Web Application for Digital Bus Pass System Using QR Code

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Abstract: This system provides effective software for maintaining bus pass. "Web Application For Digital Bus pass system Using QR Code" is useful for peoples to get their bus pass online instead of standing in long queues to get their bus pass. This system reduces paper work, time consumption and makes the process of issuing pass in simpler and faster way. User can use the pass for long time, just need to recharge their account of digital pass and extend the validity of pass every time when pass is going to expire. No need to print the pass every time. This system performs functionalities like accessing basic information of user authentication. The admin and the conductor of the bus would be able to verify the authenticity of the bus pass by scanning QR code which is provided on the recommended device like android mobile and after scanning it will notify to user when pass is accessed. This system has three login for user, admin and conductor. System provides web application as well as android application for people to get their Bus passes online. The conductor in bus would be able to verify the pass by scanning the QR code

Keywords: Android Mobile, QR Code Privacy, Authentication, Online Payment, Client and Server.

I. INTRODUCTION

Web Application for Digital Bus Pass system Using QR Code is designed for provides effective software for maintaining bus pass. Pass holder are facing problems with the current manual process of bus pass registration and renewal of bus pass. Time required for creation of offline bus pass is very large and Passes are still physical slips of paper which can be lost or damaged. In the existing system bus pass registration and renewal process are carried out manually. The person has to visit the counter and have to submit the details and then they have to wait for approval. For each and every process there is time limit specified if the person fails to go on time then all the transactions will be cancelled. In this existing system was used to bus details maintain through file and after bus information are stored to computerize.

II. MOTIVATION

Pass holder are facing problems with the current manual work of bus pass registration and renewal of bus pass.

Time required for creation of offline bus pass.

Passes are still physical slips of paper, not a digital card.

Long queues for issuing passes.

III. PROBLEM DEFINITION

This project provides an effective solution for managing bus pass information using a database. Our system has three login for user, admin and conductor. This system provides web application as well as android application for people to get their Bus passes online. System is useful for users to get their bus pass online instead of standing in long queues to obtain their bus passes. The system is helpful to reduce the paper work, time consumption and user get the bus pass in simple and faster way. User can refill their account and extend the validity of card when the pass is going to expire. This system provides functionality like accessing basic information of user for authentication and provide Bus pass for the user without placing them in long queues. This system provides security option for user. The conductor in bus would be able to verify the pass by scanning the QR code provided on the pass with a recommended device and also provides online payment facility.

IV. LITERATURE SURVEY

This chapter contains the existing and established theory and research in this report range. This will give a context for work which is to be done. This will explain the depth of the system. Review of literature gives a clearness and better understanding of the exploration/venture. A literature survey represents a study of previously existing material on the topic of the report. This literature survey will logically explain this system.

1) Estimation of Passenger Route Choice Pattern Using Smart Card Data for Complex Metro Systems:-

a. In this paper Juan Zhao, Fan Zhang developed a probabilistic model that can estimate from empirical analysis how the passenger flows are dispatched to different routes and trains.

2) Exploring ticketing approaches using mobile technologies: QR Codes, NFC and BLE:-

a. In this paper Joo Leal, Rui Couto, Pedro Maurcio Costa developed, analyzed and compared at different levels and two possible approaches proposed.

3) Bus pass mobile application using QR code:-

- a. In this paper Jivan Shelke, Aniket Mahangde, developed a bus tracking system and QR Code based ticket pass system.
- 4) Digital Bus Pass Using QR-Code:-

a. In this paper Snehal Banale, Prajakta Dudhade, developed system that is useful for users to get their bus pass online instead of standing in long queues to obtain their bus passes.

V. 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.

VI. METHODOLOGY AND ALGORITHM

Description of Proposed System: The System has the following features:-

It will ensure data accuracy.

All the records will be efficiently maintained by SQL Database.

The bus pass registration is necessary for the system.

Only minimum time needed for the various processing.

Users Activities: - This system is for admin, conductor and user, the most common activities by users are illustrated below. User (Pass Holder):-

The user can sign up/do registration with the system.

The registered only user can login to the proposed system.

The user can also do renewal process of the system.

The user can print the bus pass report.

The user can register their bus pass details.

The user can login using username and password.

Admin:-

Using this system admin can:

View all users' details through its login.

Generates reports and manage the whole system.

Change or modify user right.

Manage the different pass schemes.

Verification of online registration passes.

Can check the history of pass of any user for verification.

Conductor:-Using this system conductor can:

Check the validity of smart bus card by scanning QR-code that contain all the information about passenger using QR code scanner - Check the information about the user.

ALGORITHMS:-

1. Encryption in EK-EQR has two steps

Step First: Encrypt DATE factor.

Step Second: Encrypt user ID with key encrypted DATE factor.

Explanation: -Choose the text (Unicode string) or binary data (byte sequence) to encode.

-Choose one of the 4 error correction levels (ECL). ...

-Encode the text into a sequence of zero or more segments.

VII. MATHEMATICAL MODEL

Where, S=System I=Input P=Process R=Rules O=Output **Input** {I} is set of all inputs giving to system. $I = \{I1, I2, I3, I4, I5\}$(2) Where, For User I1=User Details. I2=Login Credentials. For Admin I3=Admin login credential. For Conductor I4=Login credential.



IX. RESULT AND ANALYSIS





X. FUTURE SCOPE

This project has a wide scope for future development, as the user's requirement is always going to be changed which is not static and this needs are dynamic.

The technology which is famous today becomes outdated in very next day. To keep abstract of technical improvements, the system may be further refined. So such type of system is improved in further future development.

This enhancement is done in an efficient and effective manner. We can thus update the same with further modification establishment and can be integrated with minimal modification. Thus the project is extendable and can be developed in anytime with more advanced features.

ADVANTAGES

- This system can be used in any bus transport undertaking services.
- Using the system in government and private sectors can exclude the use of human efforts and saves lot of money and time.

• This online bus pass software system will help students and passengers get bus passes online and eliminate the need of standing in queues for passes for each journey.

DISADVANTAGES

• The main disadvantages this system is that system is depend on Availability on Internet.

APPLICATIONS

- This system can be used in any bus transport which provides pass to daily travelers.
- Using the system in government and private sectors can exclude the use of human efforts and saves lot of time and money.
- By deploying this system on Bus depot it will reduce the efforts of verification of person demanding the pass.

• Moving one step towards the digitalization this system also provides the online and secure payment to users, so it can be used in various private transport agencies.

• Organizations providing bus facilities to their employees can use it to manage pass related activities.

XI. 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. It also increases the validity period, frequently Warns to the student before completion of his validity period by website. This Digital bus pass registration application will help students save their time and renewal bus passes without standing in a line for hours near counters. Initially students need to register with the application by submitting details of photo, address proof, and required details and submit through online. They will verify your details and if they are satisfied they will approve bus pass. You can even renewal using credit card.

XII. ACKNOWLEDGMENT

It gives us great pleasure in presenting the project report on 'Web Application for Digital Bus Pass System Using QR Code.'

Has been a system which simplifies the meaningless efforts of pass generating System satisfies all request of users to organize the data accordingly and validates it based on the given parameters.

We dedicate all our project work to our esteemed guide **Prof. V. N. Dhakane** whose interest and guidance helped us to complete the work successfully as well as he has provided facilities to explore the subject with more enthusiasm. This experience will always encourage us to do our work perfectly and professionally. We also extend our gratitude to **Prof. Pawar U. B** (**H.O.D. Computer Department**). Beside we are thankful to **Dr. Patil P. M.** Principal of our college and management.

We express our immense pleasure and thankfulness to all the teachers and staff of the Department of **Computer Engineering**, **S.N.D College of Engineering & Research Center, Babhulgoan for their co-operation and support**.

Last but not the least, we thank all others, and especially our friends who in one way or another helped us in the successful completion of this project.

We would like to extend our sincere thanks to our family members. It is privilege to acknowledge their cooperation during the course of this dissertation. We express our heartiest thanks to our known and unknown well-wishers for their unreserved cooperation, encouragement and suggestions during the course of this dissertation report.

REFERENCES

[1] Juanjuan Zhao, Fan Zhang, Lai Tu, Chengzhong Xu, Dayong Shen, Chen Tian, Xiang-Yang Li, "*Estimation of Passenger Route Choice Pattern Using Smart Card Data for Complex Metro Systems*", 1524-9050 2016 IEEE. Personal use is permitted, but republication/redistribution requires IEEE permission.

[2] Raed M. Bani-Hani, Yarub A. Wahsheh, Mohammad B. Al-Sarhan, "Secure QR Code System ",978-14799-7212-8/14/2014 IEEE

[3] Joo Leal, Rui Couto, Pedro Maurcio Costa, Teresa Galvo, "*Exploring ticketing approaches using mobile technologies: QR Codes, NFC and BLE*",9781-4673- 6596-3/15 2015 IEEE DOI 10.1109/ITSC.2015.9

[4] Dijana Jagodi, Dejan Vujii, Sinia Rani, "Android system for identification of objects based on QR code ",978-1-5090-0055-5/15/2015 IEEE

[5] Rafael Martnez-Pelez, Patricia Romero-Navarro, Aaron Garca-Molina, Joel Ruiz, "A Flexible Mobile Ticket for Intelligent Public Transportation" 9781-4673-7839-0/15/2015 IEEE.

[6] P.Sharmila, A.Ponmalar, Skanda Gurunathan R, "*Bus Pass and Ticket automation System*", Volume 3, Issue 8, August-2016, pp. 389-393 ISSN (O): 2349-7084.

[7] Kasha K, Abhisek Chowdhury, Keerthana D,A"*Survey on Online Bus Pass Generation System using Aztec code*", International Journal of Innovative Research in Computer and Communication Engineering (An ISO 3297: 2007 Certified Organization) Vol. 4, Issue 2, February 2016.

[8] Parashuram Baraki, Sandhya Kulkarni, Spurthi Kulkarni, Arpita Goggi, Keertipriya, "Development of an Effective Online Bus Pass Generation System for Transportation Service in Karnataka State", (IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 6 (3), 2015, 3115-3118

[9] Donghyuk Park, Hyunsung Kim, "Secure Urban Bus Information System based on Smart Devices", International Journal of Security and Its Applications Vol.9, No.1 (2015), pp.205-220.