Eleyon
SOUTH ASIAN JOURNAL OF ENGINEERING AND TECHNOLOGY

Full Length Article

An Android Application for Online Bus Pass Renewal System

K. Nandhagopal[a], T. Dinesh kumar[a]

a Assistant Professor ,Department of Computer Science and Engineering, P.A. College of Engineering and Technology, Pollachi. Coimbatore, Tamilnadu

***Corresponding Author**

(K.Nandhagoapl)
(T.Dineshkumar)

ABSTRACT: The rapidly increasing population causes long waiting times for taking bus pass. Diagnosing record of continuous information of every who are on the whole utilizing transport passes, Bus pass automation would be beneficial for government to implement better rates for passes and also it would be useful for people who forget to renew their bus passes. Also taking tickets in aMetropolitan Transport Corporation (MTC)bus is a tedious process now-a-days. In this project, to renew bus passes using android mobile application. This system renews the bus pass through online and the bill is generated with the QR code to the user. This system also provides a special feature to notifythe users when the bus pass is about to expire. The QR code can be scanned and the app is also used to take print out of the pass, so that it can be shown to the conductors who are unfamiliar with android phones. Thereby, this Bus Pass Renewal System Project is a real-time project which is helpful for the people who are facing issues with the present manual work of bus pass renewal.

Keywords: Bus pass, online, security, QR code

1 Introduction

India is one of the largest country with huge population of 13.5 billion. Not all the people can travel with their own vehicle to their workplace destination and thereby most of the people use bus a common medium of transport. Bus plays a major role in common modes of transport as it is cheap when compared any other means of travel. It also provides safety than travelling by any other vehicle and it also protects the people from the environmental surroundings. So, the bus transport is considered as the one of best ways of transport travel. The bus passes are taken either for a month or for a year based upon their need. Currently, the monthly/yearly bus pass is taken through manual bus pass system which takes a lot of time.

TNSTC is fully owned and operated by the Government of Tamil Nadu. TNSTC has started online booking facilities to book bus tickets between major cities. It caters to all the districts within Tamil Nadu and also operates services to neighboring states of Andhra Pradesh, Karnataka, Kerala and union territory of Puducherry. Until 1997, transport corporation was bifurcated into 21 divisions which was later merged to form 8 divisions. TNSTC owns 321 depots and five workshops. TNSTC also offers contract and tourist

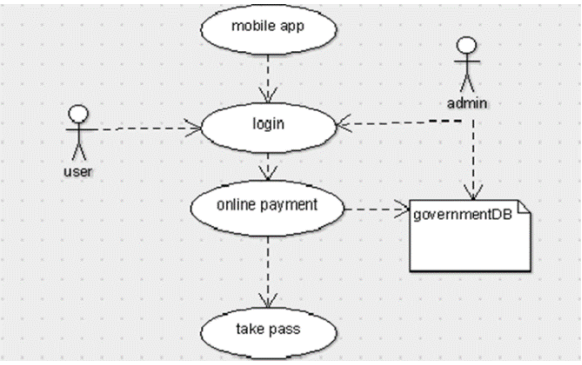

Fig. 1 System architecture

services. Every bus owned by the corporation displays a portrait of Tamil poet Thiruvalluvar along with a two-line verse from Thirukkural inside the bus. TNSTC is the largest government bus transport corporation in India also biggest corporation in the world after bifurcation of APSRTC.

As technology starts growing, need to update ourselves to current trends and our upcoming generations looking forward for necessary services in

one touch. Mobile phones play a major role in the current trend of generation as it is like no one can live without it. So, since the impact of mobile phone is high we should make use of it in a useful manner. The current system of taking tickets in the buses and applying or renewing for bus pass is a tedious process. It takes long time for taking bus tickets and for bus passes it involves a long queue in Depot and it is a time consuming process. The current system of taking tickets for larger crowd leads to stop the bus for long time before the stage closing for a long time. This increases increase in time delay for passengers and it hurts more for employees/students due to time delay in peak hours. All the data of the passengers are stored in the database and this helps in time saving for both the user and the admin and no data is lost.

Online Bus Pass Renewal System will be time saving process on the go and can be used to renew the bus pass through smart phone, which helps all generation people. This system provides connection between government server, where data is managed and android app, which provides a GUI for the user. This helps in avoiding bus delay due to ticketing and queues in bus stands and helps in reminding user about bus pass expiry. All the data of the passengers are stored in the database. When one wants to renew their pass, he/she can renew via the android application.

2. Related Works

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. [1]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 [2]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[5] etc.

3. Existing Work

In the existing system bus pass registration and renewal process are carried out manually till now. The person has to visit the counter to submit the details and 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 traditional systems like maintaining file. The bus information are stored to computerize. The Project Metrics has to enter all the details of project, documents, and tasks. The maintenance team information and also efforts estimation. The organization maintain the size of the document, source code and update the information about team member's details manually. This is time consuming process and more importantly it is error prone. At present system bus pass collect from depot very rare one. User can be facing lot of problems.

Disadvantages

- It is time consuming
- It consumes lot of manpower to better results
- It lacks of data security
- Retrieval of data takes lot of time
- Percentage of accuracy is less
- Reports take time to produce

4. Proposed Work

The proposed 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 database like Firebase.
3. Renewal can also be done online with the reference identification.

4. Minimum time would be required for generateprocessing the details submitted and to the bus pass. Moreover, the online bus pass system would consist of the following modules that are mentioned below:

A. Login

In this module, the user would login to the application portal with the help of the reference identification number to view the details.

B. Online payment

Once the verification is done, payment can be done via the online through the payment gateway. 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.

C. Pass issue and download

After the online payment is done, the pass that is generated online with the information that is encoded with the QR code would be issued to the user by the admin.

D. 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.

Fig. 2 System architecture

Fig. 3 Pass verification

5. Information About QR-Code

We are implementing a smart card for digital bus pass system. We are going to use QR code in our card to fetch the information of the user like username, source, destination, DOB, expiry date etc. In our system, user has to create his profile by visiting the bus depot, after registering he/she will be able to sign in and make payment, for their pass. After the successful payment, QR code will be generated and sent to their account or email address.

Camera and Android third party libraries will be used to scan the QR code. When QR code is successfully scanned, we will be able to fetch all the general information of the user as well as the validity of the card. The information fetched by scanning will be verified by the conductor who will be scanning the smart card.

6. Conclusion

Bus pass Renewal System Project is a real time project which is useful for the students as well as employees who are facing problems with the current manual work of bus pass Registration and renewal. It also increases the validity period, frequently Warns to the student before completion of his validity period by application. His / Her Renewal can be done using a debit or even by a credit card. This online bus pass registration application will help students/employee save their time and renewal bus passes without standing in a line for hours near counters. Initially students/employee need to register with the application by submitting details of photo, address proof, and required details and submit to the depot administrator. Conductor will verify your details and if they are satisfied they will approve bus pass. You can even renewal using credit card or other wireless transfer methods.

References

[1] Parashuram Baraki , Sandhya Kulkarni , Spurthi Kulkarni , Arpita Goggi , Keertipriya I,Development of an Effective Online Bus Pass Generation System for Transportation Service in Karnataka State‘ Parashuram Baraki et al, /

(IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 6 (3) , 2015, 3115-3118(ISSN:097-9646).

[2] Akshay K, Abhisek Chowdhury, Keerthana D, Manjula K, Rajeswari S‘ 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. ISSN(Online): 2320-9801 ISSN (Print): 2320-9798.R. N. Calheiros, R. Ranjan, A. Beloglazov, C. A. F. D. Rose, and R. Buyya, “CloudSim: A toolkit for modeling and simulation of cloud computing environments and evaluation of resource provisioning algorithms,” Software: Practice and Experience, vol. 41, no. 1, pp. 23–50, Jan. 2011.

[3] Online Bus Pass Issue and Renewal Megha Munnolli1 , Rekha Chamakeri 2 , Munera Dank3 , Ashishkumar Malagave4 , Prof Sankalp Mehta5 Department of Computer Science and Engineering KLECET Chikodi, India. ISSN (print) 125710 Volume 7 Issue No.5.

[4] K. Ganesh, M. Thrivikraman, J. Kuri, H. Dagale, G. Sudhakar and S. Sanyal,,Implementation of a Real Time Passenger Information System‘, CoRR abs/1206.0447 (2012). Q. Zhang, Q. Y. Zhu, and R. Boutaba, “Dynamic resource allocation for spot markets in cloud computing environments,” in Proc. 4th IEEE International Conference on Utility and Cloud Computing, Melbourne, Australia, 2011, pp. 178-185.

[5] Arun Das .S .V , K. Lingeswaran ,GPS based Automated Public Transport Fare Collection Systems Based on Distance Travelled by Passenger Using Smart Card‘ International Journal of Scientific Engineering and Research (IJSER ISSN (Online): 2347-3878 Volume 2 Issue 3, March 2014.W. F. Wang and S. J. Mei, “A cloud computing task scheduling strategy environment,” Electronic Technology, vol. 12, no. 7, pp. 35-38, July 2012.

[6] Kinjal H. Pandya, Hiren J. Galiyawala ,A Survey on QR Codes: in context of Research and Application ‘ International Journal of Emerging Technology and Advanced Engineering (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 4, Issue 3, March 2014).B. Mondal, K. Dasgupta, and P. Dutta, “Load balancing in cloud computing usingstochastic hill Climbing-A soft computing approach,” Proceeded Technology, vol. 4, no. 5, pp. 783-789, May 2012.

[7] Bhalotia.G, Hulgeri.A, Nakhe.C, Chakrabarti.S, and Sudarshan.S,(2002) “Keyword Searching and Browsing in Databases Using BANKS,” Proc. 18th Int‟l Conf. Data Eng. (ICDE ‟02), pp. 431-440.

[8] Digital Bus Pass For Local Buses Snehal Banale, Prajakta Dudhade, Rajshree Pal, Sayali Patil Department of Computer Engineering, APCOER, India 12345 Prof. Sneha Jagtap, Department of Computer Engineering, APCOER, India- 5 DOI: 10.5281/zenodo.19261.

[9] D. M. Bae, ,An analysis on the efficiency of bus information systems in Bucheon city‘, Journal of Korean Society of Transportation, vol. 20, (2002), no. 1, pp. 7-18.

[10] Abhijeet Boob, Ajinkya Shinde, Dhiraj Rathod, Amruta Gaikwad ,Qr Code Based Mobile App and Business Process Integration‘ International Journal of Multidisciplinary and Current Research(ISSN: 2321-3124).