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**Theory Assignment – 1**

1. **Software Requirements Specification (SRS) of Student’s Auditorium Management Software.**

**Introduction**

**1.1 Purpose**

The purpose of this document is to specify the requirements for the ‘Students' Auditorium Management System’. The system will be used to manage and monitor the seating arrangement, ticket booking, sales transactions, and financial records of social and cultural events held in the auditorium.

**1.2 Scope**

The scope of this project includes the development of software for managing and monitoring the seating arrangement, ticket booking, sales transactions, and financial records of social and cultural events held in the students' auditorium. The system will have two categories of seats: balcony seats and ordinary seats, with varying prices based on the popularity of the event. The system will also allow spectators to query seat availability, book tickets, and cancel bookings.

**1.3 Definitions, Acronyms, and Abbreviations**

Not applicable

1.4 References

Not applicable

**General Description**

**2.1 Product Overview**

The Students' Auditorium Management System is a software solution for managing and monitoring the seating arrangement, ticket booking, sales transactions, and financial records of social and cultural events held in the students' auditorium. The system will allow the show manager to fix the price of balcony and ordinary seats, determine the number of seats that can be put on sale, and enter show dates, the number of shows on any particular date, and the show timings. The system will also allow authorized salespersons to log in and make sales transactions, which will be recorded for computing their commission payable and the amount collected.

**2.2 Product Functions**

The main functions of the Students' Auditorium Management System are:

Tracking and managing the seating arrangement of balcony and ordinary seats for social and cultural events held in the students' auditorium.

* Allowing spectators to query seat availability, book tickets, and cancel bookings.
* Allowing the show manager to fix the price of balcony and ordinary seats, determine the number of seats that can be put on sale, and enter show dates, the number of shows on any particular date, and the show timings.
* Recording sales transactions made by authorized salespersons, including their id and the amount collected, for computing their commission payable.
* Allowing the accounts clerk to enter the various types of expenditures incurred for a show, including payment to artists.
* Preparing balance sheets for every show and a comprehensive up-to-date balance sheet for every year, which can only be accessed by the show manager.

**Specific Requirements**

**3.1 External Interface Requirements**

The Students' Auditorium Management System will run on a high-end PC and use free software such as Linux, MySQL, and Apache web server.

**3.2 Functional Requirements:**

**Use Case 1:** Seat Availability Query

**Primary Actor:** Spectator

**Pre Condition:** Internet connection available.

**Main Scenario:**

a) Spectator launches the Students' Auditorium Management System website.

b) System displays the main screen, showing the list of upcoming shows.

c) Spectator selects the show they want to attend.

d) System displays the seat layout for the selected show, showing the availability of balcony and ordinary seats.

e) Spectator selects the type of seat they want to book.

f) System displays the available seat numbers for the selected type of seat.

g) Spectator selects the seat number they want to book.

h) System prompts the spectator to provide their personal information and payment details.

i) Spectator provides the required information and confirms the booking.

j) System displays the ticket with seat numbers and booking details, which the spectator can print.

**Alternate Scenario:**

(a). Show is sold out

(a) 1. System displays a message indicating that the show is sold out.

(a) 2. Spectator can try booking for a different show.

**Use Case 2:** Ticket Booking

**Primary Actor:** Spectator

**Pre Condition:** Internet connection available and seats available for booking.

**Main Scenario:**

a) Spectator launches the Students' Auditorium Management System website.

b) System displays the main screen, showing the list of upcoming shows.

c) Spectator selects the show they want to attend.

d) System displays the seat layout for the selected show, showing the availability of balcony and ordinary seats.

e) Spectator selects the type of seat they want to book.

f) System displays the available seat numbers for the selected type of seat.

g) Spectator selects the seat number they want to book.

h) System prompts the spectator to provide their personal information and payment details.

i) Spectator provides the required information and confirms the booking.

j) System records the booking and updates the seat availability status.

k) System displays the ticket with seat numbers and booking details, which the spectator can print.

**Alternate Scenario:**

(a). Spectator cancels the booking

(a) 1. System cancels the booking and updates the seat availability status.

(a) 2. System refunds the payment made by the spectator.

**Use Case 3:** Show Management

**Primary Actor:** Show Manager

**Pre Condition:** Show details and dates have been entered into the system.

**Main Scenario:**

a) Show Manager logs into the Students' Auditorium Management System.

b) System displays the show management dashboard.

c) Show Manager selects the show they want to manage.

d) System displays the show details including the number of balcony and ordinary seats available.

e) Show Manager can adjust the number of seats available for sale.

f) Show Manager can view the percentage of seats booked for each category and the amount collected in each case.

g) Show Manager can create login accounts for authorized sales persons.

h) Show Manager can view the sales transactions and commission payable to each sales person.

**Alternate Scenario:**

(a) No shows scheduled

(a) 1. System displays a message indicating that there are no shows scheduled.

(a) 2. Show Manager can add new shows to the system.

**Use Case 4:** Salesperson Login

**Primary Actor:** Authorized Salesperson

**Pre Condition:** Salesperson has been given login credentials by show manager.

**Main Scenario:**

a) Salesperson navigates to the login page of the Students' Auditorium Management System.

b) System displays the login screen.

c) Salesperson enters their login credentials and clicks "Login".

d) System verifies the credentials and grants access to the salesperson account.

e) Salesperson can now view the list of upcoming shows and make bookings for spectators.

**Alternate Scenario:**

a) Salesperson enters incorrect login credentials.

b) System displays an error message indicating that the credentials are invalid.

c) Salesperson must re-enter their login credentials or contact the show manager for assistance.

**Use Case 5:** Spectator Registration

**Primary Actor:** Spectator

**Pre Condition:** Spectator has not yet registered with the Students' Auditorium Management System.

**Main Scenario:**

a) Spectator navigates to the registration page of the Students' Auditorium Management System.

b) System displays the registration screen.

c) Spectator enters their personal information, including name, address, and contact details.

d) Spectator sets up a user account with a unique username and password.

e) Spectator clicks "Submit" to register their account.

f) System creates the account and sends a confirmation email to the spectator.

**Alternate Scenario:**

a) Spectator enters invalid or incomplete information.

b) System displays an error message indicating the missing or incorrect information.

c) Spectator must correct the information and resubmit the form.

**Use Case 6**: Sales Commission Calculation

**Primary Actor:** Show Manager

**Pre Condition:** Authorized salespersons have made bookings for a show.

**Main Scenario:**

a) Show Manager navigates to the sales commission page of the Students' Auditorium Management System.

b) System displays the sales commission screen.

c) Show Manager selects the show for which they want to calculate the sales commission.

d) System displays the list of authorized salespersons who made bookings for the selected show.

e) Show Manager can view the total amount collected by each salesperson and the commission payable to them.

**Alternate Scenario:**

a) No salespersons have made bookings for the selected show.

b) System displays a message indicating that there are no sales transactions for the selected show.

**Use Case 7:** Expenditure Entry

**Primary Actor:** Accounts Clerk

**Pre Condition:** Expenditures have been incurred for a show.

**Main Scenario:**

a) Accounts Clerk navigates to the expenditure entry page of the Students' Auditorium Management System.

b) System displays the expenditure entry screen.

c) Accounts Clerk enters the details of the expenditures, including the type of expenditure and the amount.

d) System records the expenditures for the selected show.

e) System updates the balance sheet for the show and the year.

**Alternate Scenario:**

a) Accounts Clerk enters incorrect expenditure details.

b) System displays an error message indicating the incorrect information.

c) Accounts Clerk must re-enter the correct information or contact the show manager for assistance.

**Use Case 8:** Commission Calculation

**Primary Actor:** Show Manager

**Pre Condition:** Authorized salespersons have made ticket sales.

**Main Scenario:**

a) Show Manager logs in to the Students' Auditorium Management System.

b) System displays the main screen with options.

c) Show Manager selects the "Commission Calculation" option.

d) System displays the list of authorized salespersons and their sales details.

e) Show Manager selects a salesperson to view their commission details.

f) System displays the commission details of the selected salesperson.

g) Show Manager verifies the commission details.

h) System generates a commission report that can be printed.

**Alternate Scenario:**

(a) No sales made

(a) 1. System displays a message indicating that no sales have been made.

(a) 2. Show Manager can try again later.

**Other Requirements**

**4.1 Performance Requirements**

The system must have a response time of less than 1 second for tracking human movement and detecting unauthorized activity.

**4.2 Design Constraints**

Not applicable

**4.3 User Documentation**

The system will include user documentation to help users understand how to use the software.

**Maintenance**

**5.1 Maintenance Procedures**

Procedures for maintenance and updating of the system will be documented and made available to the system administrator.

**5.2 Software Maintenance**

The software will be maintained to ensure its continued functionality and to fix any bugs or issues that may arise.

**Configuration Management**

**6.1 Configuration Management Plan**

A configuration management plan will be established to ensure that the system is properly managed and controlled throughout its lifecycle.

**6.2 Configuration Identification**

The system components and related documentation will be identified and marked with unique identifiers to facilitate configuration management.

**6.3 Configuration Control**

Changes to the system will be controlled through a change management process to ensure that they are properly evaluated and implemented.

**Quality Assurance**

**7.1 Quality Assurance Plan**

A quality assurance plan will be established to ensure that the system meets the required standards and specifications.

**7.2 Verification and Validation**

Verification and validation activities will be conducted to ensure that the system meets the specified requirements and functions as intended.

**Acceptance Criteria**

The system will be accepted by the department only if it meets the specified requirements and passes the verification and validation activities.

In conclusion, **the Students' Auditorium Management System** will greatly benefit the management of the auditorium by automating several tasks such as seat availability queries, ticket booking, cancellation, and refund management, commission calculation, and expenditure tracking. This will lead to a more efficient and streamlined process for both the management and spectators. The use cases outlined above demonstrate the various ways in which the system can be used to improve the management of the auditorium.

1. **Drawing Level-0 (Context Level), Level-1 and Level-2 DFDs for Students Auditorium Management System**

