

# Online Bus Pass System

**Akshta Gurunath Handral<sup>1</sup>, Tanvi Santosh Pingale<sup>2</sup>, Gitanjali Balu Sutar<sup>3</sup>**

**Harshada Babu Awalu<sup>4</sup>, Sujata Mahadev Sanap<sup>5</sup>**

Students, Department of Computer Engineering<sup>1-4</sup>

Guide, Department of Computer Engineering<sup>5</sup>

Rasiklal M. Dhariwal Institute of Technology, Pimpri-Chinchwad, Maharashtra

**Abstract:** *The project entitled “Online Bus Pass System” is developed using Active Server Page. Bus E-pass System is useful for passengers who are facing problems with the current manual work of bus pass system. His/her renewal or registration can be done through payment gateway. In the manual system the user has to go on particular date and time if they fail then the renewal cannot be done. This online bus pass system application will help candidates to save their time and renewal bus pass without standing in a line for hours near counters. Initially uses need to register with the application by submitting their details through online. The administrator will verify the candidate details and if they are satisfied they will approve bus E-pass. The candidate can login with their username and password and renewal is performed. The renewal process is carried by paying the money using the payment gateway. The candidate can give their valuable feedback for further enhancement of this project*

**Keywords:** digital pass generation, online renewal, QR code validation, secure payment gateway, and Aadhaar/ID verification

## I. INTRODUCTION

Customer can buy the bus pass using our Bus e-Pass System application, this solves the issue of bus pass being misplaced or stolen. In addition, the system lets the customers check the availability of the bus pass before they buy bus pass. Furthermore, customers no need to pay cash to buy bus pass because they can pay the bus pass price by using Credit Card (e.g. Master Card, Visa Card) OR using Netbanking , Online payment. Hence, there is a need of reformation of the system with more advantages and flexibility. The Bus e-Pass System eliminate most of the limitations of the existing system. Bus e-Pass system to put it simply, means system can provides pass identification using QR-code, Pass renewal, cancellation, updating, Student discount etc.

## II. LITERATURE SURVAY

With all the technological advancements we humans reached in our modern world, there are still some obstacles that avoid us from improving, a major one is providing everybody the chance to study and get educated. Our project mainly aims to overcome the latter obstacle by facilitating transportation for students in order to reach their educational institutions and especially universities and colleges. [1]

Public transport in the urban areas in the Philippines, takes several trips everyday with Philippines being the second populated country in the South East Asia. Buses and jeeps accounts for these trips, which people utilizes for their work and living. With greater demand to use public transportation, fare collection payment could be very hassle for both driver and passengers. [2]

Synchronous tracking of the bus allow the youth to engage more in their routine task more time than waiting for a bus running back of its schedule with the help of the notification and also ensuring the safekeeping of every student. Nowadays answering to need of the hour, many educational institutions started pressing more towards the efficient tracking system of their vehicles ensuring safety of their pupil. The successful tracking of the bus is attained by acquiring the geographic co-ordinates with the aid of GPS module and pass the data to a remote server using a Wi-Fi



module. The uploaded data will then be made available to the client whomever it may concern, through a mobile app that fetches the information and plots the whereabouts of the vehicle. [3]

### **Problem Statement**

Develop a web application that enables customer/passenger to purchase bus Ticket using mobile app without waiting in line. Efficient public transportation systems, including bus services, are essential for reducing traffic congestion and providing accessible travel options. However, existing bus ticket booking processes are often cumbersome, leading to long wait times, operational inefficiencies, and customer dissatisfaction.

### **Existing System**

Right now, getting a bus pass is a hassle. You have to go down to the transport office or bus depot yourself just to apply or renew. There's no way around it—you fill out paper forms, bring your ID, hand over a photo, and pile on whatever other documents they want. The whole thing eats up your time, especially if you're a student or someone who rides the bus every day. Then there's the staff, who check everything by hand .Because the current system is completely manual, many problems keep happening. Documents often get misplaced, mistakes are common, and the whole process takes too much time. People have to stand in long queues, and sometimes they need to visit the office more than once just to check whether their pass is ready or to collect it.

### **Limitations**

Although the Online Bus Pass System has many advantages, it also comes with a few challenges that we should consider. Most importantly, the entire system depends on a stable internet connection. From registration to application and renewal, everything is done online. If the internet connection is slow or unstable, the whole process can become frustrating.

Not everyone is comfortable using technology. Elderly people or those who are not familiar with computers and smartphones may find it difficult to register or complete the application process on their own. This can make the system less accessible for some users.

Another major concern is server reliability. Since the system works entirely online, it depends on the server functioning properly. If the server crashes or experiences technical issues, users may have to wait until the problem is fixed, which can be very inconvenient.

### **Modules:**

The system breaks down into a few main parts, each handling a specific job. This setup keeps things organized, less messy, and way easier to keep running or update if something changes.

### **Modules of the Online Bus Pass System:**

1. User Module
2. Admin Module
3. Bus Pass Management Module
4. Payment Module
5. Route Management Module
6. Authentication Module
7. Notification Module

## **III. PROPOSED SYSTEM**

Online bus pass system is use to register and renewal bus pass without standing in any queue. In our online bus pass system Application provides the facility to the user to get monthly, half yearly and yearly bus passes through online.



Online bus pass system sends the notification to the user for renewal of bus pass. It is time reducing system it helps the users to get quickly bus pass. This proposed system will make sure that information about the user will be well organised, safe and correctly kept and is handled in a database. Renewal of user's bus pass is also done via online with the help of user name and password which is submitted by the user after registration. If in case the passenger is not fascinated to use the facilities of this bus pass system then he/she can cancel their booked passes. As this system is online the registration and the confirmation of the passes is secured and the confidential details of the user is also safe in the database. When the user's book pass then his pass is confirmed only when the user has did the payment and this payment is done via online transaction. With the help of this online bus pass system, the admin can get all the required details which are mandatory in order to generate the bus pass. The user have to submit the correct detail for the verification of an authorised person

### **Working of the System**

You sign up by giving your details.

Log in with your username and password, then fill out the bus pass application.

Pick your route, how long you want the pass, and the type of pass.

Pay online. - Your application goes to the admin for a quick check.

The admin approves or rejects your application.

Once approved, you get a digital bus pass with a unique ID.

You can view or download your pass anytime.

The system helps you renew and track your pass status.

You get notifications about your application and when your pass is about to expire.

### **System Architecture**

At present, the public transport system is still using a traditional fare collection method, which creates many difficulties for both passengers and staff. This outdated system often results in long queues and delays in collecting fares. It also makes it hard to maintain accurate and useful records.

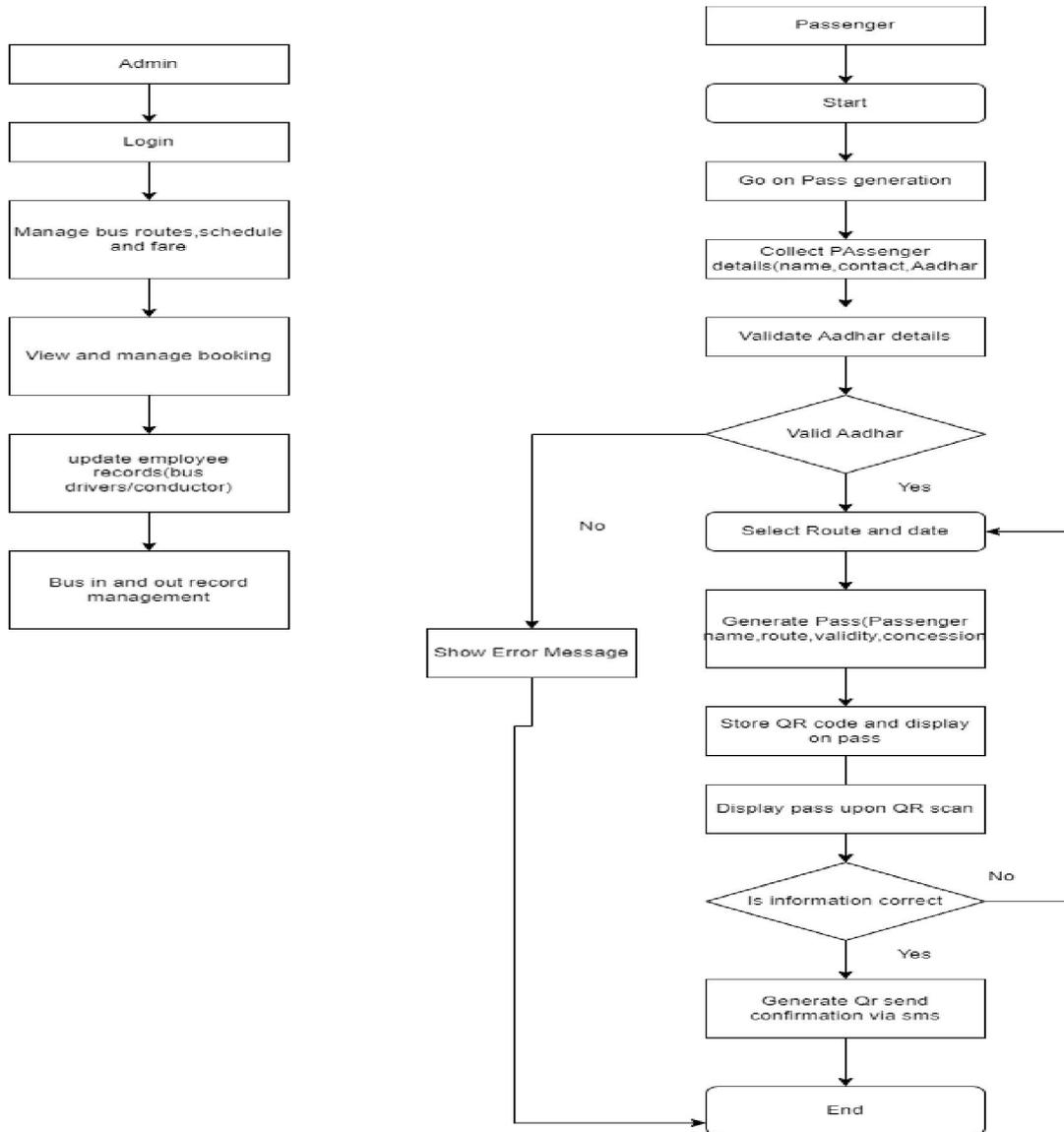
The architecture consists of three main layers:

**Presentation Layer:** Handles user interaction.

**Business Logic Layer:** Manages validation, processing, and fare calculations.

**Data Layer:** Stores and manages data within a centralized database.

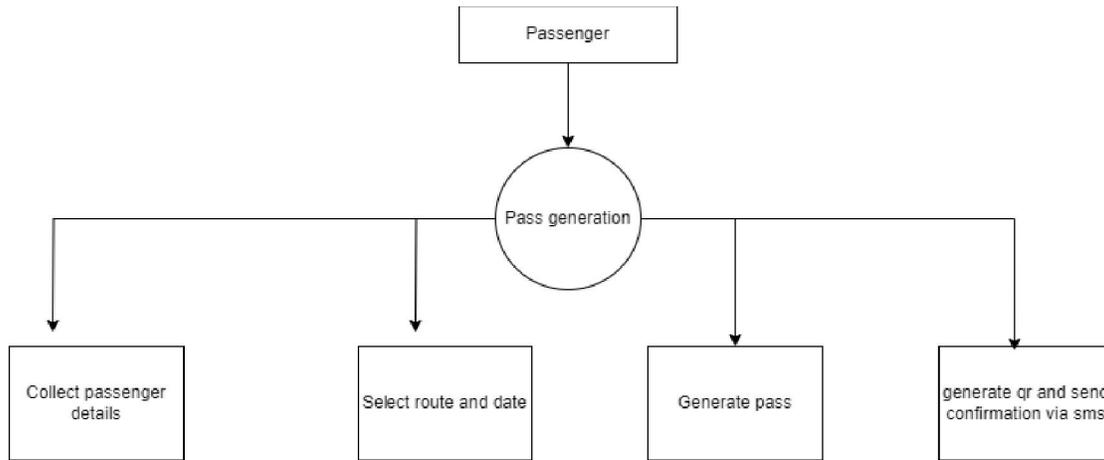




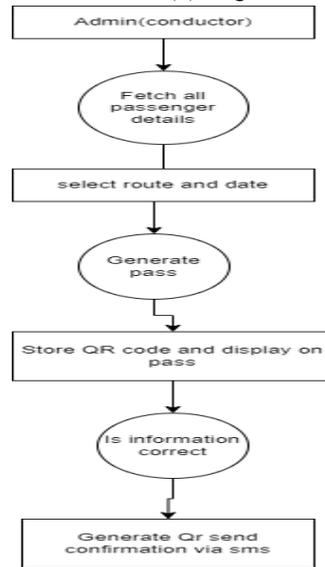
**Data Flow Diagram**

In Data Flow Diagram, we Show that flow of data in our system in DFD0 we show that base DFD in which rectangle present input as well as output and circle show our system, In DFD1 we show actual input and actual output of system input of our system is text or image and output is rumor detected like wise in DFD 2 we present operation of user as well as admin.



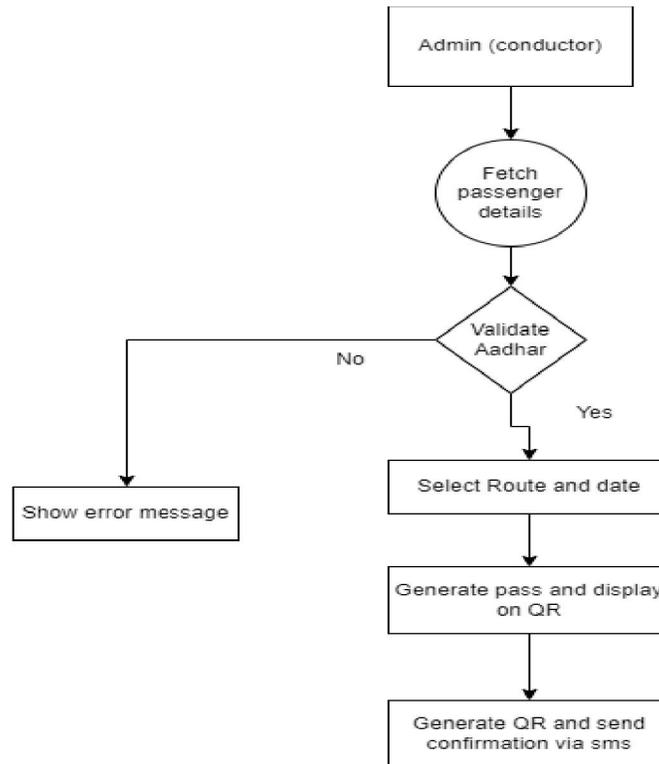


Data Flow (0) diagram



Data Flow (1) Diagram





Data Flow (2) Diagram

**Software Requirements:**

Operating system : Windows 10.  
 Coding Language : Python  
 IDE : Visual studio  
 Database : Dbsqlite

**Frontend:** HTML

CSS  
 JavaScript

**Hardware Requirements:**

System : Intel I5 Processor.  
 Hard Disk : 40 GB.  
 Monitor : 15.  
 Ram : 8 GB

**IV. FUTURE SCOPE**

This project has a wide scope for future development, as the users requirement is always going to be changed which is including tracking the location of the bus. It is helpful for the user to find the current location of the bus and it is providing the feature that is online booking of ticket and seat for the journey and make changes to the system as per user requirements.



Potential improvements include:  
QR code validation for instant verification  
Advanced mobile app integration  
Live bus tracking and real-time updates  
Data analytics for personalized services  
Cloud-based infrastructure for better scalability and security

## V. CONCLUSION

It is concluded that the system will work well and thus it will fulfil the end users requirement. In this application will be accessed from one or more than one system and hence login from more than one system is tested. The system is user friendly so that everyone can use this application easily. User has to give the proper documentation. The user is able to easily understand how this overall application. The system is assessed, implemented and its performance is found to be acceptable to the users. The required result for the user's requirements is generated. Additional enhancements can be added to these system, because the features of this application is very attractive and it is useful than the present one. The speed of the transactions is achieved. A bus ticketing system is highly beneficial and crucial, particularly in urban areas. Numerous benefits come with this system, including its large capacity, ease of use, wide coverage, ease of integration with cars, and increased effectiveness. The tracking module in this system used a model to retrieve the dynamic vehicle location and transmit it to a server. People can then use their Android smartphones to obtain this information. Bus travel is also made extremely convenient with smart card based ticketing. People can travel securely and money less with the use of this facility.

## REFERENCES

- [1]. Development of an Effective Online Bus Pass Generation System for Transportation System for Transportation Service in Karnataka State.
- [2]. Caulfield and M.O'Mahony, "An examination of the public transport information requirements of users", IEEE Transactions on Intelligent Transportation Systems, vol. 8, no. 1, (2007).
- [3]. J. Lee, K. Hong, H. Lee, J. Lim and S. Kim, "Bus information system based on smart-phone Apps", in Proc. of KSCI Winter Conference (2012).
- [4]. S. Chandurkar, S. Mugade, S. Sinha, M. Misal and P. Borekar, "Implementation of Real Time Bus Monitoring and Passenger Information System", International Journal of Scientific and Research Publications, vol. 3, no. 5, (2013).
- [5]. K. G. Zografos, K. N. Androutsopoulos and V. Spitarakis, "Design and assessment of an online passenger information system for integrated multimodal trip planning", Trans. Intell. Transport. Syst. vol. 10, (2009).
- [6]. K. Ganesh, M. Thirvikraman, J. Kuri, H. Dagale, G. Sudhakar and S. Sanyal, "Implementation of a Real Time Passenger Information System".

