

(CS 1002) Programming Fundamentals

Assignment 05

You are tasked to build an **Event Management System** using C++ that incorporates the following features:

1. **Guest Registration:** Allow users to register guests and view the list of registered guests.
2. **Generate Event Schedule:** Display a predefined event schedule.
3. **Ticket Booking:** Calculate the cost of tickets based on the number of tickets entered by the user.
4. **Manage Seat Assignments:** Use a **2D array** to represent a seating arrangement for the event. Implement the following functionalities:
 - View the seating arrangement.
 - Book a specific seat by selecting a row and column. Validate the booking to ensure no duplicate reservations.

Implement the program as a **menu-driven application** where the user can choose options repeatedly until they choose to exit.

Tasks to Complete:

1. Write the **C++ program** to implement the system.
2. Implement separate functions for each menu option for modularity.
3. Use **loops, if-else conditions, and a 2D array** for seat management.
4. Test the program using the provided sample demo.

Sample Demo and Expected Output

Input 1: Register Guests

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===== Event Management System =====

1. Register Guests

2. Generate Event Schedule

3. Book Tickets
4. Manage Seat Assignments
5. Exit

=====

Enter your choice: 1

How many guests do you want to register? 3

Enter the name of guest 1: Alice

Enter the name of guest 2: Bob

Enter the name of guest 3: Charlie

Guests registered successfully!

Registered Guests: Alice Bob Charlie

Input 2: View Event Schedule

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===== Event Management System =====

1. Register Guests
2. Generate Event Schedule
3. Book Tickets
4. Manage Seat Assignments
5. Exit

=====

Enter your choice: 2

===== Event Schedule =====

6:00 PM - Welcome Speech

6:30 PM - Dinner Begins

7:30 PM - Musical Performance

8:30 PM - Closing Ceremony

=====

Input 3: Book Tickets

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===== Event Management System =====

1. Register Guests

2. Generate Event Schedule

3. Book Tickets

4. Manage Seat Assignments

5. Exit

=====

Enter your choice: 3

Enter the number of tickets to book: 4

Total Price for 4 ticket(s): \$200

Input 4: Manage Seat Assignments

Subtask 1: View Seating Arrangement

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===== Event Management System =====

1. Register Guests

2. Generate Event Schedule

3. Book Tickets

4. Manage Seat Assignments

5. Exit

=====

Enter your choice: 4

===== Manage Seat Assignments =====

1. View Seating Arrangement

2. Book a Seat

3. Return to Main Menu

=====

Enter your choice: 1

Seating Arrangement (0 = Empty, 1 = Occupied):

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

Subtask 2: Book a Seat

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===== Manage Seat Assignments =====

1. View Seating Arrangement

2. Book a Seat

3. Return to Main Menu

=====

Enter your choice: 2

Enter row (0-4): 2

Enter column (0-4): 3

Seat booked successfully!

Subtask 3: View Updated Seating Arrangement

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===== Manage Seat Assignments =====

1. View Seating Arrangement

2. Book a Seat

3. Return to Main Menu

=====

Enter your choice: 1

Seating Arrangement (0 = Empty, 1 = Occupied):

0 0 0 0

0 0 0 0

0 0 0 1 0

0 0 0 0

0 0 0 0

Input 5: Exit the Program

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===== Event Management System =====

1. Register Guests

2. Generate Event Schedule

3. Book Tickets

4. Manage Seat Assignments

5. Exit

=====

Enter your choice: 5

Exiting the system. Goodbye!