Students' Auditorium Management Software (SAMS)

Software Requirement Specification

Group 59

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First Version, 23 March 2016.

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1. Introduction

1.1 Purpose

This SRS describes the software functional and non-functional requirements for the Students' Auditorium Management Software (SAMS). It explains the functional features of the software, along with interface details, design constraints and related considerations. This software is designed to efficiently manage the various shows conducted in a student auditorium. The SRS is intended for spectators and managers of an auditorium. Unless otherwise stated, all requirements specified here are high priority and committed in this software.

1.2 Scope

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

- Maintaining and updating the information on various shows held at an auditorium.
- Booking and canceling the tickets by spectators through a sales person.
- Hiring and firing an employee.
- Querying for seat availability.
- Displaying and printing the balance sheets of various shows for every year.

1.3 Definitions, Acronyms and Abbreviations

1.3.1 Ticket Receipt

A Ticket Receipt is printed after its generation. It contains the information like show name, show timings, show date, spectator name, ticket transaction ID.

1.3.2 Balance Sheet

A balance sheet contains the incomes and expenditures on a much detailed note. Income is generated from only tickets. Expenditures include artists' payments, logistics etc.

1.3.3 Employee ID

Every employee of the auditorium Show Manager, sales person, accounts clerks are given a unique employee ID, which they can use to access the software along with their password.

1.3.4 Transaction ID

Every ticket booked has its own transaction ID. This is a unique number and is used while cancellation and also to set it against the sales person ID so that he gets the commission for that.

1.3.5 SAMS

Students' Auditorium Management Software

1.3.6 SRS

Software Requirement Specification

1.4 References

Since we found so much good information about pretty much everything we wanted to know about, we will just create a remark.

(R) SRS template of Libra: An Economy-Driven Cluster Scheduler

(R) Various templates from internet for UML diagrams.

1.5 Overview

The rest of the SRS examines the specifications of the SAMS in detail. Section 2 of the SRS presents the general factors that affect the software and its requirements, such as user characteristics and project constraints. Section 3 outlines the detailed, specific functional, performance, system and other related requirements of SAMS.

2. Overall Description

The product described in this document is a software for Student Auditorium Management.

2.1 Product Perspective

The Student Auditorium Management System is a new system that replaces the current manual processes of ticket booking for a show and generation of tickets with their seat numbers. The context diagram illustrates the external entities and system interfaces for this release. The system is expected to evolve over several releases.

2.2 Product Functions

The set of functions that are performed by the software are documented below:

2.2.1 Ticket Booking

Whenever any spectator requests for a ticket, this function prompts the sales person to book the ticket for the spectator by getting the information regarding the required no.of seats and the type of seats, the show for which tickets are required. Then the ticket is generated which contains the show details, seat numbers, the amount payable, and the transaction ID. The database is updated accordingly.

Request the tickets required for a spectator

Input: Number of tickets and their type
Processing: The database is looked through for seat availability.

Generate the Ticket

Process: A ticket receipt containing the transaction ID of the sales transaction, the name of the spectator, number of seats, unit price, item price and the total amount payable after adding the taxes

is printed is generated and then printed.

2.2.2 Canceling tickets

Input: The transaction ID of the ticket to be canceled. Processing: The sales person goes through the database, looks up the transaction ID and then cancels the seats. An acknowledgment receipt is generated then and printed. Amount is refunded as per the Terms & Conditions set by the Show Manager. Database is updated accordingly.

2.2.3 Update Databases

Whenever an employee is hired or fired the database is updated accordingly by either adding an new employee ID and granting him access to sales or removing the employee ID to be hired. Even 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

Queries by Spectator

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

Queries by Show Manager

The Show Manager can query any time about the percentage of seats booked for various classes of seats and the amount collected in each case. The commission payable to each sales person and also the amount collected by each sales person can be queried by the show manager. The different types of balance sheets can also be queried by only the Show Manager.

2.2.5 Balance Sheet Generation

A balance sheet is generated for every show by the account clerk after the show finishes. He also prepares a balance sheet for an year and gives its access to only the Show Manager. There are many expenditures and the only income being ticket sales.

Ticket Income

The amount of income generated by the sales of tickets for a show is included.

Sales Person Commission

The commission payable to each sales person as per earlier agreement between the Show Manager and sales-person comes under the expenditure.

Artists' Payments

The artists who have performed for a show have to be given remuneration and this is done by the Show Manager. This comes under expenditure.

Other expenditures

The auditorium needs logistics for the performance and they may be rented for a particular show. These are also included in expenditures.

2.3 User Characteristics

2.3.1 Show Manager

The auditorium contains one Show Manager who is responsible for managing every show without any time clash and supervising the sales persons, account-clerks working under him. He grants permission to his employees to the software.

2.3.2 Sales Person

They are responsible for booking the tickets on demand of the spectators and also answer their queries regarding the seat availability. He also receives a commission for the tickets he has sold.

2.3.3 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.

2.3.4 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.

2.4 Constraints

1. An ordinary seat cannot be overpriced than a balcony seat.
2. There are fixed number of balcony seats and ordinary seats in the auditorium at any given time.
3. The number of seats requested by a spectator cannot go beyond a specific value, set earlier by the Show Manager.
4. Show Manager cannot be fired.
5. Tickets cannot be transferred over to another spectator.

2.5 Assumptions and dependencies

- It is assumed that there computers and printers are provided to the salespersons for ticket booking.
- Only one show manager is appointed for an auditorium.

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

Show Manager Interface

The SAMS screen displays the interface:

- Log in
- To add or fire an employee and also handle their log in accounts.
- Fix the timings of a show.
- Fix the price of the two categories of seats depending on the popularity of a show.
- Determine the number of balcony and ordinary seats that can be put on sale,
- Query percentage of seats booked for various classes of seats and the amount collected in each case.
- Query commission payable to each sales person and also the amount collected by each sales person.
- Access the different balance sheets produced

Sales Person Interface

The SAMS screen displays the interface:

- Log in.
- To book tickets on the request of spectators.
- Cancel the tickets booked by a spectator.
- Generate the ticket receipt

Accounts-Clerk Interface

The SAMS screen displays the interface:

- Log in.

- Enter the various types of expenditures incurred for a show including payment to artists.

3.1.2 Hardware Interfaces

For the software to function properly, the printer should print the ticket generated by the sales-person.

3.1.3 Software Interfaces

Log In

- The SAMS prompts for an employee ID and password.
- After getting the data, the SAMS opens the particular user interface, depending on the employee ID.

Seat Availability Query

- The Show Manager or a spectator (through a sales-person) queries for the seats available for the show.
- The SAMS determines the seats by going through the database.
- The SAMS displays the percentage of seats available and the total seats available including the type of seats.

Add or Fire an Employee

- The Show Manager wants to add or fire an employee (either a salesperson or an account clerk).
- He is prompted to enter the employee IDs he want to fire and then the SAMS updates the database accordingly, deleting that particular employee ID.
- Else he is prompted to enter the full details of the employee, if he wants to add a new employee.
- Grants the access to the new employee with an employee ID.
- The SAMS updates the database accordingly.

Fix Show Timings

- The Show Manager is prompted to enter the show details like event type and also the date and timings.
- The SAMS processes the database and displays if there was a show previously allotted at that particular time.
- Else the SAMS updates the database with the new show and its timings.

Set Show Details

- The Show Manager is prompted to enter the number of seats open to booking for spectators, both ordinary and balcony, and also the number of complimentary and VIP seats.
- He is also prompted to fix the prices of both balcony seats and ordinary seats.
- The SAMS updates the database with the ticket prices for the usage of the salesperson.

Query for Amount Collected

- The Show Manager can query for the amount of money collected for a particular show.
- He can also query for the commission payable and amount collected by a particular sales person.

Accessing Balance Sheets

- The Show Manager can access the balance sheets for a particular show or for any year, which contain the income and expenditure details of a show.

Book Tickets
- The salesperson is authorized to book the tickets on request of a spectator. He gets the details regarding the number of seats, seats type, and also the show for which tickets have to be booked.
- The SAMS goes through the database and books the requested seats only if they are available.
- The SAMS then updates the database accordingly.

Cancel Tickets
- The spectator is requested by the salesperson for the transaction ID to be cancelled.
- The SAMS goes through database and empties the details of the seats to be cancelled.

Generate Tickets
- The sales-person after successful ticket booking is prompted to generate a ticket receipt.
- The SAMS then command the printer to print the generated ticket.
- If a ticket is cancelled, an acknowledgment receipt is generated.
- The SAMS then commands the printer to print the generated receipt.

Expenditure Managing
- The accounts-clerk is prompted to enter the cost of expenditure and also the type (eg: artists' payment, logistics, etc.)
- The SAMS updates the database with these expenditure records.

3.2 Functional Requirements

3.2.1 Ticket Transaction

Introduction

A Ticket transaction can either be a booking or a cancellation. It can be performed by a salesperson only on the request of a spectator.

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

Processing
- The SAMS queries the database for the seat availability for that show and also calculates the total amount payable for those seats
- The SAMS stores the ticket transaction ID against the salesperson ID for his commission
- The SAMS updates the database with the seats being displayed as purchased
- The SAMS generates a ticket receipt to be printed.
- 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
- A ticket with all the details is printed.
- In case of cancellation, acknowledgment receipt is printed and then money is refunded as per Terms & Conditions laid by the Show Manager

3.2.2 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

- The log in ID of the manager and his password.
- Show or the year for which he wishes to see the details.

Processing

- 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.

3.2.3 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

- The SAMS looks into the database and looks for any time or date clashes with any other show.
- 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.

3.2.4 Updating Employees

Introduction

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

Input

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

Processing

- 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.
- 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.

3.3   Non-Performance Requirements

3.3.1   Performance

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

3.3.2   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.

3.3.3   Security

Every user of the software is provided a unique log in ID and a password which is stored in the database hashed by SHA2 algorithm.

3.3.4   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.

3.4   Inverse Requirements

- The SAMS does not allow the seats to be displayed as bought from the database without the concerned seat being purchased.
- The SAMS doesn't allow any person other than the Show Manager to set and modify details like show timings, seat prices, employees etc.
- The SAMS doesn't allow any person other than the sales-person to book a ticket on the request of a spectator.

3.5   Logical Database Requirements

All the following data is saved in the database:
- Employee IDs and passwords, and their details.
- Seat prices, availability and timings for a show.
- Ticket transaction details
- Balance Sheets

The database allows concurrent access by various employees, with modified access, and is kept consistent at all the times requiring a good database design.

3.6   Design Constraints

No particular design constraints are observed in this software.