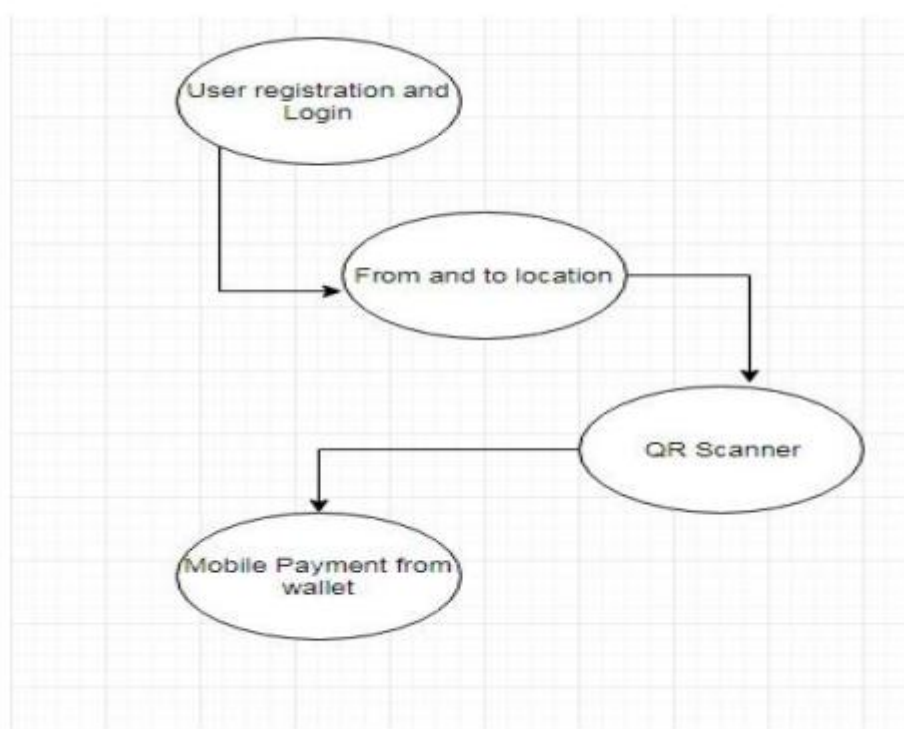
This System will develop in a smart QR-code swilling in Available Bus Pass System. Students have to stand in the row for a long time. The student will waste time here. Then, were many problems will be created for a student. Firstly, student will be late to the school/college. The standing student may face dizzy problems here. This system developed for student firstly will be registering information and login.

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**Fig 2. Flow of Project**

The information will be stored in a government database server. The student will have to fill another full set of information. After installation of the application on the android phone, register yourself for the further generation of bus pass. In the initial level, upload all the required documents, for example- your bonafide certificate and college id for instance. After completing this necessary process, the documents will be verified by admin module. If this process is successful, the user may navigate through various options in this includes selection of categories for a passenger to travel. For instance, there will be various sub-options involved like 'selection of type of passenger for travelling like school students, Employees, Adults, Senior Citizens, Handicap people for instance. As per the user's selection type, options will be generated further i.e. Static or Dynamic. In the Static mode of selection, the QR- code generated in the future will be fixed ( it won't differ or be capricious with time period) whereas in the Dynamic mode of selection, QR- code is generated[3].

Also, the user is able to select the duration of pass; whether it is 1 month, 2 months or one year.[1] User needs to carry out payment process through various payment gates. In this, we will be providing various gates for payment transfer such as Debit, Credit, and Net- Banking.

It recapitulates by generating desired users QR-Code after successful transaction of money .now, the user will be able to use his pass over the time duration for which he has applied. [8]The procedure will be very simple for further use i.e. he just has to swill the QR- code by the conductor generated prior.



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## III. PROPOSED ALGORITHM

### A. Description of the Proposed Algorithm:

1. **Module name** : User
2. **Module Purpose:** Aacquire the facility for accepting electronic bus pass system.
3. **Inputs and outputs for module**
  - a) **Inputs** : Accepting personal details for the registration of bus pass like name, address, addhar number,phone no,DOB,User-name, password.
  - b) **Output** : At each travelling route a user will be getting a new QR-Code to represent as his electronic pass.
4. **File used by modulus**
  - a) Registration
  - b) Renewal
  - c) Generated QR code form
5. **Algorithm :**
  1. Start
  2. Register for authorisezd passenger/user if not.
  3. Verify the documents by admin
  4. Complete the payment process
  5. Accept the generated QR code
  6. Scan QR code by the conductor to evaluate the bus pass
  7. After expiry of due date he/she will renew the bus pass
  8. Stop

### A. Description of the Proposed Algorithm:

1. **Module name : Conductor**
2. **Module Purpose :**
  - a) To scan the generated QR code of each passenger travelling in the busroute
  - b) To provide the information to admin about the passengers travelling through specific route.
  - c)
3. **Inputs and outputs for module :**
  - a) Inputs-Selects the source to destination route.
  - b) Outputs- Generated QR code of each passenger/user stored database.



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## 4. File used by modulus :

- a) Select the bus route
- b) QR code Scanner form

## 5. Algorithm :

1. Start
2. Select the transport route where the traveller wants to go.
3. Analyse the QR code(scan) the user will provide.
4. The admin shall verify all the passes.
5. Punching of verified passes will be done. The other non- punched passes will be rejected.
6. End

### A. Design Considerations: Admin Module

**1. Module name** : **Admin**

**2. Module Purpose** : Authenticate the status of conductor, user and new users.

### 3. Inputs and outputs for module :

**a) Inputs** : Gets the document from different new users.

**b) Outputs** :  
i) Sign in the account.  
ii) Provide the authorized permission to users & conductor.

### 4. File used by modulus :

Authentication page and granting permission form.

### 5. Algorithm

1. Start
2. Admin shall verify documents of users enrolled.
3. Permission will be given to users.
4. Helpdesk shall be available for all the user.
5. Stop

## IV. PSEUDO CODE

### 1. USER

Step 1: Upload all the data

Step 2: Generate all the ways

Step 4 : Submit the data and Upload the document for checking.

Step 5 : After the User is checked and verified, select the Transport Route and Pay the remaining amount  
if (New User!= Registration )

Go to step 1

else

Select all the routes which have active nodes



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end

Step 6: Dynamic QR-Code will be updated

Step 7: Scan the QR-Code from Conductor side

If(QR-Code(1) == Data Base QR- Code(1))

User is Verified

Else

Re-New the QR-Code

Step 8: Re-New the QR-Code after Pass is done with the limits of expiry.

Step 9: Repeat step 3.

Step10: End.

## 2. Conductor :

Step 1: Login to Conductor Page

Step 2: Generate all the Possible Routes

Step 3 : Scan the QR-Code of Passengers

Step 4 : Submit the information and Upload the document for Authentication

Step 5 : End.

## 3. Admin :

Step 1: Login to Admin Page

Step 2: Generate all the Possible Routes

Step 4 : Verify all the Document's Uploaded by New-User

Step 5 : Maintain the Passengers Verified History

Step 6: Notify passengers for Renewal of Pass.

Step7: End.

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## V. SIMULATION RESULTS



## VI. CONCLUSION AND FUTURE WORK

In day to day based project which will be helpful for user who faces daily system of bus pass booking and re-new ticket. In our system, we will be providing smart card using QR code, so the information related to user is stored in QR code. If user wants to add some new additions required then that will be easily added. Useful for user who are facing problem in current system of bus ticket booking and renewal. If user wants to add some new requirements then that will be easily added. With this kind of system, passengers who are likely to travel in town using city buses will get a technology from this system for gaining as well as maintaining the bus passes management on an online basis. The conductor would directly detect from the QR- swilling, the code i.e. the QR- code generated on an android phone. Hence, the manual procedure is reduced .Hence, Time is consumed, Efficiency is maintained, and Smart work is done.

### Future Enhancements

1. Tracking System
2. Payment Gateway
3. Payment by Online Wallets(Paytm,Mobiqwik,freecharge,etc.)



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4. Information about the conductor when the bus is inspected.
5. Photo of user and conductor will be displayed on the page of showing QR code.
6. Promo codes(Like Uber eats,Swiggy for travelling)
7. Polishing of UI for more impassiveness.

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