

A Mobile Application for Bus E-Ticketing System

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ABSTRACT

In cities, the buses are the nerves of the cities. However, there are many bus operations, which were operated manually. The manual and traditional system takes a lot of time and the tickets cost being of odd amounts and many other different problems while buying tickets. Also in this advance world we are dependent on the paper tickets where the emergence of mobile devices are rapidly increasing among users so here is a solution. In proposed system ticket can be bought with just a smart phone application and, where you can carry your tickets in your smart phone. It uses the smart phones facility to validate and delete your ticket automatically after a specific interval of time. User's ticket information is stored in a database for security purpose which is missing in the present urban system. Also the ticket checker is provided with a mobile based application to search for the user's ticket with the ticket number which is stored in the database for checking purposes.

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1. INTRODUCTION

This chapter describes the term E-Ticketing and introduces the concept of E-Ticketing System. It also gives the overview of the E-Ticketing System which describes the deliverable of the project.

1.1 Overview

A City Bus E-Ticket System can help and solve these kinds of problems. By using this mobile based application will help passengers in daily basis ticket system.

Also, this system helps the students who are travelling by bus and using bus passes. Besides that, City Bus E-Ticket System will be easier for all type of passengers like students, handicapped, senior citizens and pass users. Furthermore, the system will reduce the customers fear of losing a paper ticket and handling the passes and pass identity card carefully.

Also, this system reduces the efforts of handling the register separately of each and every users i.e. daily ticket users, pass users and also reduces the efforts of handling the cash manually. Electronic ticketing system is shift traditional ticketing system because a lot of advantages which customer can get from e-ticketing system.

2. Literature Survey

In this section we will see the various studies and research conducted in order to identify the current scenarios and trends in Bus E-Ticketing System

Survey At	Description
MET's Institute of Engineering	Gathered information regarding different types of pass and how the details of every pass students are managed. Types of passes: service pass (monthly and three months pass) and student pass. (Refer figure 2.1,2.2,2.3)
Sinnar Depot	Surveyed the overall manual system flow with reference of registers.

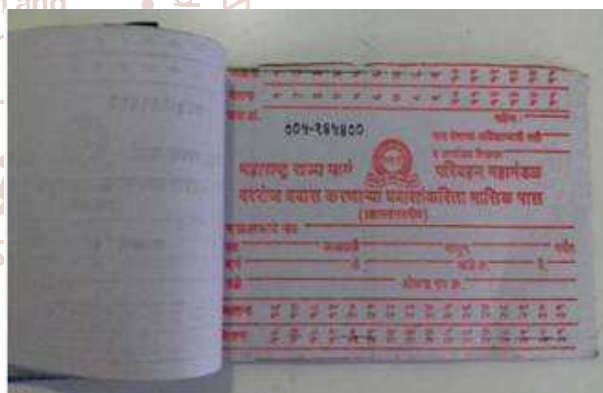


Figure 2.1: Literature Survey 1

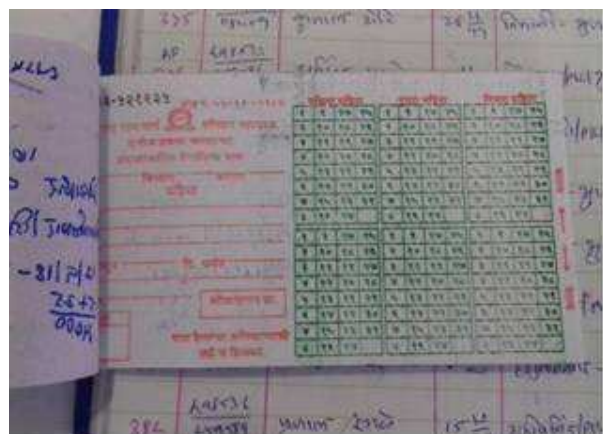


Figure 2.2: Literature Survey 2



Figure 2.3: Literature Survey 3

3. Problem Definition

Our proposed system is being designed to solve the problem of using traditional E-Ticketing system and there are many problems such as use of paper tickets, handling the pass and identity card carefully, handling the cash manually and maintaining of the records manually.

4. Design

In this Section explains the architecture of the system. We have also describe the Data Flow Diagram which explains flow of the project.

4.1 System Architecture

In the current scenario, there are the various hardware platforms available as shown above. Above these the Operating Systems reside. The application programming interfaces are above the Operating Systems and provide the interaction between the applications built on them and the underlying Operating System and the Hardware Platform.

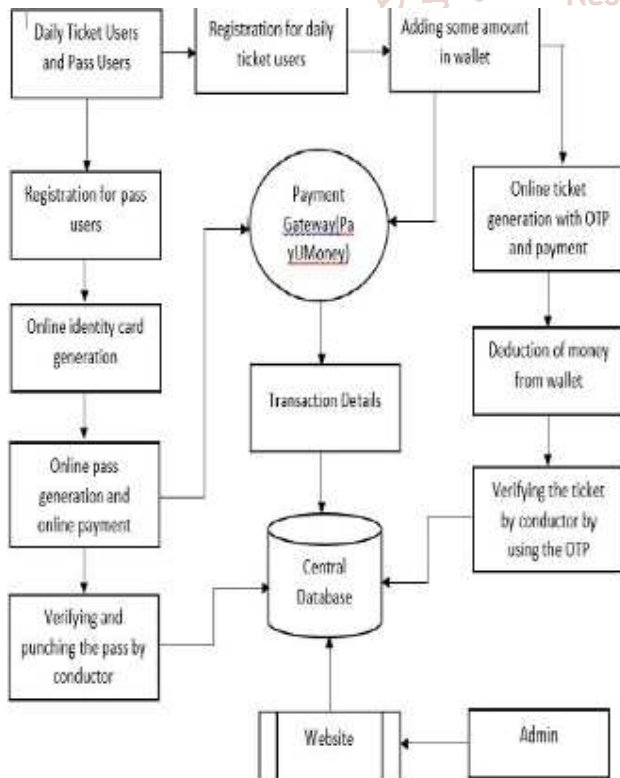


Figure 4.1: Bus E-Ticket System Architecture

4.2 Operating Environment

An operating system (OS) is a set of programs that manages computer hard-ware resources, and provides common

services for application software. The operating system is the most important type of system software in a computer system. Without an operating system, a user cannot run an application program on their computer, unless the application program is self-booting. An Application Programming Interface (API) is a particular set of rules (code) and specifications that software programs can follow to communicate with each other. It serves as an interface between different software programs and facilitates their interaction, similar to the way the user interface facilitates interaction between humans and computers. An API can be created for applications, libraries, operating systems, etc., as a way of defining their vocabularies and resources request conventions (e.g. function-calling conventions). It may include specifications for routines, data structures, object classes, and protocols used to communicate between the consumer program and the implementer program of the API.

4.3 Data Flow Diagram

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one.

While a DFD illustrates how data flows through a system, UML is a modeling language used in Object Oriented Software Design to provide a more detailed view. A DFD may still provide a good starting point, but when actually developing the system, developers may turn to UML diagrams such as class diagrams and structure diagrams to achieve the required specificity. 4.3.1 DFD Level 0

DFD Level 0 is also called a Context Diagram. It's a basic overview of the whole system or process being analyzed or modeled. Its designed to be an at-a-glance view, showing the system as a single high-level process, with its relationship to external entities. It should be easily understood by a wide audience, including stakeholders, business analysts, data analysts and developers.

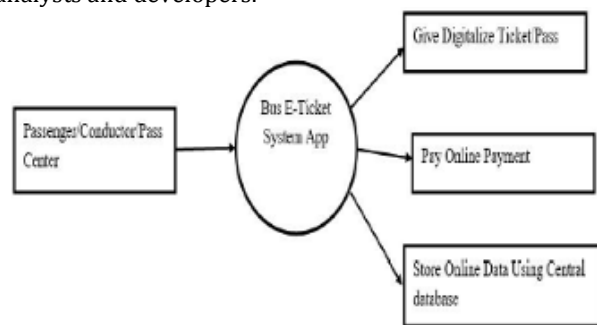


Figure 4.3: DFD Level 0

5. Modeling

This section includes the modeling technique which describes the Bus E-Ticketing System. It also describes the functionality of the different features of the Bus E-Ticketing System.

5.1 Class Diagram

The class diagram shows the building blocks of any object oriented system. Class diagram depicts a static view of the

model or part of the model, describing what attributes and behavior it has rather than detailing the methods of achieving operations. Class diagrams are most useful in illustrating relationships between classes and interfaces. Generalizations, aggregations, and associations are all valuable in reflecting interface, composition or usage and connections respectively.

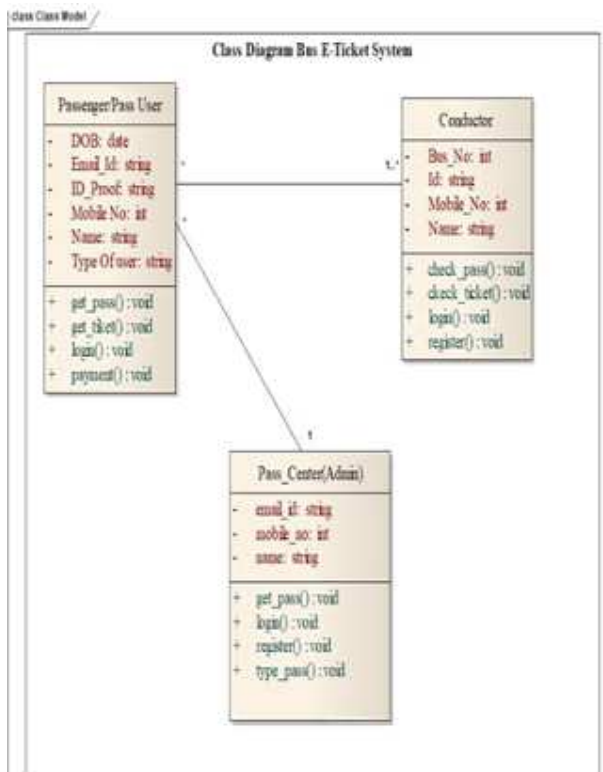


Figure 5.1: Class Diagram

6. Technical Specifications

6.1 Advantages

1. The effective way of transaction using in this system make payment easy and safe.
2. Making digitalized ticket and making digital identity card and pass for all type of pass users.
3. Time Saving.

6.2 Limitations

1. Internet is required for overall purpose of the system.
2. Not able to track the location of passenger while entering into the bus.

6.3 Hardware Requirements

- 4GB RAM minimum, 8GB RAM recommended
- Disk space: 2GB min
- 1.5GB for android SDK and Emulator system image
- 500MB for IDE

6.4 Software Requirements

- Android Studio
- Wampserver 64 bit (PHP version 7.0 and MySQL Version 5.7.21)
- JSON and PHP
- Adobe Dreamweaver CC 2015 Portable

7. Conclusion

The main and important aspect of this system is to change the overall scenario of the traditional or manual bus e-ticketing system. This system mainly focuses on the social issue of people who are facing the problem of travelling in day to day life. Searching and retrieving of records would be easier since there would be a search module that would filter all the needed records. Having a search module will lessen the time of looking for records that is done manually on the existing system. There are many aspects still to be assessed regarding the implementation of an online ticketing system in a bus depot, with special attention to the routines and facilities that the new system brings to the operational management of the whole depot system.

We believe that the methodological procedure described in this project can contribute for minimizing possible problems faced by bus depot in the process of moving from a conductor fare collection to an automated one. It should finally be highlighted that under the regulation, competition, planning, management and operation perspectives for the bus depot, Bus E-Ticket systems will probably facilitate and subsidize the decision making process. The Bus E-Ticket System should make easier bus depot process.