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Punbus SRS Final

Software Engineering (Lovely Professional University)

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Software Requirements Specification

For

PUNBUS -Online Bus Reservation System

Submitted To

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Submitted by

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in fulfillment of Software Engineering Assignment for the award of the degree of

BACHELOR OF TECHNOLOGY (B.Tech)

Mittal School of Technology

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1.Introduction

1.1 Purpose

This document describes the software requirements and specification for a low cost bus software Punbus online reservation.

1.2 Document Conventions: Font: Times New Roman 12

1.3 Intended Audience and Reading Suggestions

The document is intended for all the stakeholder's customer and the developer **(designers, testers, maintainers**). The reader is assumed to have basic knowledge of online booking system of flights and all of it services. Knowledge and understanding of UML(Unified Modelling Language) diagrams is also required.

1.4 References

1.4.1 Definitions

- **PUNBUS ONLINE RESERVATION**

A Punbus online reservation site allows customers to book online the bus tickets. It is one of the low cost bus service. The site connects with the customer to gather information, sends the transaction information to the central computer for validation and processing, and book the tickets according to the need of the customer.

- **Customer**

The holder of one accounts in website. A customer can consist of one or more persons or corporations, the correspondence is not relevant to this problem. The same person holding an account at a different site is considered a different customer.

- **Chartered Bus Booking**

A **charter bus** is a large coach that is hired by an organization to transport a group of people to a destination determined by the group's coordinator. Many organizations rely on **charter buses** due to convenience, cost efficiency, and safety. Punbus too provides this facility to the organizations.

- **Quick Assistance**

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It is portal consisting of all the contact details about the Head Office. Moreover, this portal of PUNBUS consists the contact details of all the branch offices also like Ludhiana, Hoshiarpur, Pathankot, Ferozepur, Amritsar etc. The details include the code of each branch office also.

1.4.2 Abbreviations

Throughout this document the following abbreviations are used:

- k: is the maximum reservations per day per account.
- m: is the maximum refund per reservation..
- n: is the minimum persons to permit a reservation.
- t : is the total reservation amount.

1.5 Project Scope

The software supports a computerized online booking system for Bus. The network enables customers to view and book buses via website and that you need not hover around the bus stand or go early for booking the tickets. You can book it by sitting in any place of the India. It collects information about a person, where he/she need to travel, type of bus (Leaving from, Going To, Date of Travelling, No of person travelling, etc,), communicates the payment information to the customer and company. The Company provide their web software for their own computers. The Company requires appropriate record keeping and security provisions. The website must handle concurrent accesses to the same account correctly.

2. Overall Description

2.1 Product Perspective

The web network does not work independently. It works together with the customers and the software rum by the network's site.

Communication interface: The Punbus online reservation website communicate with the systems via a communication network.

Software interface: The messages sent via the communication network are specific to the target customer software systems.

Hardware interface: The website will run on customer's computer.

User interfaces

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Customer: The customer user interface should be spontaneous, such that 99.9% of all new website users are able to complete their reservations without any assistance.

Punbus online reservation Security Personnel: The security personnel are responsible for informing whether the bus ticket has been booked successfully or not. There should be a simple interface that they can use to initialize the details of current and ongoing bus status for the ease of customer.

Maintainer: The maintainer is responsible for adding new bus of different routes and updating existing bus status.

2.2 Product Features

It collects information about a booking (e.g., Leaving from, Going To, Date of Travelling, No of person travelling,), communicates the payment information to the customer and company. The Company provide their web software for their own computers. The Company requires appropriate record keeping and security provisions. The website must handle concurrent accesses to the same account correctly.

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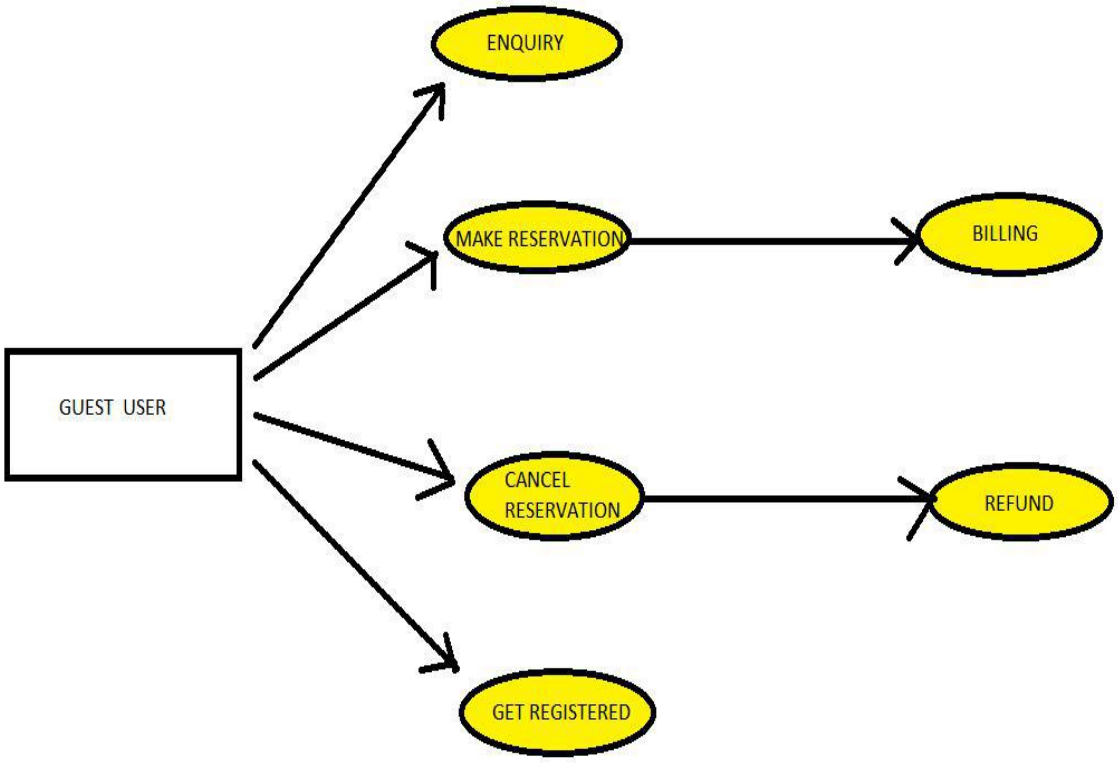

USE CASE DIAGRAM FOR GUEST USER

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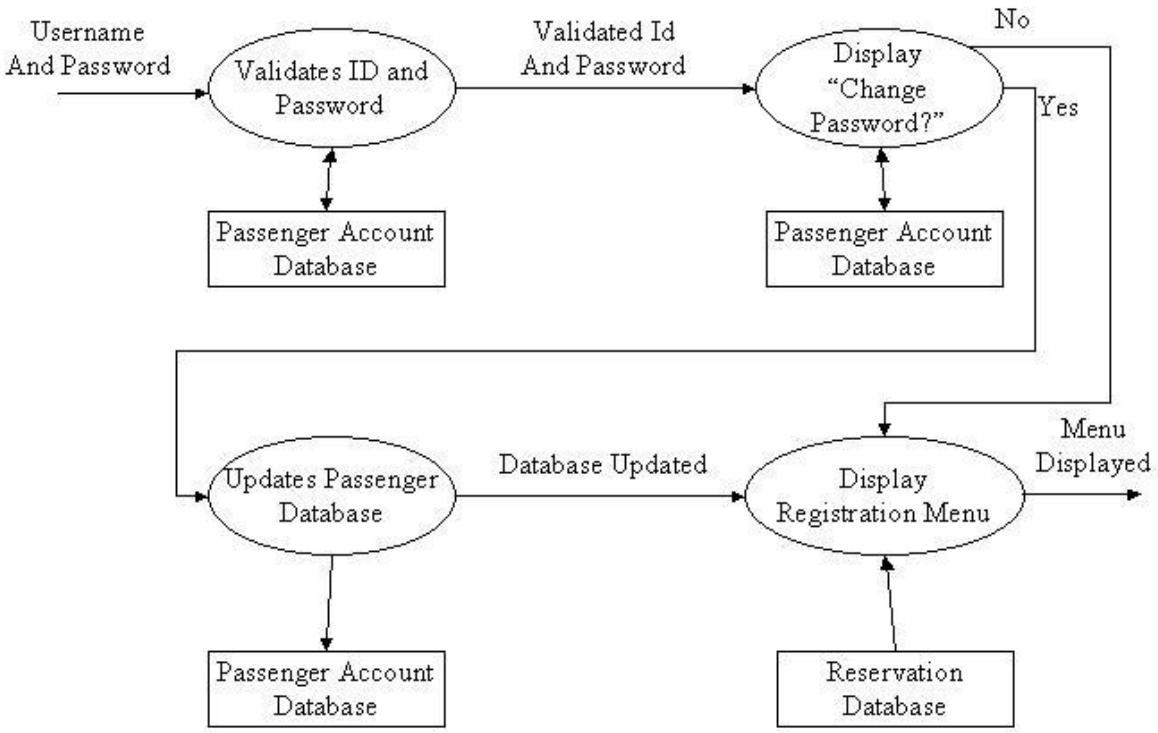
Function: Log In



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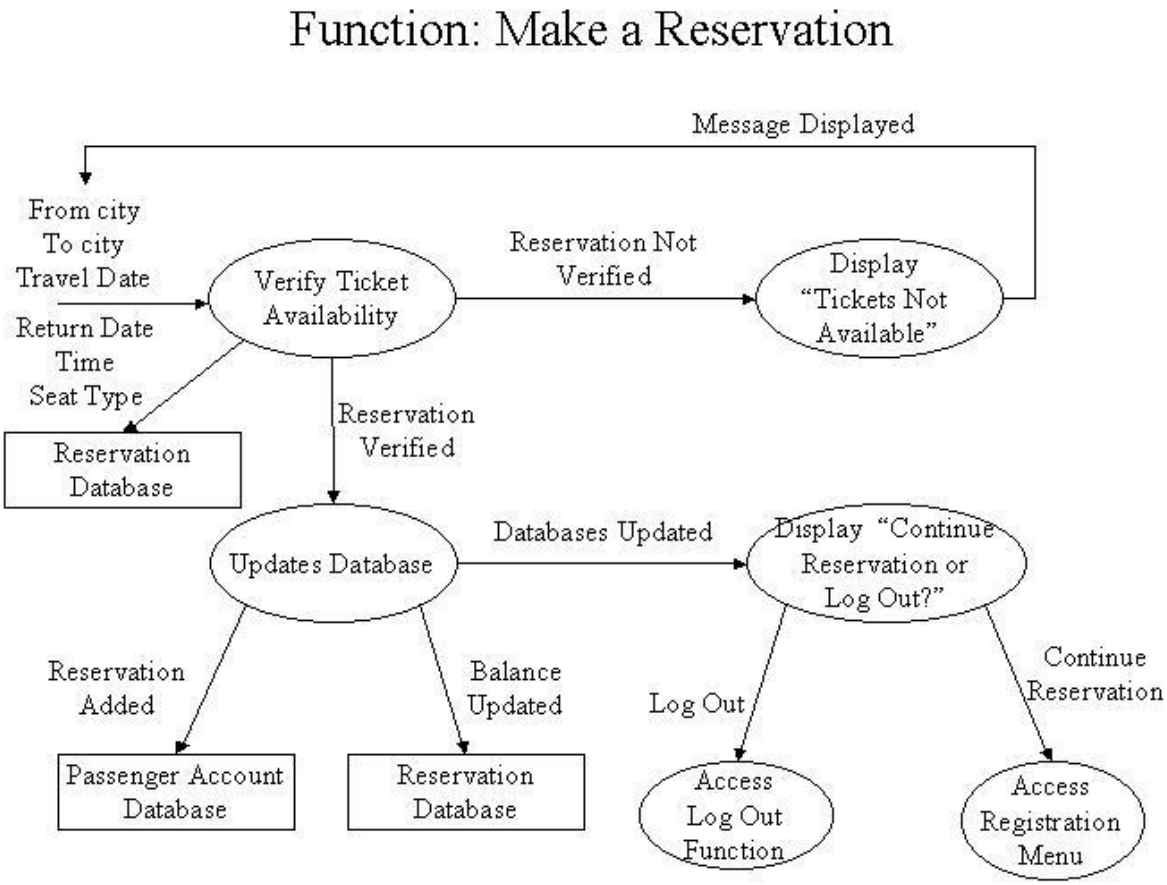

2.3 User Classes and Characteristics

Characteristics: There are several users of the Punbus online reservation :-

Customers are simply members of the general public with no special training just have to know how to use internet.

Punbus online reservation_security_personnel must be educated or experienced.

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Maintainers must be experienced network administrators, and to be able to connect new buses and customers to the network.

2.4 Operating Environment

The hardware, software and technology used should have following specifications:

- Ability to count total amount.
- Touch screen for convenience
- Keypad (in case touchpad fails)
- Continuous power supply
- Ability to connect to security personnel network
- Ability to take input from user
- Ability to validate user

Validate for Agent Login:

- Validate for Main Agent Username.
- Validate for Agent Username
- Validate for Agent Password.

Validate for Duplicate User Account:

- Validate that the user account is unique.
- If user account is duplicate, prompt error message, "User Account already exists"

Validate for Disabled Account:

- Validate that the account is not disabled
- If account is disabled, prompt error message, "Account has been disabled"

Validate for Locked Account:

- Validate that the account is not locked
- If account is locked, prompt error message "Account is locked"

Validate Password:

- Validate that the password is not blank

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- If password is blank, prompt error message "Please provide Password"
- Validate that the password entered matches the password on file
- If password does not match, prompt error message "Password is Incorrect"

Lock Account:

- If number of consecutive unsuccessful logins exceeds three attempts, lock account
- Maintain Consecutive Unsuccessful Login Counter
- Increment Login Counter
- For every consecutive Login attempt, increment logic counter by 1
- Reset login counter to 0 after login is successful.
- Get Reservation Information

2.6 Assumptions and Dependencies

- Hardware never fails
- Limited number of transactions per day

3. Specific Requirements

3.1 Functional Requirements

3.1.1 Requirements of the Punbus online reservation

The requirements for the online booking buses website Punbus online reservation is organized in the following way. General requirements, requirements for authorization, requirements for a transaction.

General

Functional requirement 1:

- **Description:** Initialize parameters t, k, m, n.
- **Input:** initialized with values of t, k, m, n
- **Processing:** Storing the parameters.
- **Output:** Parameters are set.

Functional requirement 2:

- **Description:** If no bus is available, the system should not display anything.

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Functional requirement 3:

- **Description:** If the bus is full, no further reservation should be accepted. An error message is displayed.
- **Input:** A bus is selected.
- **Processing:** The amount of cash is less than t.
- **Output:** Display an error message. Return cash card.
- **Authorization**: The authorization starts after a customer has entered his choice for booking.

Functional requirement 4:

- **Description:** The server has to check if the entered card is a valid cash-card.
- **Input:** Customer enters the cash card.
- **Processing:** Check if it is a valid cash card. It will be valid if

❖ The information on the card can be read.
❖ It is not expired

3.1.2 Requirements of the server

Authorization

The server gets a request from the client computer to verify an account.

Functional requirement 1:

- **Description:** The server checks if the user name and password is valid
- **Input:** Request from the website to verify username and password
- **Processing:** Check if the user name is present or not.
- **Output:** Valid or invalid username and password.

Functional requirement 2:

- **Description:** If it is not a valid user, the server computer will send a message to the client computer.
- **Input:** Invalid user details
- **Processing:** Process message
- **Output:** The server sends the message “username and password doesn’t match”.

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Reservation

The server gets a request to process a reservation from the website.

Functional requirement 3:

- **Description**: After a request, the server computer processes the reservation.
- **Input:** Request to process a reservation on an account.
- **Processing:** Process reservation (together with the software of the website.) Update the k value for amount.
- **Output:** If the reservation is booked, the server sends the message "reservation booked" to the website. If not, it will send "reservation failed"

Functional requirement 4:

- **Description:** Update account after bus is booked.
- **Input**: Response from website about booking of bus.
- **Processing:** Updates account.
- **Output:** New account record.

Functional requirement 5:

- **Description:** The website only provides security for their own computer and their own software.

4. External Interface Requirements

4.1 User Interfaces

The customer user interface should be intuitive, such that 99.9% of all new users are able complete their transactions without any assistance

4.2 Software Interfaces

The software should have following specifications:

- Ability to read the user name and password.
- Ability to count total amount
- Ability to display images
- Ability to connect to website network
- Ability to take input from user
- Ability to validate user

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4.3 Hardware Interfaces

The hardware interfaces are specific to the website software systems**.**

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- It must be able to perform in adverse conditions like high/low temperature etc.
- Uninterrupted interrupted connections
- High data transfer rate

5.2 Safety Requirements

- Must be safe from hacker and viruses
- Must be safe from unauthorized access

5.3 Security Requirements

- Users accessibility is censured in all the ways
- Users are advised to change their Password on first use
- Users are advised not to tell their PIN/OTP to anyone
- The maximum number of attempts to enter PIN/OTP will be three

5.4 Software Quality Attributes

- Availability
- Security
- Maintainability

5.4.1 Availability: The website network has to be available 24 hours a day.

5.4.2 Security: The Punbus online reservation network should provide maximal security. In order to make that much more transparent there are the following requirements:

1. It must be impossible to plug into the network.

5.4.3 Maintainability: Only maintainers are allowed to connect new users to the network.

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6. Other Requirements

6.1 Data Base

The website must be able to use several data formats according to the data formats that are provided by the databases. A transaction should have all the properties of a data base transaction (Atomicity, Consistency, Isolation, Durability).

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