



A Survey on Online Bus Pass Generation System using Aztec code

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ABSTRACT: This project aims at providing an effective solution for maintaining Bus pass information using a database. The system has two logins, one for user and the other for admin. Online bus pass generation system would be useful for commuters to get their bus passes online instead of standing in long queues to obtain their passes. This system is intended to perform functionalities like accessing basic information for authentication and provide Bus pass for the commuters without placing them in long queues. The official in the bus, would be able to verify the authenticity of the pass by scanning the Aztec code provided on the pass with a recommended device.

KEYWORDS: Login, Apply, Payment, Generation, Notification.

I. INTRODUCTION

The government of Karnataka provides the transportation facility for its people in the state. There are several buses that the people use for travelling. Travelling would require the passengers to buy the ticket during the course of travelling. This may be sometimes difficult due to the crowd in the bus and people may not buy the ticket for travelling. Also, the people may require to travel longer distances and the cost of the ticket may be higher. For this reason, the government provides the bus pass facility to the people so that, they can avoid buying the ticket everytime they use the bus services for travelling.

The bus pass issue system that is currently in existence, has the following drawbacks. It is a manual process in which students and other commuters are required to submit application forms along with their details filled. These application forms are to be verified and then the bus pass is issued to the concerned person after the application form is verified. This is a tedious process, which requires the people to stand in long queues to get their passes. This results in a lot of time wastage for the commuters. Also, the bus pass issue takes place in the current system, only for a limited period of time during the day that is until evening. The commuters may not be able to acquire their passes once the depots at the bus stands, once the counters are shut down in the evening. [1]

This project deals with solving the above mentioned drawbacks and provides the following advantages:

- 1) It would provide a 24 hour issue of bus pass to the people in need for the pass.
- 2) Facilitates online payment by the user.
- 3) Eliminates the need for people to stand in long queues and does not result in the unnecessary wastage of time.

The online payment can be done by the commuters in need of the pass through any of the following ways:

- Credit card
- Debit card
- Master card
- Visa card [2]

Once the pass is generated and after the payment is done, the PDF copy of the bus pass would be generated and be issued to the commuters. The customers can then download the bus pass and use it for the travel. Also, the PDF of the pass generated would contain information that is encoded in the form of an Aztec code. This Aztec pattern can then be

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scanned using a recommended device by the official present in the bus, and can be verified by connecting to the database that contains the user information of the bus pass.

II. RELATED WORK

This gives the literature survey of the bus pass issue system across the Indian states. The existing online bus pass issue system requires the commuters and students to submit the specified documents manually at the bus depots.

Once the documents are submitted, it would be verified by the officials present at the depots. This results in a lot of time wastage for the travelers as they would need to go to the bus depots for verification. Once the verification is done, the bus pass would be issued on a specified date as communicated to the user. This becomes a tedious task for the user to repeatedly go to the bus depots just for the purpose of getting their passes. This is the situation in Karnataka state. [3]

In the state of Andhra Pradesh, the online application form that is created using HTML is implemented already. This indicates that the bus pass form can be filled and submitted online by the use of internet. But, the disadvantage of the system is that, the bus pass is not generated and issued online as it is intended to be done in this project. [4]

In the states of Tamil Nadu and Maharashtra also, the details about the fare and timings of the buses is available for the benefit of the users. But, the online bus pass system is unavailable. The case is the same across some of the other states like New Delhi etc. [5]

III. BRIEF DESCRIPTION ABOUT AZTEC CODE



Fig.1. Aztec code

As shown in the fig 1, the Aztec code is a 2D barcode invented by Andrew Longacre Jr. and Robert Hussey in 1995. It was published as ISO/IEC 24778:2008 standard named after the resemblance of the central finder pattern to an Aztec pyramid, and it has the capability to use less space than other matrix barcodes because it does not make use of the “quiet zone” that surrounds it.

A. Structure:

The Aztec code has the following structural features:

- It is built on a square grid with a bulls-eye pattern at its center for locating the code.
- Data is encoded in concentric square rings around the bulls-eye pattern.
- Data is added in layers, with each layer containing two rings of pixels.
- Decoding begins at the corner with three black pixels, and proceeds clockwise to the corners with two one and zero black pixels.



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- The part of the symbol that is not used for storage of basic data is used for Reed-Solomon error correction, and the split can be completely configured with the between the limits of 1 data word and 3 check words.

B. Uses of Aztec code:

The following are the uses of the Aztec code:

1. Transport

The Aztec code barcode is suitable for the tickets sold online and for the tickets printed out by the commuters. This printed ticket can be scanned by the device that reads the Aztec code.

2. Governmental

The Aztec barcode is used in car registration documents in Poland.

3. Commercial

Many billing systems in Canada are using the Aztec barcode technique well these days. [6]

IV. PROPOSED SYSTEM

The proposed system is intended to overcome the major drawbacks of the currently existing manual system. This system is easy to design and implement. It requires very low system resources. It will work in all the configurations.

It has got the following features:

1. This system will make sure that data is accurate.
2. Records will be efficiently and accurately stored and maintained in a DBMS.
3. Renewal can also be done online with the reference identification that is provided after the registration is done by the user.
4. Supposing if the student or any other type of commuter does not require the pass service anymore, he/she can cancel their registration.
5. Minimum time would be required for processing the details submitted and to generate the bus pass.

Moreover, the online bus pass system would consist of the following modules that are mentioned below:

A. Registration module

In this module, the user registers for the pass, by submitting the basic details online initially. After this, the reference identification number is given to the person using which, the person can login and submit the required documents that are mandatory.

B. Login

In this module, the user would login to the agency portal with the help of the reference identification number to submit the required document.

C. Apply

Once the login is completed, the online application form would be filled and submitted by the user online.

D. Verification

In this module, the online application submitted by the user is verified by the administrator and the pass would be generated only if all information is found to be correct.

E. Online payment

Once the verification is done, a notification would be sent to the user after which the online payment can be made by the user. The payment can be made by using credit card or master card and would eliminate the need of cash payment that is currently in existence in the manual process.

F. Pass issue and download

After the online payment is done, the pass that is generated online with the information that is encoded with the Aztec code would be issued to the user as shown in fig.2. In case if the bus pass is lost after download by the user, the duplicate for the pass can be obtained online with the help of the reference identification provided initially with a link provided for the duplicate pass.

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Fig.2. Generated PDF

G. Verification during the course of travel

The verification of the accuracy and validity of the pass would be done with a device recommended. This would ensure accuracy and would detect fraudulent activities such as faking of the passes and so on.

V. CONCLUSION

It is a real time project that would be useful for the public who are facing problems with the currently existing manual system of the bus pass issue and renewal. The proposed system would enable the people to register for the bus pass online. This system would also enable the users to renew the pass online by updating the details online. Moreover, it would eliminate the paper work that is present in the current system. Further, the verification of the validity of the pass would ensure that the fraudulent activities would not be possible by the users, because the device used for verification would connect to the database wherein the information is stored. This would ensure safety and minimize the time wastage and would make life easier and comfortable for the users acquiring the pass. Also, this system would enable people to apply for their bus passes any time in the day. That is, it would extend the time of the pass issue beyond the office hours of the travel agency.

These are some of the benefits that would be caused by the proposed system.

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), pp. 21-30.
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), pp. 219-222.
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), pp. 1-5.
5. K. G. Zografos, K. N. Androustopoulos and V. Spitadakis, "Design and assessment of an online passenger information system for integrated multimodal trip planning", Trans. Intell. Transport. Syst. vol. 10, (2009), pp. 311-323.
6. Aztec code from Wikipedia.com.