Software Requirements Specification (SRS)

Contents

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For Students' Auditorium Management Software

1. Introduction

1.1 Purpose

The purpose of this document is to provide a detailed Software Requirements Specification (SRS) for the Students' Auditorium Management Software. The software requirements are outlined in this SRS, both functional and non-functional. This program, which runs independently, is made to manage different kinds of social and cultural events in the students' auditorium.

1.2 Scope

The system will provide the show manager, salespersons, spectators, and accounts clerk with the ability to manage and view the information related to the events in the auditorium.

The Students' Auditorium Management Software consists of the following major functions:

- Maintaining and updating the information on various shows held at an auditorium.
- Adding new events and editing existing ones based on the auditorium's availability.
- Allocating Balcony and Ordinary Seats for sale or to offer as complementary gifts. Also fixing the price of different seats.
- Booking and canceling the tickets by spectators through a sales person.
- Querying for seat availability.
- Booking available seat for a particular show.
- Recording all the transactions including the sales person ID.
- Displaying and printing the balance sheets of various shows for every year.

1.3 Definitions, Acronyms, and Abbreviations

- SRS: Software Requirements Specification
- VIP: Very Important Person
- PC: Personal Computer

1.4 References

1. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

2. SE Lecture (Provided by Prof. Judhishtir)

1.5 Overview

The Students Auditorium Management System specifications are thoroughly examined in the remaining sections of the SRS. The general factors, such as user characteristics and project constraints, that impact the Students Auditorium Management System and its requirements are presented in Section 2 of the SRS. The software's precise functional, performance, system, and other related requirements are described in detail in Section 3. The functional requirements of Show Manager, Sales Person, and Accounts Clerk are presented in Section 4 of the SRS.

2. Overall Description

2.1 Product Perspective

The Students' Auditorium Management Software is designed to replace the current manual process of managing auditorium events and seat bookings. The system will automate ticket sales, cancellations, refunds, and the generation of balance sheets for each show and annually. It will use open-source technologies like Linux, MySQL, and Apache. This software is designed to edit existing events and add new ones based on the Auditorium's availability. Additionally, the user can set aside Ordinary Seats and Balconies for gift-giving or for sale. Additionally, a user can set the cost of various seats for an event. For an event, users can reserve seats and cancel those they have already reserved. Printed tickets are sent to the user for booking and cancellation. It also sends notifications regarding seat reservations and cancellations. For an event, users can reserve seats and check the quantity available. Additionally, it creates balance sheets for the entire year in addition to each event.

2.2 Product Functions

2.2.1 Ticket Booking

This feature allows the salesperson to book a ticket for a spectator whenever one requests one by providing them with the necessary details, such as the number of seats needed, the kind of seats, and

the show for which tickets are needed. Then the ticket is generated which contains the show details, seat numbers, the amount payable, and the transaction ID. The database is updated accordingly

2.2.2 Canceling tickets

Input : the ticket's transaction ID to be cancelled.

Processing: After searching the database for the transaction ID, the sales representative cancels the seats. At that point, a printed acknowledgment receipt is generated. The amount is returned in accordance with the guidelines established by the show manager. The database is updated appropriately.

2.2.3 updating Databases

When is a ticket is booked or canceled by a spectator, the database is updated accordingly for that particular show in order to manage seat availability queries and also further ticket booking.

2.2.4 Query management

The spectator can query the availability of different classes of seats for a particular show.'

2.2.5 Balance sheet Generation

After the show, the account clerk creates a balance sheet for each performance. Additionally, he creates a year-end balance sheet that only the Show Manager can access. The only source of income is ticket sales, and there are numerous expenses.

2.3 User Classes and Characteristics

The primary users of the system are:

1. **Show Manager**: There is only one show manager in the auditorium, and his duties include overseeing the account clerks and salespeople who work under him and running each show without a scheduling conflict.
2. **Salesperson**: They are responsible for booking the tickets on demand of the spectators and also answer their queries regarding the seat availability.
3. **Spectator**: He can query for the seat availability. He can book tickets and cancel tickets only through the sales-person. He is the only source of income for a show.

4. **Accounts Clerk**: They are responsible for generating the balance sheets showing the expenditures, sales income and artists payments for every show and also for for every year, only on the demand of the Show Manager.

2.4 Constraints

1. A balcony seat can never be more expensive than an average seat.
2. The auditorium has a set number of regular seats and balcony seats available at any given time.
3. A viewer's request for a certain number of seats cannot exceed a cap that the show manager had previously established.
4. It is not possible to transfer tickets to another spectator.

2.5 Design and Implementation Constraints

The system must be designed to operate on open-source platforms, specifically Linux and MySQL. This is to minimize costs.

2.6 Assumptions and Dependencies

It is assumed that the users have basic knowledge of computers and can operate the system with minimal training.

3. Functional Requirements

3.1 Ticket Transaction

Introduction:

A booking or a cancellation can both be considered ticket transactions. A salesperson is able to do it only upon a viewer's request.

Inputs:

1. Number of balcony seats required
2. Number of ordinary seats required
3. Show for which tickets are required and also the spectator details
4. In case of cancellation, the ticket transaction ID.

Processing

1. The SAMS queries the database for the seat availability for that show and also calculates the total amount payable for those seats
2. The SAMS stores the ticket transaction ID against the salesperson ID for his commission
3. The SAMS updates the database with the seats being displayed as purchased
4. The SAMS generates a ticket receipt to be printed.
5. For cancellation, the SAMS removes the purchased history of those seats from the database, puts them for sale again and generates the cancellation acknowledgment receipt.

Output

1. A ticket with all the details is printed.
2. In case of cancellation, acknowledgment receipt is printed and then money is refunded as per Terms & Conditions laid by the Show Manager

3.2 Viewing Balance Sheets

Introduction

The Show Manager can query the sales for a particular show and also for the balance sheet that contains income and expenditures.

Input

1. The log in ID of the manager and his password.
2. Show or the year for which he wishes to see the details. Processing
3. The SAMS looks into the database and generates the balance sheet based upon the ticket sales by the sales persons and also the expenditures entered by the account clerks.

Output

The Balance Sheet is displayed on the screen in the form of a table for a show or for a year as requested.

3.3 Updating Employees

Introduction

The database of employees is updated only by the Show Manager, when he adds or fires an employee.

Input

1. The employee ID, if he has to be fired
2. Else the details of the new employee to be added

Processing

1. If an employee is to be fired, his employee ID and all other details, excluding his sales in the past are removed from the database.
2. If an employee is to be added, the database adds his details to the database.

Output

A new employee ID is generated and access is granted to the specified areas.

3.4 Setting Show Details

Introduction

The Show Manager can enter, modify the show timings, prices of seats and seats available for booking.

Input

The show details such as name, timings, cost of balcony and ordinary tickets, number of seats for booking, seats for VIPs and complementary seats.

Processing

1. The SAMS looks into the database and looks for any time or date clashes with any other show.
2. The SAMS updates the show details or enters them into the database.

Output

The updated database is generated. It is further used by the sales persons to sell tickets and also by accounts clerk to enter the expenditure details.

4 External Interface Requirement

4.1 User Interfaces

The system will feature a user-friendly graphical interface where show managers, salespersons, and accounts clerks can interact with the system for their respective functions. Spectators will have a simple booking and cancellation interface.

4.2 Hardware Interfaces

A computer with a monitor, a keyboard and a mouse suffices. A printer must be connected to the computer to print the ticket.

4.3 Software Interfaces

The system will interface with Linux OS, MySQL database, and Apache Web Server to manage data storage and retrieval.

4.4 Communication Interfaces

Internet connection is necessary for storing data in online database so that other users can also share data.

5. Performance Requirements

5.1 Bank Transactions:

The system should be able to handle **100 transactions per minute**, including bookings, cancellations, and payment processing, without errors or slowdowns.

5.2 Availability:

The system should have an uptime of **99.5%** over any given month, allowing for minimal downtime for maintenance.

5.3 Data Access and Retrieval:

Queries regarding seat availability, show status, and financial reports should be processed in less than **2 seconds** on average.

6. Non-Performance Requirements

6.1 Availability

The software is available for use anytime with the software installed, provided ticket booking and cancellation are available only within a stipulated duration as set by the Show Manager.

6.2 Performance

High level of performance requires high speed network and high level of connectivity.

6.3 Reliability

The available server must be reliable and the network connectivity for all the computers used by Show Manager, salespersons and account clerks should be proper for smooth flow of all operations and data.