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Android Based Bus Ticket Booking System

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ABSTRACT : -

Today, reliability in public bus transportation is crucial. This project offers a practical means of selling tickets via an Android app for public bus transportation. One login is for the user of our system, and the other is for the admin. This method makes it possible for users to purchase bus tickets online through an Android application. Instead of waiting for the bus attendant to hand out tickets, this technology allows passengers to purchase their bus tickets online. This approach helps users obtain bus tickets quickly and easily while reducing the amount of paperwork they must complete. The user can fill out their information, link a bank account, or use wallet services to make a payment. This system offers features like instantaneous delivery of bus tickets and access to user-basic information for authentication. This technology offers the user security choices and verifies whether buses are running along the next route. The application would send the user a message with information such as the time, date, and location that the ticket was being used in a transaction.

KEYWORDS : - Bus Pass, QR Code, Attendance, Application Network.

I. INTRODUCTION

In many places nowadays, buses are the most widely used type of public bus transportation. A system that can track and forecast the flow of passengers on the buses that are now running would be helpful to raise the bar for the bus company. Rider Flow in this context refers to the fluctuating bus passenger load that changes with time and location. The flow of passengers will serve as a partial indicator of the collective human quality along a route and, consequently, of the comfort level of the bus service. From a programming standpoint, it reveals how many people travel or need to travel a particular route. This information will direct the operators in dynamically allocating and scheduling the route and timetable in precise detail. The current practice among bus transit system operators shows that manual data collection efforts are expensive and frequently only useful at small scales. The use of automatic data gathering technologies is expanding quickly and has great promise. We now have the ability to estimate and forecast the passenger flow for each bus in an urban BTS because to the development of large information systems. Numerous buses go in a straight line, and we often presume that no passing takes place between them during their whole trips. Every station has a passenger entrance and exit, which alters the bus rider flows throughout time and space. Since the buses have already passed through the segments and stops shown by the solid lines and circles, the remaining trips are shown by the dashed lines. The issue is how to estimate the number of passengers on each bus and how to forecast the number for the duration of the trip in the near future given the time data of AFC transaction records and therefore the OBU traces of the buses. Every bus is generally under the conductor's authority. Each passenger will be given a ticket, and

the conductor will collect payment. Tickets are initially issued on printed paper or tokens. Tickets are now printed using portable devices. This system has a lot of drawbacks. The time it takes to purchase a ticket is comparatively getting longer as more and more paper is required to print the Ticket. The passenger must scan the QR Code for his attendance. Nowadays, conductors receive training on how to use the portable ticketing device. Suppose a passenger wants to take the bus. He needs to have cash on him. The conductor will then hand out tickets after collecting the money. Each passenger must hear this again. This will require more time and squander both energy and human resources. Even portable ticketing devices are relatively slow and require training to use.

II. LITERATURE REVIEW

1. **Mohini S. Shirsath, Pooja M. Chinchole, Vaishnavi R. Mahajan, Varsha G. Mogal, "A Review on Smart Bus Ticketing System using QR-Code," 2021.**

   A system with IOT technology is proposed by Mohini S. Shirsath and Pooja M. in which a GSM module is installed on the bus and tracks the bus location while informing the user of the bus' current location. The system also includes a web portal for the administrator to keep track of the GSM module. Since the location of the bus can be quickly determined thanks to the GSM module integrated in the programme, it solves the problem of waiting times at bus stops. The application's shortcomings include that it does not address the real-time issue of bus ticketing, which is the main issue that passengers face, that it continues to use the manual procedure of the current system for bus ticketing, that it does not offer an integrated interface for users and administrators, that it does not offer an interface for conductors, and that conductors play no part in the application[1].

2. **Nwakanma Cosmas, Etus Chukwuemeka, Ajere Ikenna, Agomuo, Uchechukwu, "Online Bus Ticket Reservation System. Statistics and Computing," 2015.**

   By offering a web portal where customers can log in and reserve tickets for the voyage, Nwakanma et al.'s system allows passengers book tickets online. This application has a user-friendly interface for users to utilize while booking tickets. This application only focuses on addressing the issue of ticket reservations, and it is of no use to passengers who travel frequently. It also doesn't address the issue of reducing paper work, doesn't include a passenger-specific application, and conductors have no role to play because the application only automates existing manual processes. Additionally, because the application can only support a maximum of 20 users, it cannot accommodate more users. Once the tickets are reserved, the programme emails the user; hence, the user must carry the actual ticket[2].

3. **Dhruv Mehra, Jay Gangadia, Jeevan Ghag, Aayush Gupta "Bus Reservation System" 2021 .**

   A system suggested by Dhruv Mehra and Jay Gangadia involves sending bus passes to customers via email after the registration process is complete. By giving passengers their bus tickets in the form of a QR code, this application addresses the issue of minimizing paper effort. The application also eliminated the manual process of the current system of standing in long lines and waiting for bus passes for predetermined amounts of time, as well as the issue of carrying physical tickets that increases the likelihood that passes will be lost or damaged. However, this application fails to provide an integrated interface for users, administrators, and conductors; instead, the conductor must use third-party QR code scanner apps to scan the QR code and does not have any interface of their own[3].

4. **Parashuram Barki, Sandhya Kulkarni, Spurthi Kulkarni, Arpita Goggi and "Development of an Effective Online Bus Pass Generation System for Transportation Service in Karnataka State," 2021.**

   A system that incorporates bus pass generation with a QR Code scheme is proposed by Parashuram Baraki and Sandhya Kulkarni as a database-driven method of handling bus pass data. By using the

web application offered by this programme, people can obtain their bus passes online. Bus passes should be electronically available, not by standing in huge lines. This method minimizes paperwork, saves time, and makes it simple and quick for the consumer to get a bus pass. By using a QR code, it's intended to be a cheap method of keeping track of bus pass information There are two logins for the system: one for the administrator and one for the user. The controller has access to all account-wide user information. Each user access would have a QR code with their information and the expiration date of their pass. This application eliminates the need for manual ticketing by creating bus passes with QR codes online; however, since it is a web application, the passenger receives the QR code through their registered email address, therefore an integrated interface is not available[4].

5. **Anurag Sharma, Amit Sharma "Development of effective web-based bus pass generation" 2020 International Journal of sustainable development in computer science.**

A system proposed by Anurag and Amit Sharma seeks to give college students an efficient way to create interactive web-based bus passes. For authentication purposes, this system will only need the student's personal information and a confidential pin, which they must purchase from the college office or the DTC bus station. Students have constant access to the system. The student will be able to renew their card through this manner as well. In the event of a loss, there will be a small penalty. Additionally, the pass holder must travel with his or her I-card on hand for verification in order to identify users of fake bus passes. The bus ticket that this application offers is in the form of a card[5].

6. **Vasanta Sanga, Pritvi Navale, Mayuri Shirke "Smart bus pass generation" 2021 International Research Journal of Engineering and technology .**

They have proposed a system that attempts to offer a practical means of utilizing a database to keep Bus pass information. Those who are having trouble with the present manual process of bus pass registration and renewal can benefit from online bus pass generation. The system features two logins: an admin login and a user login. A web program called the Online Bus Pass Generation System allows users to obtain bus passes online. The goal of this system was to create an application that could carry out tasks like obtaining the necessary data for verification and giving a specific person a bus pass without making them wait a long time in line. Conductors play no part in this program because it involves passenger and administrative entities and does not give a conductor interface[6].

7. **Nikitha Patil, Adarsh K. "Android Bus Ticketing System" International Journal Of Electrical, Electronics And Data Communication.**

This Manuscript delineates the design & development of a user friendly Online Bus Ticketing System based on Android platform. This system eliminates the Man power, Smart card usage and Paper tickets are eliminated, on that account it will make the passenger comfortable to travel. This project have many disadvantages in ticket collecting system such as fare is debited from the recharged amount, hence cash is no longer necessary and also passengers no longer need to carry the correct change to buy the tickets. The tickets are generated directly on passenger's mobile phones so smart card usage and paper tickets are eliminated. On that account it will make the passenger comfortable to travel with this User-friendly system[10].

The previously mentioned literatures demonstrate out a number of the system's drawbacks, including the fact that it is manual in nature, requires a lot of paperwork, and requires passengers to wait in long lines. The present system is also flawed as bus passes are issued physically and are prone to being lost or damaged. Once a pass is damaged, it is no longer considered valid, so passengers must pass through an exhausting manual process to get another one. The passenger must go through the same pass development procedure again in order to complete the manual renewal process. While multiple applications have been designed similarly, they do not have key characteristics, such as the capacity to generate QR codes within the application, conductor and passenger interface integration within the application, or availability of QR codes. Since the pass is

provided physically, some programs mimic the manual procedure of the current system and do not address the issue of minimizing paper work. Thus, by including features like an integrated interface for passengers, conductors, and administrators, the suggested system reduces these shortcomings. The system is improved and made more user-friendly by the integrated application's provision of QR code generation and scanning features.

In the modern, technologically advanced nation where everyone travels more quickly to their destinations. They don't want to wait for anything in this situation. They therefore do not have the time to collect tickets every day. For those who use public transportation, it is necessary to be aware of the real-time location of the bus. They must also be aware of the time it takes the bus to get to their bus stop. This People use the app or website, which aids in helping them make wiser travel decisions.

III. PROPOSED SYSTEM

In this application, the administrator, conductor, and passenger interact with the database. Here, the administrator can add and remove both conductors and passengers. The administrator also accepts people when they register for passes. Using the application, the conductor can edit the profile, including adding or removing his or her phone number and changing the password. The user can manage his or her profile by changing the details, as well as check previous payment activity. The user can also generate a pass by applying for one and receiving admin approval. The user can also renew an existing pass by making the necessary payment. The MYSQL database, where the data created is kept, allows for full record viewing.

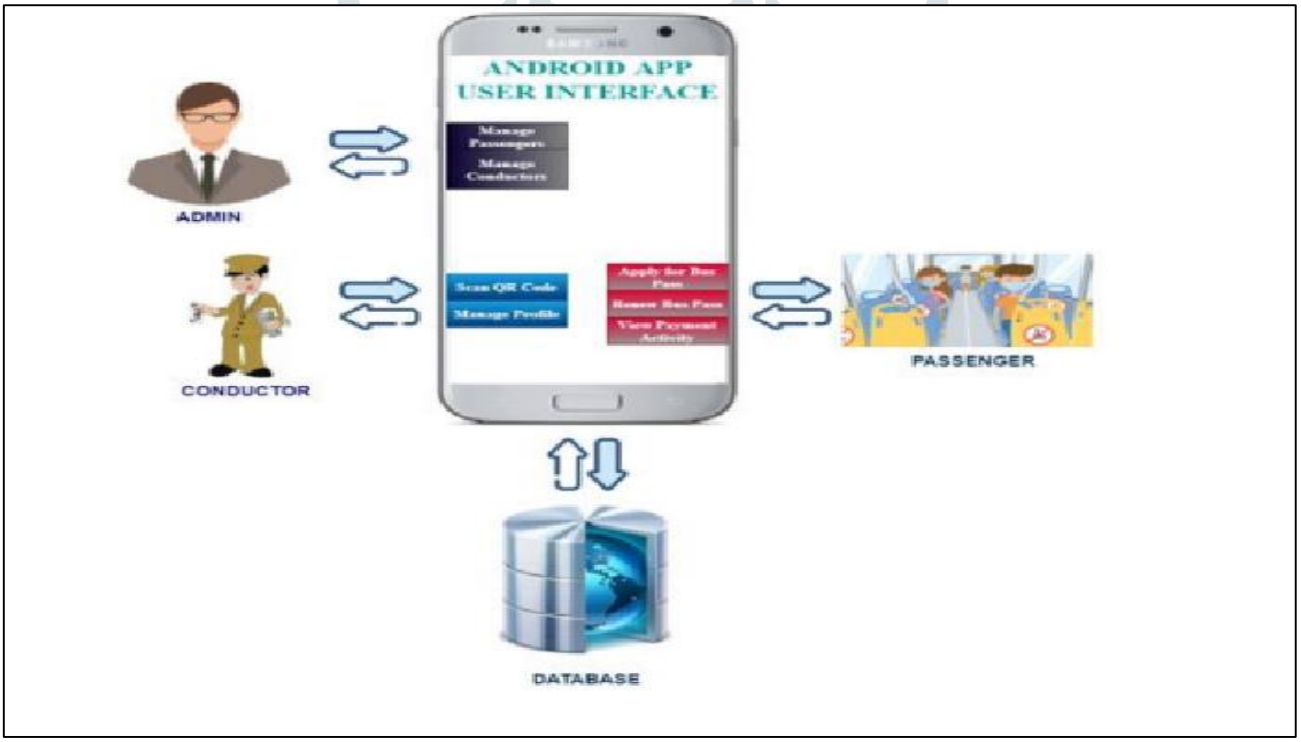

Figure 1.Flow Chart

Android

An operating system called Android is primarily made for portable electronics like smartphones and tablets. It was created by Google and is based on the Linux kernel.

C#. NET

As a component of its.NET framework, Microsoft created the contemporary object-oriented programming language C# (pronounced "C sharp"). Since its first release in 2000, it has grown to be one of the most widely

used programming languages for creating Windows applications, web apps, and several other types of software. A business intelligence tool called Crystal Reports is used to create reports from a variety of data sources. Users can design visually appealing reports with tables, graphs, charts, and other data visualization components.

IV. CONCLUSION

From this system, physical labour is reduced and digitalization is increased. Bus pass systems can generate bus passes online, renew them using user IDs, and validate them using Aadhaar cards. Users don't need to visit any private or public offices to find all the information they need about bus passes online. Users can register and generate bus passes through the initiative in order to obtain bus passes. To maintain their account, users can use an online application or website. Additionally, big data processing is used to store the extensive passenger database. To process enormous datasets, it makes advantage of the Android Framework. It is used to protect data and ensure effective memory utilization.

V. RESULT

By removing shortcomings from the current system that is, the manual and paper-intensive nature of the bus pass generating process that the suggested solution improves user interface. By digitizing the process, it resolves these issues. Because all the components are integrated into a single system and have an improved interface, the proposed application is easy to use for administrators, passengers, and conductors alike. The application makes use of the ZXing library to generate QR codes and create QR code scanners, which aid in offering external features for both passengers and conductors in the application. One of the most effective libraries is ZXing, which offers 82.86% of reading rate on a QR code and 54.12% of reading rate on

VI. REFERENCES

[1] Mohini S. Shirsath, Pooja M. Chinchole, Vaishnavi R. Mahajan, Varsha G. Mogal, “A Review on Smart Bus Ticketing System using QR-Code,” 2021.

[2] Nwakanma Cosmas, Etus Chukwuemeka, Ajere Ikenna, Agomuo, Uchechukwu, “Online Bus Ticket Reservation System. Statistics and Computing,” 2015.

[3] Dhruv Mehra, Jay Gangadia, Jeevan Ghag, Aayush Gupta “Bus Reservation System” 2021 International Research Journal of Engineering and technology.

[4] Parashuram Barki, Sandhya Kulkarni, Spurthi Kulkarni, Arpita Goggi and "Development of an Effective Online Bus Pass Generation System for Transportation Service in Karnataka State,” 2021.

[5] Anurag Sharma, Amit Sharma “Development of effective web-based bus pass generation” 2020 International Journal of sustainable development in computer science.

[6] Vasanta Sanga, Pritvi Navale, Mayuri Shirke “Smart bus pass generation” 2021 International Research Journal of Engineering and technology.

[7] P. Sharmila, A. Ponmalar, R. Skanda Gurunathan, “Bus Reservation System”, 2020 International Journal of Computer Science and Information Technologies, vol. 6(3), 2020.

[8] 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.

[9] Pandimurugan, Rahul Mandviya, Abhinav Gadgil, Kumar Prakhar,Aditya Datar, "IoT based Smart Beekeeping Monitoring system for beekeepers in India", Computing and Communications Technologies (ICCCT) 2021 4th International Conference on, pp. 65-70, 2021.

[10] Nikitha Patil, Adarsh K. "Android Bus Ticketing System" International Journal Of Electrical, Electronics And Data Communication, ISSN: 2320-2084

[11] Hari Narasimhan, M., Reinhard Kenson, A.L., & Vigneshwari, S., "Smart Bus Management and Tracking System," 2021.

[12] Paul Hamilton, "Mobile enable bus tracking and ticketing system", IEEE transaction, vol.13, 2014, pp.768775.

[13] S.Sukhumar, M.Bhuvaneswari, "Embedded system based automatic ticket vending machine for modern transport system", issue 11, vol.2, 2013, pp.51-63.

[14] Saurabh Chatterjee, Prof.Balram Timancle, "Public transport ticketing system using RFID and ARM processor", International Journal of Electronics and computer science Engineering, issue 3,vol.1, 2012, pp.1619-1622.

[15] Arun Das.S, Lingeswaran.K, "GPS based Automated public Transport Fare collection systems based in Distance Travelled by passenger using Smart card", issue 3, vol.2, 2014, pp.93-107.

[16] Prajash Chara, Rakesh Kumar Keshari, Prakhar Soni, "RFID based Ticketing for public transport system", issue 5,vol.2,2014, pp.58- 97.