# ✚ IJESRT

## INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY

## DIGITAL BUS PASS FOR LOCAL BUSES

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## ABSTRACT

This project aims at providing an effective solution for maintaining Bus pass information. The system has two login, one for user and the other for admin. Online bus pass Generation system is a web as well as android application for people to get Bus passes online. Online bus pass generation system would be useful for all peoples to get bus pass online instead of standing in long queues to obtain their passes. Online bus pass generation system is helpful because it reduces the paper work, takes less time and makes the process of issuing bus pass in simple and faster way. User can refill their account and extend the validity of pass every time when the pass expires. Our system is intended to perform functionality like accessing basic information for authentication and provide Bus pass for the peoples without placing them in long queues. These systems provide security option for women and provide tracking of smart card if in case smart card is lost. The official in the bus would be able to verify the authenticity of the pass by scanning the QR code provided on the pass with a recommended device.

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

## INTRODUCTION

This is era as technology is growing fast, so we need to update ourselves to be in touch with new technology. The current process of ticketing is very slow and vapid (tedious) process. For issuing bus pass customer needs to stand in long queue in Depot which is time consuming and this process is hectic to employees which are in the Depot. The digital bus pass issue system is in existence, but has same drawbacks. In existence system the pass is regenerated every time. This is a tedious process, which require to p/p reprint pass every time. And in existence system does not provide any security option.

Digital bus pass system provides effective software for maintain bus pass. Digital bus pass generating system would be useful for p/p to get their bus pass online instead of standing in long queues for issues their pass. This system is helpful as it reduces paper work, time consumption and makes the process of issuing pass in simpler and faster way. User can use generated pass for long time, just need to recharge their accounts and extend the validity every time when pass expires. No needs to print pass every time after pass recharge. This system is intended to perform functions like accessing basic information of authentication. This system provides security option for women by notifying their guardian when pass is scanned. This system provides tracking option too, in case if card is lose or miss placed. The admin and the conductor of the bus would be able to verify the authenticity of the bus by scanning QR code which is provided on with the recommended device like android mobile phone and after scanning it will notify to user when pass is accessed.
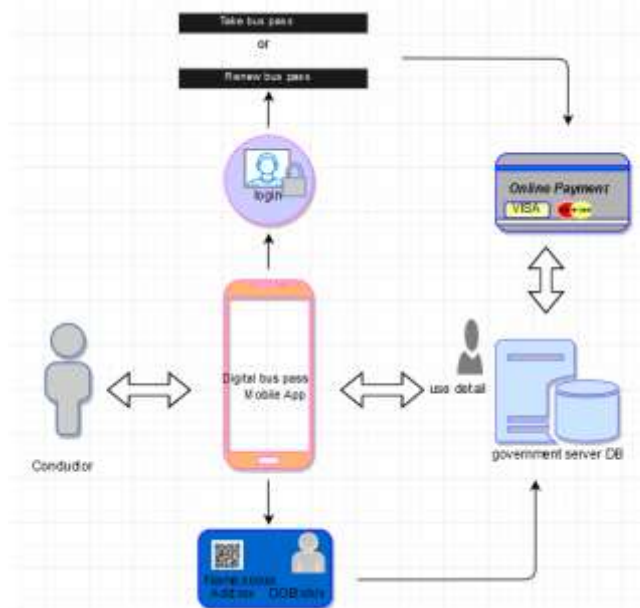
**ARCHITECTURE DIAGRAM**:



*Fig.1. System Architecture*

A. **DBPS Structure**: In this system user first visit to the site or application, then the user get registered on the application by entering mobile no. Or email and password. This will register user on the application then user logins in to the application. Then two options will be displayed on screen first apply for new pass or login. After selecting login option first form will be displayed on the screen and user has to fill all the required information in that form and click on submit button. Then payment options like Credit card or Debit card will be displayed. As soon as payment is completed, user is provided with the soft copy of pass containing a QR code in which information is field by user in the form which is encrypted in it. Soft copy of bus pass is printed with QR code Basic information like ID, Name of the user, Birth date and Photograph. He or she can take a printout and show to the conductor at the time of journey. Bus conductor checks validity of pass and identification of user. In DBPS system display notification when the pass is near about to expiry date so that user can renew it as fast as possible. DBPS system reduces human mistakes and time delay.

B. **Renew Bus pass**: Most of the time user forgot the expiry date of their Bus pass and date in to the bus with the expired bus pass and it will results in to inconvenience of user. But this system provides an effective solution on this problem means when pass is about to expire before two or three days expiry date, a notification appears on the users mobile screen. Because of the reminder (Notification) user may renew the pass for renewing pass user login on to their phone account with the help of user name and password. In that user has to choose renew option and the application directs the user to payment screen when user pay the payable amount using Credit or Debit card. This process takes few seconds and application connects to the government server and updates the renewal data.

C. **Security and tracking**: Now a day's women safety is big issue. Most women in urban India or no strangers to the worried 'Text me when you reach, Ok?' from family member especially if they are travelling back home late at night. This system provides safety options for women means when the pass of any women is scanned the message will goes to her guardian. The message contains journey details and time. This will notify to the guardian that their daughter or wife is safe and women need not to send reach message to their guardian. In case of card is loss or misplace then we can track the card.

D. **Data analysis**: All the data is stored in government server. All the data like customer data, payment related data and admin side data is stored in the government server database. Government server database is a centralized data base. All the admin or conductors report to the centralized database.

## RELATED WORK

Before implementation of this application the manual system is exist. In that we first go to bus depot and verify all the documentation and all information. In existing system we have to carry our id proof. When our pass is expired and we want to renew that pass then we have to stand in long queue and always regenerate pass. This system is already done in Karnataka and Andhra Pradesh state but there are some drawbacks. Like in Andhra Pradesh they created pass using HTML, but the pass not generated and some internet problems done.

## INFORMATION ABOUT QR-code

### QR code:

QR code stands for Quick Response code. The QR code consists of a white surface having black and white squares on it which are arranged in square grid. QR code can store phone numbers, URLs, plain text, email address and many either alphanumeric data.

QR code can be digitally scanned. The small black and white squares are read by any image sensor and then processed by the system processor.

OR code is of two types:

- o **Dynamic QR code**
- o **Static QR code**.

**Static QR code**: The destination URL is placed directly into the QR code. Static QR code cannot be modified.

**Dynamic QR code**: A small URL is placed into QR code which then redirects the user to the intended destination URL.

Dynamic QR code can be changed after the QR code has been created.

### Features:

- o Greater data storage capacity.
- o Support for multiple data.
- o Dirt and damage resistant.
- o Readable from any direction in 360 degrees.
- o Fast and reliable scanning for camera based devices.
- o QR codes have high capacity of encoding data.

QR codes are widely used now-a-days.

QR code is better than barcode in following ways:

- o The design has much more flexibility.
- o QR code is capable of carrying more information than a barcode.
- o A QR code can be read from any direction.
- o Bar-code contains information only in horizontal direction whereas QR code contains information in horizontal as well as vertical direction. Barcodes are One Dimensional and QR codes are Two Dimensional.
- o Barcode are capable of holding up to 20 characters while QR codes can hold up to 7100 characters of data.
- o Even though the QR code may be damaged, information can be taken out of it.

*Fig.2. QR code*

We are implementing a smart card for digital bus pass system. We are going to use QR code in our card to fetch the information of the user like username, source, destination, DOB, expiry date etc. In our 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. 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 smart card.

## PROPOSED SYSTEM

The proposed system is invented to overcome the drawback of the currently existing manual system. This system is web based application and android based application for user to get bus pass online. In this system we will generate digital and smart bus pass.

Smart bus pass consist of:

- o   Name of user
- o   Address of user
- o   DOB  of user
- o   Photo of user
- o   Unique QR-code that contain all the basic information about the user

We will provide protection to our system by giving the unique id and password to user. Therefore only authorized user can access to the system.

In this system all information about bus pass are maintained using database. The database we are using is a SQL (**Structured Query Language**) Database. SQL is a standard computer language for relational database *management* and data manipulation. In database it will hold all of the information entered by the user at the time of fill online bus passes this information will be stored in the tables.

These databases include:

- o   Pass validity detail
- o   Passenger information
- o   Bus information
- o   Payment detail

This all can be modified by end user.

The pass validity database will include the validity of digital bus pass. The database will contain all the information about the passenger such as first name, last name, id number, gender and phone number. Payment detail database will include all the information about payment.

This system is for admin, conductor and user

1) **User:**
Using this system User can
- o Fill bus pass online using web application and android application
- o Register for the pass, by submitting the basic details online initially
- o login to the system by entering login id & password that is providing at the time of registration
- o Submit the required documents online
- o Extend the validity every time when the pass expired
- o Issue smart cards and recharge cards
- o Change their password

2) **Admin:**
Using this system admin can
- o View all users details and balance system through its login
- o Generates reports and manage the whole system.
- o Manage profile of user
- o Change or modify user right
- o Manage the different pass schemes,
- o Verification of online registration passes
- o he/she can check the history of pass of any user for verification

3) **Conductor:**
Using this system conductor can:
- o Check the validity of smart bus card by scanning QR-code that contain all the information about passenger using android phone camera
- o Check the information about the user

## FUTURE SCOPE
In the bus pass system we digitalized all the system. In our system there is no need to conductor so we make the bus system conductor less. Also we provide smart card for all the bus passengers. We provide paper less bus tickets.

## CONCLUSION
The Online bus pass is helpful for those who face several problems. This system is provides efficient solution for maintaining all the information related bus pass using a database. It is useful for the public who are facing the problems likes stand in queue and register and renew the pass. By using this system user can renew his/her pass from anytime to anywhere.

## ACKNOWLEDGEMENTS

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