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Bus Pass Mobile Application Using QR Code

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ABSTRACT: The use of public transportation, such as social travel, has increased in recent decades (ST). Many students also use the bus pass for regular transportation. The traditional bus pass system is entirely based on paper, which means that each student must carry a paper pass. This system has used a large amount of paper. Rather than the traditional system, this has been invented, and people have created an online bus pass system, but it is very difficult to keep the users online. To address this issue, a QR-based student bus pass system is implemented. This system only provides QR codes to students, reducing the use of paper. Because 80 percent of students use smartphones, this system cannot function without internet. This eliminates the need for students to connect to the internet and alleviates the burden of carrying a pass. This system also overcomes the problem of student passes becoming wet during the rainy season. The main goals of this work are to describe the online bus pass generation and bus pass generation. People who are having problems with the current bus pass generation method will benefit from online bus pass generation.

KEYWORDS: Users, Verification, Ticket Checker.

I. INTRODUCTION

Various technologies have emerged in today's computing world. These have grown to support the world's existing computer networks. The need to be conned within one physical location has been eliminated by mobile computing. We hear terms like telecommuting, which refers to the ability to work from home or the field while still having access to resources as if one were in the office.

Because technology is rapidly evolving, people must keep up in order to stay current. The current pass generation method is a slow, inefficient, and time-consuming process. Users must wait in a long line to have their passes processed, which is a time-consuming and difficult process for both users and employees. The current bus pass system has some drawbacks, such as the fact that the pass is regenerated every time, which is a time-consuming process that necessitates reprinting the pass every time. Existing systems do not offer any security options. The most recent digital bus pass generation allows people to generate and obtain their bus pass online rather than standing in a long line[1,2].



The generated bus pass can be used for an extended period of time because users can recharge their digital bus pass whenever it is about to expire[3]. The bus conductor and admin will verify the authenticity of the pass by scanning the QR code that was sent to the user's registered email address using an Android mobile device, and the conductor will be able to determine whether the pass is valid or not. The QR code contains information about the user such as the user's name, user ID, source, destination, start date, expiry date, and so on. When the QR code is scanned, it generates a message indicating whether or not the bus pass is valid. If it is found to be valid, it will display the user's pass information. This application shows a trust worthy relationship between the users and admin.

Existing System drawbacks

The current bus pass generation system has been in use for a long time. In every way, this system is ineffective and inefficient. It consumes more money and energy from the government as well as the people. It cannot even benefit one side. There are numerous errors that occur when allocating and generating bus passes[4,5]. This occurs due to the large amount of data in physical form, making it nearly impossible to protect all of the data. This system has no options or mechanisms for detecting fraud.

Drawbacks

In our daily lives, college students have their passes with them and they have to carry the passes with them every day, so it's very difficult to carry the pass every day, and it's also difficult for passengers to carry tickets, so we motivated that there is any facility that can help us that we can book a ticket and get a pass for students that according to their destination.

Objectives

1. We propose a QR reader for bus tickets in this paper. Instead of a ticket, the user can scan a QR reader.
2. Digital bus pass generation is useful for people to get their pass online rather than standing in long lines.
3. The user can use the pass for an extended period of time and only needs to validate the pass when it expires.
4. The system includes security features for both students and passengers.

Scope

The proposed system is aimed at online bus pass generation and authentication, i.e. QR code verification.

1. To overcome the difficulties of the current system, the bus pass generation and renewal processes will be digitalized.
2. This system generates bus passes online in the form of QR codes, saving time and labour.
3. It meets the needs of the user.
4. Scalable and user-friendly interface.

II.RELATED WORK

The Android application detects passengers travelling from any location to any location using the Global Positioning System. It can assist governmental organisations in identifying thefts and robbers travelling via trains or metros. Despite digital map errors and navigation system inaccuracies, map-matching [6][7] algorithms attempt to locate the vehicle in a specific roadmap segment.

An asynchronous multi-obstacle multi-sensor tracking method[8] that combines radar and monocular vision data. An IMPDA Kalman filter framework incorporates a low-level fusion method. An android application in which the ticket can be carried in the form of a QR code[9], but it is difficult for the passenger to understand whether or not the purchasing ticket is correct. Because the majority of people are not aware of QR - Code technology.

A system that allows phones to be used to purchase electronic public transportation tickets. QR codes and RFID tags [10] are used to register passengers both at the start and end of their journeys. The use of NFC and QR code identification in a public transportation electronic ticketing system.

III.PROPOSED SYSTEM

This system described in this project is very simple to implement. This system consists of a registration form in an Android app where the user can apply for and renew their pass online. In addition, when applying for a pass, the user must provide



documentation that will be used for the verification process. Aside from other systems, it also introduces a new role called admin to verify users in order to reduce the workload of the main system admin. This application consists of three applications: a web application, an android application for passengers (users), and a ticket checker application. The web application communicates with the database to verify admin details. The passenger android application will communicate with the web application, where the user can request a bus pass, enter payment information, and a QR code will be generated, which will be scanned by the bus pass checker application, which will then be able to retrieve the user's information and determine whether the pass is valid or not.



IV. CONCLUSION

This is a real-time system for users who are having difficulty carrying physical bus passes, particularly during the rainy season, when the pass may become wet or cut. Also, by analysing the massive amount of paper used these days. In our system, the QR Code serves as a bus pass. As a result, both problems are resolved. The user is not required to carry cash while travelling. The driver only scans the pass, and the fare is deducted from the user's account.

It is concluded that the system will function properly and thus meet the needs of the end user. The system is thoroughly tested, and all errors are precisely removed. This application can be accessed from one or more systems, so login from multiple systems is tested. This system is very efficient and user friendly, so anyone can use it with ease. The user must provide the necessary documentation. The end user can easily understand how this overall application works. The system has been evaluated and implemented, and its performance has been determined to be satisfactory to the end users.

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