

Title: Bus Management System SRS

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**2. Problem Statement:**

A transportation company wants to start new services for their customers. They want to run two types of buses (A.C and Non-A.C) for GT road from Faisalabad to Lahore. They want to automate their bus management system. They want time and ticket management for their system.

**3. INTRODUCTION:**

**3.1 Background:**

The passengers have different requirements. Some passengers can afford to travel in A.C. bus, but there are some passengers who cannot do so due to financial or health issues. So, they prefer to travel on non-A.C. buses. And passengers do not want to go to the fixed destinations. Sometimes they may want to go to a place in between the source and destination. So, naturally they would not want to pay full price of the ticket (say price of a ticket from Lahore to Faisalabad).

Hence, a software is required to calculate price according to requirements of the customer (passenger) alongside managing the whole bus system.

**3.2 Investigation & Analysis Methodology:**

**3.2.1 System Investigation:**

The existing system does not calculate the prices. It was developed for non-A.C. type bus. It generates tickets for two fixed locations in Lahore and Faisalabad. It uses the “Oracle” database to store records of daily ticket sales. The receptionist simply can view very limited information. It’s a legacy system, as it does use the latest technology.

**3.2.2 Analysis Methodology:**

**3.2.2.1 Perform an analysis of the problem using object-oriented techniques:**

An external view of the Bus Management System including buses available, their routes, fare for each destination will be developed using Unified Modelling Language (UML). This System Requirement Specifications documents will form part of the documentation for the project. Some desired features of the new system include:

* The ability to search/view buses route
* Provide available bus list (A.C. & Non-A.C.)
* Evaluate the price of tickets, if a passenger wants to reach a place within to bus stops.
* Return fare if buses are not available due to natural reasons.
* Provide the total Number of tickets sold.

**3.2.3 Unified Modelling Language (UML):**

UML will be used again for the graphical representation and documentation of the design. The system will primarily concern itself with the registration process. A receptionist will fill out the information of the passenger, to book a ticket and allot him a bus, (includes Bus No, Seat No, Date & time In addition, the system will allow passengers to check bus lists, and status of booked tickets.

**Bus Management System**

**Use Case Diagram:**

**Diagram

Description automatically generated**

**3.2.4 Prototyping:**

Prototyping method will be used to implement a limited and functional prototype for the bus management system. The prototype will be a working example of part of the system for demonstration and proof of concept purposes only. The prototype will be presented to the implementation team.

**4. Overall Description:**

In Bus Management System everyone will be kept up to date. Passengers/Customer can easily view buses schedule, their driver info and can easily track the status of their booked ticket. When their bus is going to arrive and know if their bus is late (due to any reason).

**5. Scope of Software:**

The system will manage whole system of bus station. It will store and manage all information about buses, employees, and tickets sold. It will not make use of Internet. Rather all data will be stored on personal servers of the organization.

**6. Constraints:**

**6.1 Scalability:**

The Bus management system can’t book more tickets if no busses are available Error handling is also limited to few anticipated or common errors.

**6.2 Proprietary hardware and software:**

Bus Management system requires proprietary hardware and software to be operational.

**6.3 Batch updates vs. (close) Real-time updates:**

There is real-time update of a booked ticket in database

**6.4 Project Schedule:**

There is a six-month timeframe to implement the Bus Management System

**7. Operational Requirements:**

**7.1 Application Services and support:**

Programmers and application developers will have access to source code to address bugs or system enhancements when it is necessary. Network Administrator and DBA support is also required to maintain the system.

**7.2 Availability:**

System should be available 24/7. And chances of failure must approach to zero.

**7.3 Security:**

Only registered users are allowed to make changes in system such as enter information, delete, and update etc. No other users are allowed to access system. The customer can only view the information on his/her screen.

**8. Functional Requirements:**

* Receptionists get only name and destination from customer and enter it into the application.
* Charges of ticket vary according to bus stop.
* Authorized persons can edit and delete the data about Bus.
* System will generate a ticket for customer according to their requirements.
* Charges apply on customer are according to bus type (A.C Or Non-A.C).
* We also want to save data about buses that can be Bus No. Plate, and Driver and no of seats of the bus so that according to it we can sale tickets.

**9. Input Requirements**

**9.1 Customer name and destination:**

Customer name and destination are required so that according to it system allocates the ticket.

**9.2 Bus information:**

Bus information such as, bus driver name, Bus No. Plate, and owner and no of seats of bus, bus type are also required to show data about buses to customers.

**9.3 Unit Price:**

Unit price according to type of bus and distance travelled is required to calculate ticket price according to customer requirements.

**10 Diagrams**

**10.1 Class View**

Diagram

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**10.2 State Diagram:**

**Diagram

Description automatically generated**

**11. Output Requirements:**

**11.1 Transaction summary and confirmation:**

The Customer (Passenger) should be able to the check fares of each bus for different routes and different sources and destinations on his screen at reception.

**11.2 Exception reports:**

System should be able to generate exception report if any bus is out of service, seats of a particular bus are full, or there is not any bus available.

**11.3 Registration Reports and summaries:**

Registrar and University administrators must be able to extract summarized and rolled-up data into meaningful information. All records will be archived but accessible on demand.

The software should be able to provide reports about the buses dispatched, profit gained, and no. of customers travelled for a day.

**11.3 Ticket generation:**

System should be able generate tickets according to customer’s Requirements.

**12 Hardware Requirements:**

**12.1 Specs:**

* Memory: 4GB RAM
* Storage: 200GB Hard Drive
* Processor: intel core i3 or equivalent

**12.2 Production support systems:**

Web server computer(s) and related hardware support (back-up tapes, redundant drives, UPS, etc.)

**12.3 Network:**

Bus station network infrastructure (wired and wireless)

**13 Software Requirements**

**13.1 Client Operating Systems**

* Windows

**13.2 Mainframe system**

* SQL Server Database.