**Project: Smart Event Management System  
  
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**Functional Requirements**

**1. User Management**

1.1 **User Registration and Login**

* Clients and admins can register and log into the system.
* Admins have access to managerial functionalities.

1.2 **Access Control**

* Admin features are accessible only to authorized users.
* Admin accounts can only be created by existing admin users.

**2. Client Interface**

2.1 **Search for Shows**

* Clients can search for shows using filters like:
  + Show genre.
  + Location.
  + Date and time.

2.2 **Ticket Management**

* Clients can view show details, including:
  + Show name, description, date, time, and location.
  + Seat availability and ticket prices.
* Clients can:
  + Select specific seats.
  + Purchase tickets and receive confirmation via email.
  + Cancel tickets within a predefined timeframe and receive refunds as per cancellation policies.

2.3 **Account Management**

* Clients can view their ticket purchase history.

**3. Admin Interface**

3.1 **Manage Shows**

* Admins can create, edit, and delete shows, including:
  + Show name, description, date, time, hall, and seating layout.
* Admins can define seating categories (regular, VIP) with corresponding prices.

3.2 **Dynamic Ticket Pricing**

* The system provides ticket price recommendations based on past ticket prices and sales trends.
* Admins can:
  + Accept the recommended price range or set their own prices.
  + To update prices dynamically if needed.

3.3 **Seat Management**

* Admins can view the seating layout and update seat availability.
* Admins can block or unblock specific seats (for maintenance).

**4. Reports and Analytics**

4.1 **Sales Reports**

* Admins can generate reports showing:
  + Total tickets sold.
  + Revenue breakdown by show or category.

4.2 **Performance Metrics**

* Admins can view trends in:
  + Monthly ticket sales.
  + Popular genres or locations.

**Non-Functional Requirements**

**5. Performance**

5.1 **Response Time**

* Dynamic price recommendations must be generated in under 1 second.
* Admin actions (creating a show) must complete within 2 seconds.

5.2 **Scalability**

* The system must handle:
  + Up to 10,000 concurrent users.
  + Analysis of up to 10,000 data points for price recommendations.

**6. Usability**

6.1 **Admin Interface**

* The interface must be simple and intuitive for managing shows and reviewing data.

6.2 **Client Interface**

* Easy navigation for searching, purchasing, and managing tickets.
* Support for accessibility features (screen readers).

**7. Security**

7.1 **Data Protection**

* Encrypt all sensitive client and admin data.
* Use HTTPS for secure data transmission.

7.2 **Authorization**

* Only authorized admins can access management functionalities.
* Unauthorized attempts are logged for review.

**8. Reliability**

8.1 **System Uptime**

* The system must ensure 99% availability, allowing for minimal scheduled maintenance.

8.2 **Data Backup and Recovery**

* Perform daily backups to prevent data loss.
* Implement procedures for quick recovery in case of system failures.

**9. Compatibility**

9.1 **Platform Support**

* The system must be accessible on modern web browsers (Chrome, Firefox, Safari, Edge).

9.2 **Responsive Design**

* Ensure usability across devices, including desktops, tablets, and mobile phones.