TICKET VERIFICATION USING QR-CODE

S. R. S. Report
Group No. : 80

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1. Introduction

This paper presents a low Cost And flexible "TICKET VERIFICATION USING QR-CODE". It consist of a QR-Code Generator which will raise a ticket that could be directly verified by the bus conductor through QR-Code Scanner. It will reduce the human efforts and it will increase the accuracy.

1.1 Purpose

There will be no black ticket issued by the conductor in the bus. It will reduce the human efforts and it will increase the accuracy which will help the costumers and there will be no chance of overloading in the bus. Always number of the passengers will be equal to the number of seats available in the bus.

1.2 Scope

(1) NetBeans IDE 8.0.2, Zxing, Swing and WAMP.

(2) IDE will serve us the purpose of maintaining the code in nice and maintainable manner. On the other hand WAMP will hold the Database for us.

The Title of our Software is "TICKET VERIFICATION USING QR-CODE". This idea will help a lot to the customer. The techniques we are using to modify whole BUS MANAGEMENT SYSTEM will reduce corruption due to black tickets.

QR-Code will reduce the human effort to check the ticket that is it valid or not through the database and this will help us to make BUS MANAGEMENT SYSTEM more precise.

1.3 Definitions, Acronyms, and Abbreviations

1) IDE: An integrated development environment is a software suite that consolidates basic tools required to write and test software.

2) QR-Code: A machine-readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera on a smartphone.

3) WAMP:It is a variation of LAMP for Windows systems and is often installed as a software bundle (Apache, MySQL, and PHP). It is often used for web development and internal testing, but may also be used to serve live websites.

4) NetBeans: NetBeans is an open-source integrated development environment (IDE) for developing with Java, PHP, C++, and other programming languages. It is also referred to as a platform of modular components used for developing Java desktop applications.

5) Zxing:The application Barcode Scanner is an Android app, from the open-source projectshort for Zebra Crossing), that allows an Android device with imaging hardware (camera) toscan barcodes or 2-D "graphical barcodes" and retrieve the data encoded.

6) Swing: Swing is a set of program component s for Java programmers that provide the ability to create graphical user interface (GUI) components, such as buttons and scroll bars that are Independent of the windowing system for specific operating system.

1.4 References

1) Java Programmer's Reference
2) Java Tutorials: www.tutorialspoint.com
3) IEEE Recommended Practice for Software Requirements Specifications – IEEE Std 830-1998
4) IEEE Standard for Software Test Documentation – IEEE Std. 829-1998.

1.5 Overview

Theremaining sections of this document provide a general description, including characteristics Of the users of this project, the product's hardware, and the functional and data requirements of The product. General description of the project is discussed in section 2 of this document.
Section 3 gives the requirements like functional requirement, non-functional requirements, and dataRequirements and constraints and assumptions made while designing the product. It also gives theuser viewpoint of product. Section 3 also gives the specific requirements of the product. Section3 also discusses the external interface requirements and gives detailed description of functional requirements. Section 4 is for supporting information.

2. General Description

Our software "**TICKET VERIFICATION USING QR-CODE"** is use to make work easy and Reduce human effort. It will take time to get implemented as we have to change our whole "BUS MANAGEMENT SYSTEM" but it will be very beneficial for saving time and money. It is based On Java Program that we will code.

2.1 Product Perspective

Our Project will make Ticket Booking Easy and Ticket Checking very easy using QR-Code generator (Software) and scanner (Hardware).

2.2 Product Functions

Project will mainly focusing on booking of tickets of bus through Online Portal and returning e-ticket with QR-Code printed on it through E-mail to the costumers who ever as booked the ticket.

2.3 User Characteristics

The characteristics of the ticket will be effected by the absence of Scanner Hardware at point where ticket will be checked. Presence of Hardware Scanner is mandatory for our project which scan the ticket QR-Code.

2.4 General Constraints

Ticket Booking Portal has to be active always. Where user can check the ticket availability.

2.5 Assumptions and Dependencies

If scanner is not available the ticket can also be checked using smart phones and smart devices which has camera and OS.

3. Specific Requirements

QR-Code Scanner

3.1 External Interface Requirements

3.1.1 User Interfaces:

Our project's user interface will solely be based on HTML, CSS and Java script. There will be three login frames Admin Login, Member Login. He Interface will also contain the information on how to contact the costumer helpline.

3.1.2 Hardware Interfaces:

1) Smart phones and smart devices which has camera and OS.

2) QR-Code Scanner.

3.1.3 Software Interfaces:

Operating System:
1) Windows 7, 8, 8.1,10
2) Ubuntu 14.04 to 17.04

3.2 Functional Requirements

3.2.1.1 Introduction:

First, User has to go to our online portal and sing-in/sign-up for login from that place user has to choose the bus and select the type of ticket and that ticket holder name, age, sex etc. Has to provide and then ticket will be save in database and a QR-code embedded ticket will be sanded to the user e-mail address.
Secondly, Then user has to show that e-ticket to the bus conductor and he has to check using QR-Code scanning hardware that the ticket is valid or not.

3.2.1.2 Inputs:

User has to input login information and the information of the passenger whoever is travelling through that ticket. (Name, Age, Sex, etc.)

3.2.1.3 Processing:

E-ticket will be generated using QR-Code though our software and will be pasted to the user ticket and sanded to the user e-mail address.

3.2.1.4 Outputs:

E-ticket will be generated by the software using whole programs and the detail of the user and will be send as an output to the e-mail address of the user which he/she has used during the booking of ticket.

3.2.1.5 Error Handling:

Error case can be like if the internet connection will be lost after the booking of the ticket and payment has been done but due to internet the e-ticket has not been delivered. So user can call to the helpline and asked then to resend the e-ticket again to the same e-mail address used during the payment.

3.5 Non-Functional Requirements

Every time that we plan around a software project, we tend to only think about main Functionalities and final goals, minimizing the perspective of what it really takes to be accomplish; although it is totally fine and natural, especially if you are planning to go for a LEAN software development approach. In many cases, what is not good about it, is that the final product is only measured in terms of our primary needs and goals, but those needs and awesome Functionalities imply a lot of non-functional requirements that are not usually contemplated Non-functional requirement specifies how the system behaves in terms of constraints or Prerequisites. We can list them with expressions like: it should be fast, should be secure, should be multi-platform, should be portable, should be scalable, etc. We, as professionals, need to keep all these non-functional requirements always into account, especially during the estimation/cost phase. It is part of our job to guide team members that arenew to the estimation and planning process. No matter what is the hurry, because even we can defer some of them, we should never forget them as they also take time and money to be fulfil. So we do not want surprises when we think we are about to be done with our project. I haveseen many projects fail because a neglected budget estimation due to non-functionalrequirements.

3.5.1 Performance

Performance becomes better as it will be easy use check the ticket through the hardware called QR-Code scanner.

3.5.2 Reliability

Only reliable for the user have internet connectivity and can use internet.

3.5.3 Security

Guarantees security as to edit and see the database only admin can login or the person has the Authority to change settings.

3.5.4 Maintainability

Easy maintenance as system remain same for all user at same time and company can change Setting through changing in database only.

3.5.5 Portability

Portably for all where we can access internet facility and can do payment through online Gateway.

3.6 Design Constraints

Internet connection speed should be good enough to use payment gateway for purchasing the ticket online.

3.7 Logical Database Requirements

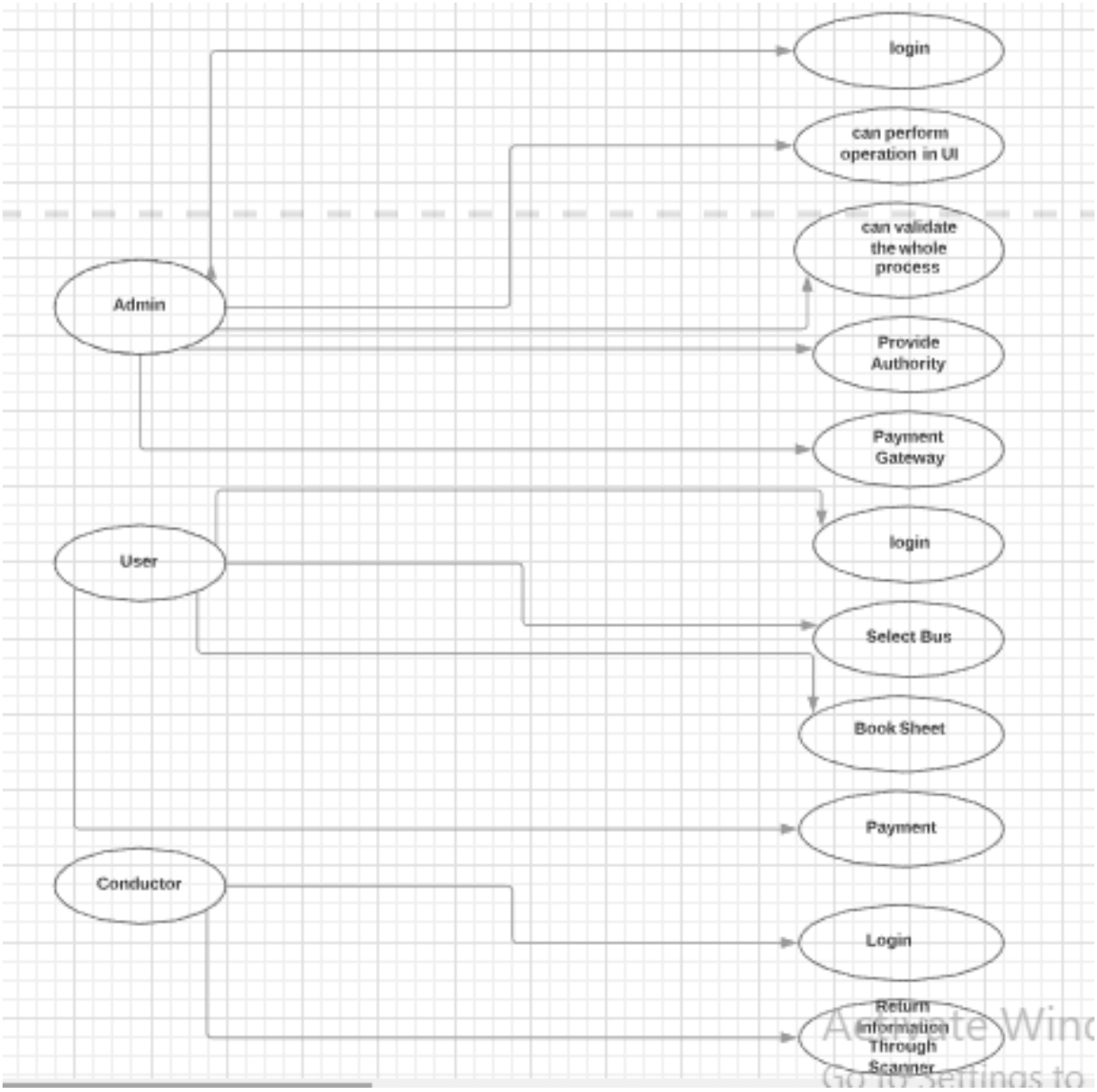
For checking the ticket bus conductor just has to scan the QR-Code and the information will be on the screen of the conductor to verify the ticket and every user who book a ticket will get a new key every time for every new ticket.

3.8 Other Requirements

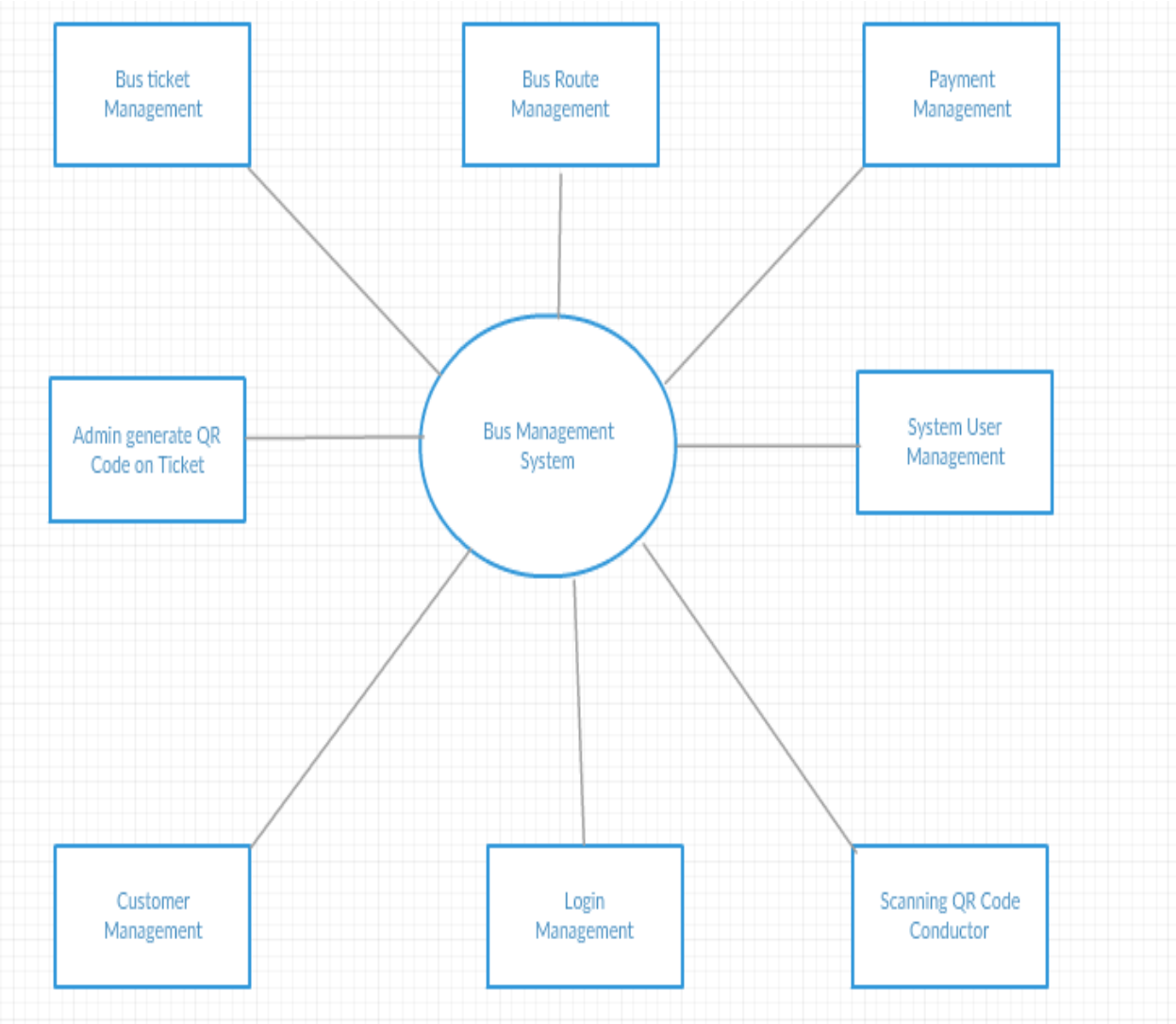
To make it more efficient and feasible, we have to use best internet connection in case to handle errors while booking a ticket.

4. Analysis Models

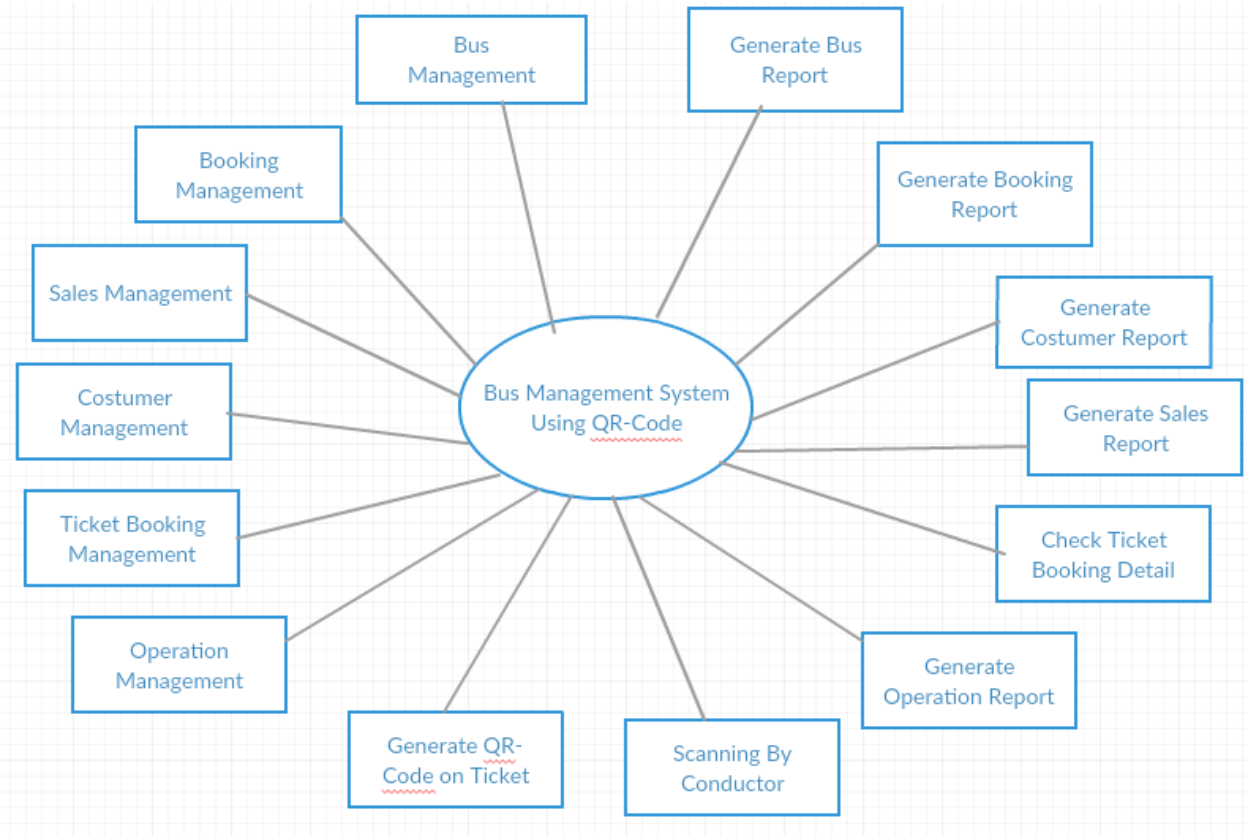
4.1 Use Cases Diagrams:



4.2.1 Data Flow Diagrams (0-DFD)



4.2.2 Data Flow Diagrams (1-DFD):



4.3 Entity Relationship Diagrams (ERD)