Software Requirements Specification Form

Bus Reservation System

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1. **Introduction**

Online bus reservation system is windows-based application. That work within centralized network. It provides facility to reserved seats, cancellation of seats and different type of enquiry which need an instant and quick reservation. E-ticket is the easier and quick easy to take bus. OBTRS is built for manage and computerize the traditional database, ticket booking and tracking bus and travel made easy. It maintains all data of users, bus details, reservation details, customer details. The domestic privatized Transportation Company that runs the Buses all over the Indian. This is a web application which provides Booking of tickets all over the country.

Traveling is a large growing business in Nepal and other countries. Bus reservation system deals with maintenances of records of details of each passenger who had reserved a seat for a journey. It also includes maintenance of information like schedule and details of each bus and assignment of driver with every scheduled bus.

This software “Bus Scheduling and Ticketing System (BSTS)” is software which is helpful for bus operators, who wants to operate many bus trips in a day. In this software a person can be register as a user and he can manage the bus, bus routes and the staff, booking details. He can add a bus and its details including bus route details. User can also add the details of the staff and their duty time in the system.

2. Problem Statement:

System that are using by the staff at the counter currently is an internal system and just used to sell the bus ticket at the counter. If we observe the working of the bus reservation system, we get to know that there are many operations, which they have to do manually. It takes a lot of time and causes many error. Due to this sometime a lot of problems occur and they face many disputes with customers. Bus scheduling, driver's assignment, ticketing seat allocation, daily income calculation etc. are very tedious job with manual bus reservation system. To solve the above problem, and further maintaining records of items, bus scheduling, seat availability for customers, price of per seat, bill generation and other things, there required computerized system for bus scheduling and ticketing.

By using this software, we can schedule the bus timing, sell tickets, and generate different reports with single click form different counters into centralized database server.

➢ Challenges of the Current System:

● Congestion of passenger in booking office leading to registration office using manual assigning of numbers which is waste of time.

● Lack of prompt updating-various changes to information like passengers details are difficult to make as paper work is involved.

● Inability to automatically schedule services, generate receipt and receive payments from passengers.

● Being unable to update the manual record

● Inability to retain record as they are lost if they are kept on wrongly.

● It is very tedious task for the people of remote areas to go towns or cities for booking seats.

➢ Objectives

- To provide a web-based bus ticket buying functions. Customer can buy bus ticket through the online system and no need to queue up to buy bus ticket at the counter.
- Easing bus ticket payment by obtaining a bank pin after payments is made to the various designated banks.
- To provide solution for effective ticket sales procedure.
- To generate and calculate daily sales income.
- To generate required report output for the purpose of providing information to employee and administration.
- To provide fast, user friendly and error free computerized system.
- Ability of customers to cancel their reservation.
- Admin user privileges in updating and canceling payment, route and vehicle records.

➢ Proposed Solution:

The solution to this problem is to create an online portal for buying bus ticket system. Customer can buy the bus ticket over the Internet, 24 hours a day, 7 days a week and the bus ticket can't be lost, stolen or left behind.

In addition, the online system lets the customers check the availability of the bus ticket before they buy bus ticket.

➢ Project Justification

As mentioned in the previous section, the online system is just getting its roots in the country's transport system. It is very important to company's customer, Bus Company and all. It is important to customer because customer can check availability of the bus ticket, cancel bus ticket and pay the bus ticket online. E-ticket is different with traditional paper ticket because e-ticket is safer, faster, reliable and cheaper. Besides that, this concept can be used by others bus company so that their customers will be satisfied. The profit for the bus company will be increased because the online system will attract more customers and no need to hire many staffs at the counter to sell bus roots based on the margin returns. This is done through bus performance comparison. The factors of comparison in this module include but not limited to: the route, operation. The factors of comparison in this module include but not limited to: the route, operational costs in a particular route and the number of breakdowns per bus.

➢ Project Scope

The system is web-based application. The users will gain access to the available buses per certain route and available seats by logging in through the customer's portal.

The staff will access the system by logging in via the staff portal where they can compare bus performance and monitor other related business performance issues.

The current bus reservation system relies on buying tickets form the conductor for commuting to and fro from a location through public transportation. The task can be tedious if the number of commuters is large. Also, payment in cash can be difficult if the payable denominations are uneven.

➢ THE OVERALL DESCRIPTION:

This covers the general description of factors that affect the product and its requirements. This section does not state specific requirements. Instead it provides a background for those requirements, which are defined in the specification requirements and makes them easier to understand.

➢ Overview:

Online bus ticket system:

Bus ticket booking during the offline era posed various difficulties to the customers as well as the bus operators. Offline ticket booking reduced the scope of customers to choose different options based on their travel criterion. It also increased the franchising cost for the bus operators. At the same time, the bus operators were also finding it difficult to monitor their bus seat filling information. Many small and medium bus service organizations do not have their own online bus ticket booking system. Online Bus ticketing system web portal is a total internet ticketing operations offering the benefit of total in-house management of bus schedules, ticket bookings, ticket sales, report generation, and other business functions associated with ticket sales (Melisa, 2007). It also offers the power of decision making to customers to make a ticket booking through bus operators' popularity, performance and ranking. This powerful Internet based ticket booking system that allows a full control of not only on the ticketing inventory, but also the site's content. The basic components of an Online Bus Ticketing System web portal that provides enhanced service to the bus operators and customers consist of the following:

- Capture of customer information such as name, address, phone number and e-mail address
- Price list
- Bus operators ranking
- Seating chart
- Loyalty Points/Redemption

- Search engine
- Payment information
- Organization's advertisement/slogan, phone number, fax number, and address
- Comments and suggestions section / option
- Reports

E-Ticket Reservation System:

E-ticketing could be extended to major entertainment and touristic sites and thus facilitate access to major points of interest within cities, making e-ticketing also interesting for travelers. Urban tourism is the fastest growing tourism sector in the world. In public transport, e-ticketing systems are not only means of payment but process huge amount of information which offer a large range of possibilities to make public transport easier to use, to manage and to control. They offer as well opportunities to introduce integrated pricing structure that are not easy to implement with traditional payment tools. Electronic ticketing technologies are classified according to the way they are used for payment. The closer the card is to the payment system, the more reliable the transaction is, but the more constraining it is for the user therefore, the long-term objective is for the customer to be able to pay for public transport without having to show or validate any card, relying on fully automatic fare payment. Public transport operators have been trying to replace paper-based tickets with electronic media, and many countries have implemented or are about to introduce e-ticketing systems. The main characteristic of ticketing is that tickets are sold and stored in electronic devices. However, the benefits of a comprehensive ticketing system for public transport operators are hard to quantify, as the main aim of e-ticketing is an improved service quality. In monetary terms, ticketing could reduce administrative costs as fewer cashiers are needed, fare processing times could be reduced and a better throughput of passengers could be allowed. Moreover, fare evasion and fraud resulting from cash handling could be reduced and better price differentiation would be possible. E-ticketing enables a better integration of alternative services into the scheme, making it more attractive for customers to use it. Due to accurate data on passenger flows it might also help to better exploit the network's capacities and to improve the user experience by setting up tailor-made services for individual passengers. Costs apply that can be easily quantified, e.g., investment and operation costs, particularly the initial one-off costs (e.g., readers, software and consultancy on the scheme design). Integrated schemes appear to be particularly cost intensive, as different applications need to be connected. Additionally, running costs for marketing, maintenance and

replacement need to be considered. Costs apply for training staff or resolving passenger disputes and for setting up a (regional or even national) clearing house responsible for centralized data and fare collection. The fear of outsourcing their expertise and responsibilities in ticketing to a third party of suppliers remains a worry to public transport operators

The perspective of the Products:

The “online bus reservation portal” is an stand-alone system.

Hardware Interfaces:

The “online bus reservation portal” will be placed all PC’s and smart phones.

Software Interfaces:

All databases for the Bus booking management system will be configured using 2021-2022. These databases include Bus seats and passenger information. These can be modified by the end users. The Bus database will include the bus number, seats, bus schedule and if the they are vacant and available or reserved. The passenger information database will contain all information of the passenger such as first name, Surname, age, ID Number, Gender, and Phone Number.

➢ Product Functions:

Reservations and Advance Booking System:

- Allows for typing in passenger information.
- Has a default seat number.
- When a passenger makes reservation, the seat will changes color from blue to either yellow or pink.
- Ability to modify a reservation.
- Records payment.

Tracking and Selling Ticket System:

- Tracks all tickets purchased.
- Charges the current journey as necessary.

General Management Services and Automated Tasks System:

- Creation of users and assigning passwords

Users Characteristics:

- Educational level of “online bus reservation portal” computer software-Low
- Experience of “online bus reservation portal” software –None
- Technical Expertise-Little

Assumptions and Dependencies:

- The system is not required to save generated reports
- Credit card and Debit card payments are included.

Apportioning of Requirements:

- The audio and visual alerts will be deferred because of low importance at this time.

3. Requirements:

Requirement Specification a complete description of the behavior of a system to be developed and may include a set of use cases that describe interactions the users will have with the software. In addition it also contains nonfunctional requirements. Non-functional requirements impose constraints on the design or implementation (such as performance engineering requirements, quality standards, or design constraints).

A.Functional Requirements:

Functional requirements define the specific functions that the system performs, along with the data operated on by the functions. The functional requirements are presented in scenarios that depict an operational system from the perspective of its end users. Included are one or more examples of all system features and an enumeration of all the specific requirements associated with these features.

- Registering User
- Updating Information
- Information validation
- Generating e-ticket
- Authentication of User
- Administration Control
- View Previous Details
- Search Bus
- Time Schedule for Different Routes
- Online Payment
- Booking Confirmation and Seat Reservation
- Ticket Cancellation
- Generating Bill

B.Non-Functional Requirements:

The non-functional requirements also address aspects of the system development process and operational personnel. It includes the following: Non-functional requirements address aspects of the system other than the specific functions it performs. These aspects include system performance, costs, and such general system characteristics as reliability, security, and portability.

- The system shall provide attractive graphical interface for the user.
- The system shall allow developer access to installed environment.
- The system shall target customer base.
- Reliability: The application should be reliable and it should generate all updated information in correct order.
- Availability: Application will be available and working properly for all the time (24 hours).
- Security

4. Data Flow Diagram (DFD):

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. A DFD shows what kind of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored.

The development of DFD'S is done in several levels. Each process in lower level diagrams can be broken down into a more detailed DFD in the next level. The Top-level diagram is often called context diagram. It consist a single process bit, which plays vital role in studying the current system. The process in the context level diagram is exploded into other process at the first level DFD.

Level 0:

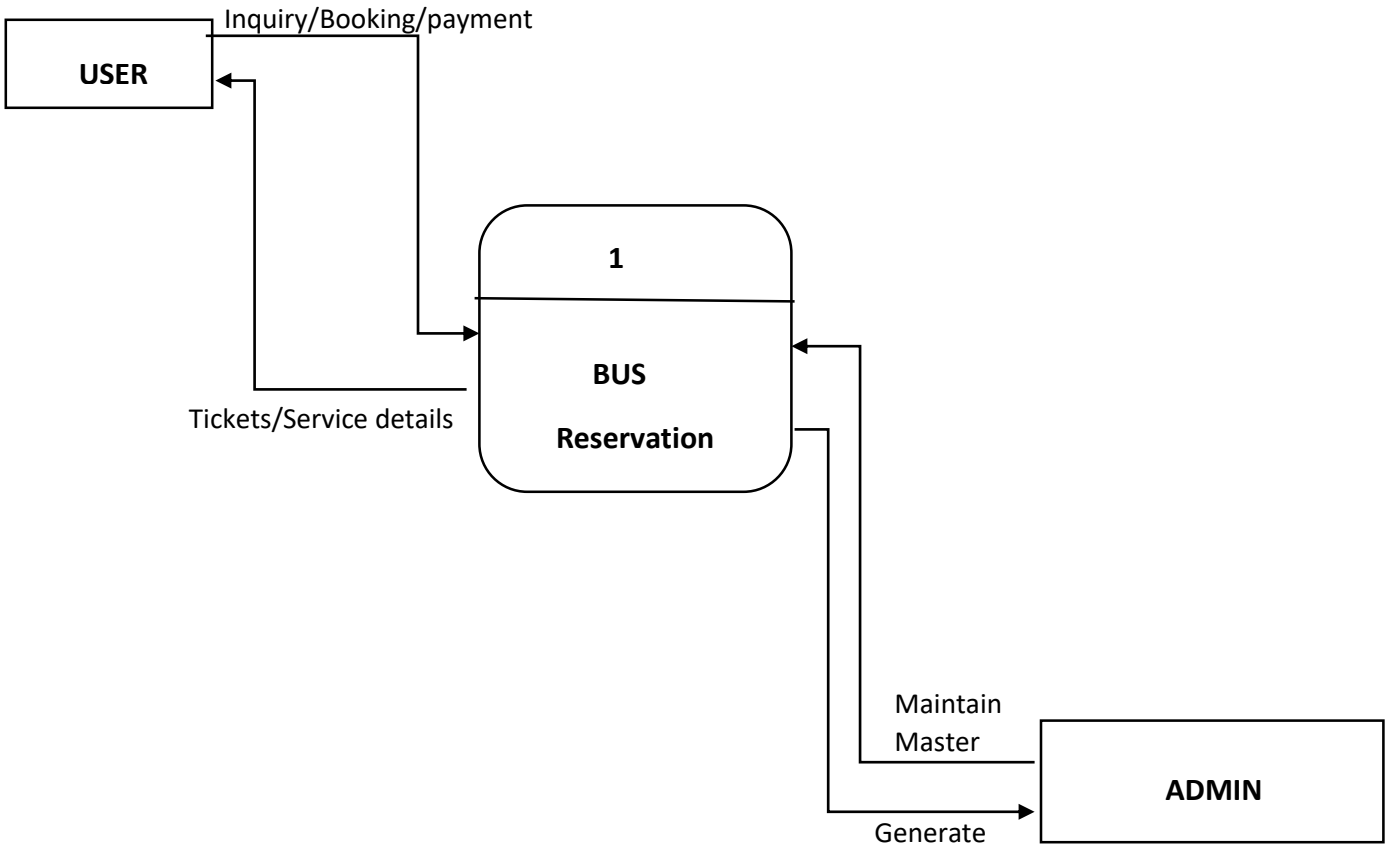

Figure 0: Context view of Online Bus Ticket Reservation System.

Level 2:

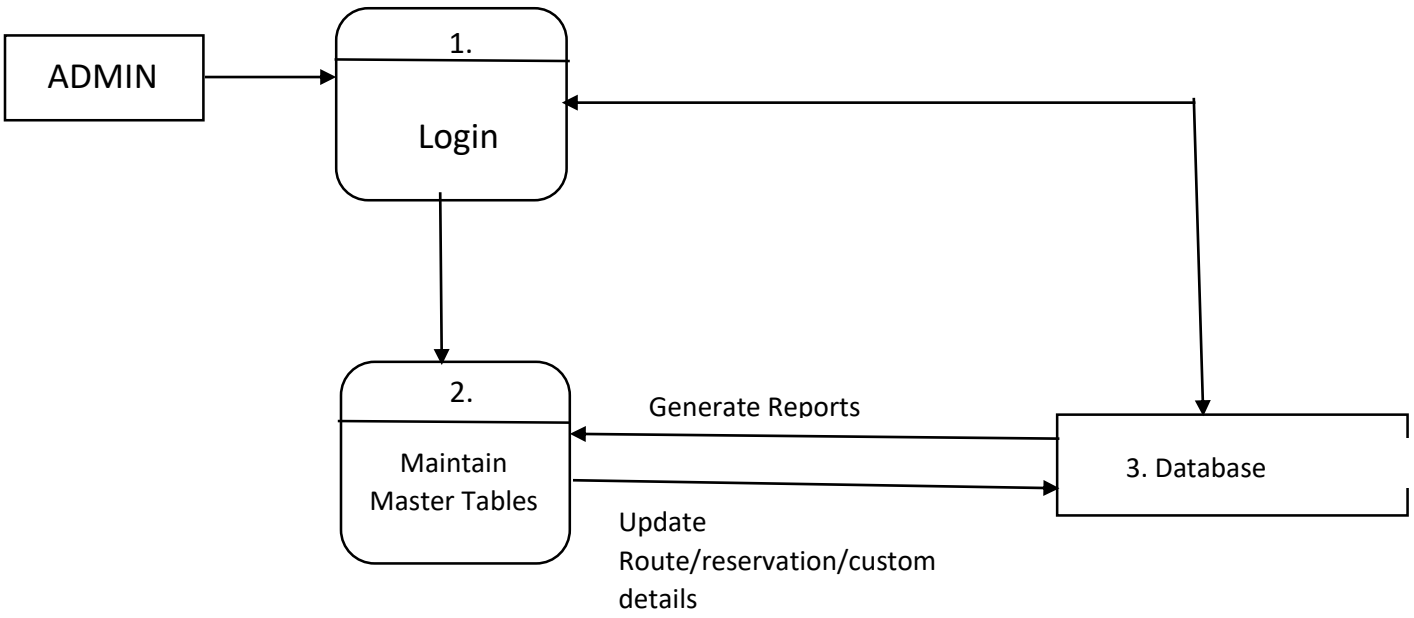

Figure 1: User view of Online Bus Ticket Reservation System.

Level 2:

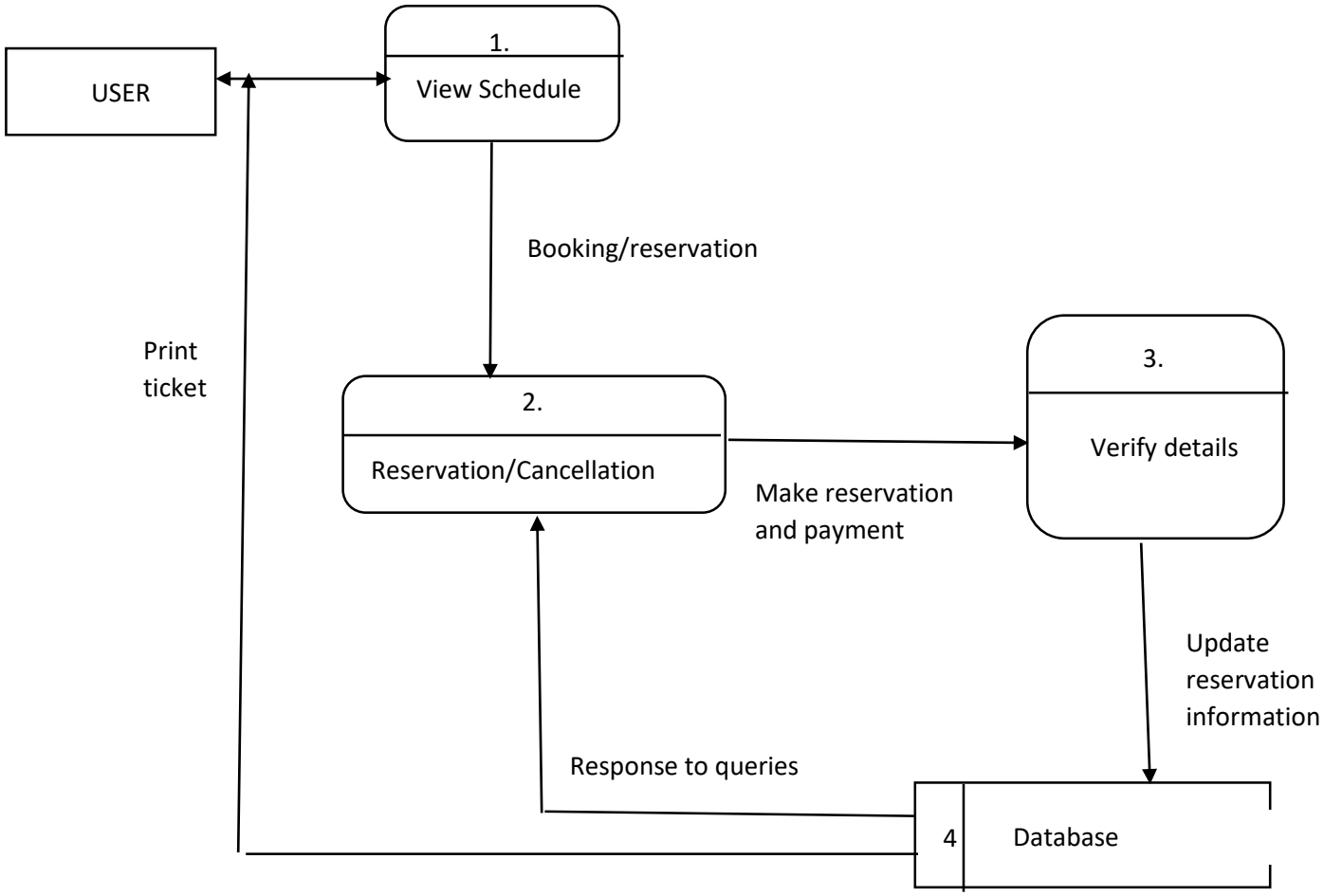

Figure 2: Admin view of Online Bus Ticket Reservation System

5. Conclusion:

It can be observed that computer applications are very important in every field of human endeavor. Here all the information about customer that made reservation can be gotten just by clicking a button with this new system, some of the difficulties encountered with the manual system are overcome. It will also reduce the workload of the staff, reduce the time used for making reservation at the bus terminal and also increase efficiency. The application also has the ability to update records in various files automatically thereby relieving the company's staff the stress of working from file security of data

6. References:

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