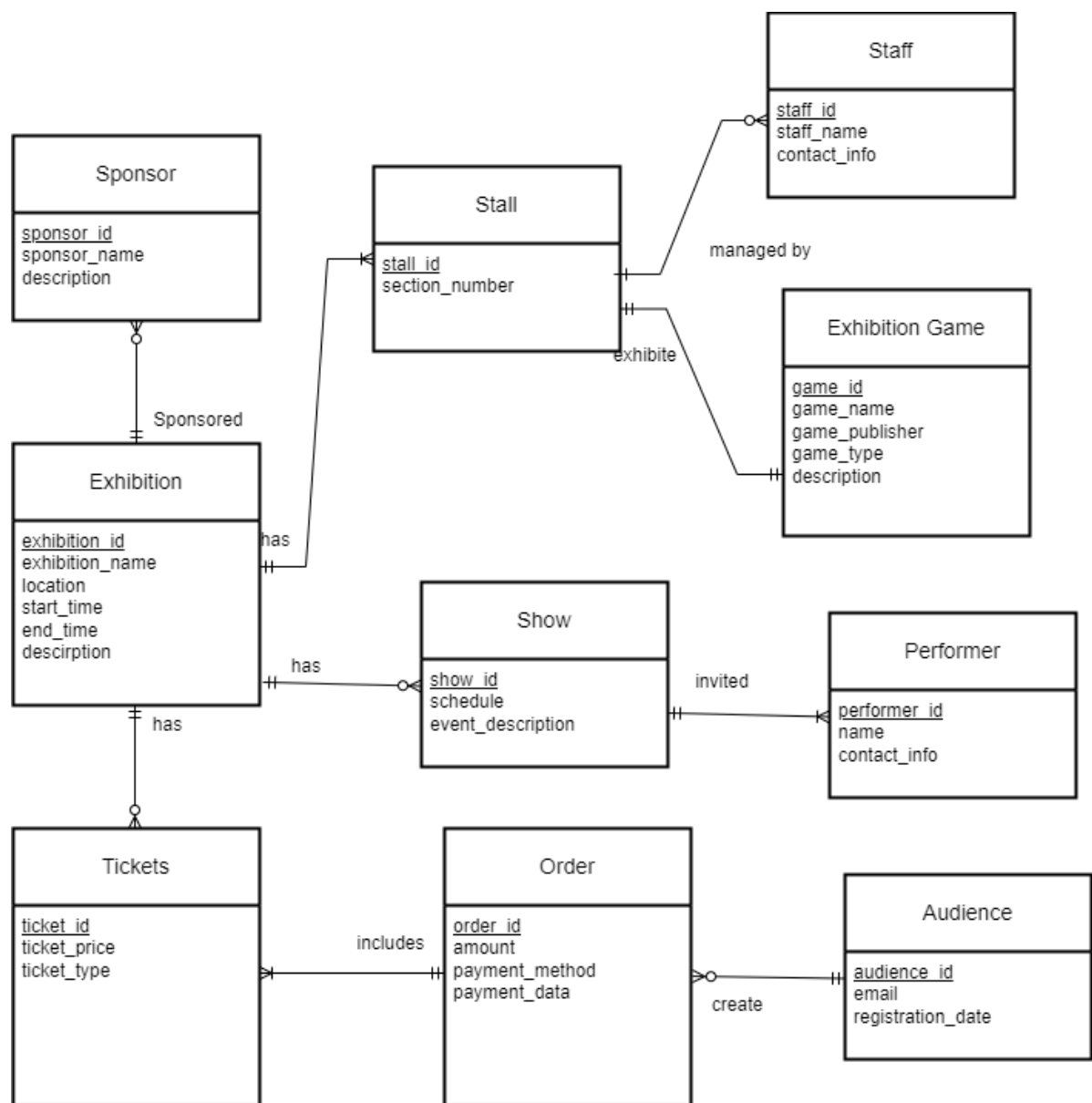


Business Challenges and Database Solutions

The Electronic Entertainment Expo System is designed to address several business problems related to managing large-scale exhibitions, ensuring efficient communication between stakeholders, and improving overall operational effectiveness. The key business problems include:

- **Centralized Data Management:** The system consolidates all event-related data, such as exhibitor information, audience details, and schedules, into a single platform. This eliminates data redundancy and ensures consistency across departments.
- **Exhibition Operations Coordination:** The system organizes information about stalls, shows, and exhibition games, allowing for seamless management of multiple event activities. By handling stall allocations, staff assignments, and game setups, it ensures that exhibitors can efficiently showcase their products or services.
- **Audience Engagement and Ticketing:** Managing ticket sales and tracking audience participation is a core function. The system streamlines ticketing processes, ensuring that the audience can purchase tickets with ease, while also providing event organizers with the tools to monitor attendance and ticket revenues.
- **Sponsorship Tracking:** Exhibitions often involve multiple sponsors. The system helps keep track of sponsorship deals, including the sponsors' contributions and the specific exhibitions they support, ensuring transparency and proper acknowledgment of sponsors.
- **Performer and Show Scheduling:** Performers are integral to exhibition shows. The system enables efficient scheduling of performances and ensures that each show runs smoothly with the proper allocation of performers and resources.

Entity-Relationship Diagram



Entities and Their Relationships

1. Sponsor:

2.
 - **Why included:** Sponsors provide financial support and promotional benefits to the exhibition. Tracking the relationship between sponsors and exhibitions ensures proper organization and acknowledgment.
 - **Attributes:** sponsor_id, sponsor_name, description
 - **Relationships:**
 - **Many-to-One with Exhibition:** Each sponsor can sponsor one exhibition, but one exhibition can be sponsored by multiple sponsors.

3. Exhibition:

4.
 - **Why included:** This is the central entity representing the main event that attendees visit. Tracking exhibitions ensures proper scheduling, sponsorship, and connection to other event components like stalls, shows, and tickets.
 - **Attributes:** exhibition_id, exhibition_name, location, start_time, end_time, description
 - **Relationships:**

- ■ **One-to-Many with Sponsor:** One exhibition can be sponsored by multiple sponsors, but each sponsor is linked to one exhibition.
- **One-to-Many with Stall:** An exhibition can have many stalls, with each stall representing different exhibitors.
- **One-to-Many with Show:** An exhibition can host multiple shows, such as performances or presentations.
- **One-to-Many with Ticket:** An exhibition may issue many tickets to audience members, each linked to the event.

5. Stall:

6. ○ **Why included:** Stalls represent individual spaces within the exhibition where exhibitors showcase their products or services. Managing stall details is important for logistical planning.
- **Attributes:** stall_id, section_number
- **Relationships:**
 - ■ **Many-to-One with Exhibition:** Each stall belongs to one exhibition, but an exhibition can have multiple stalls.
 - **One-to-Many with Staff:** Each stall can have multiple staff members responsible for its operation.
 - **One-to-One with Exhibition Game:** A stall may host one exhibition game, and each exhibition game belongs to a single stall.

7. Staff:

8. ○ **Why included:** Staff members manage various aspects of the stalls during the exhibition. Their involvement is key to the smooth running of each exhibitor's stall.
- **Attributes:** staff_id, staff_name, contact_info
- **Relationships:**
 - ■ **Many-to-One with Stall:** Each staff member is assigned to one stall, but a stall can have multiple staff members.

9. Exhibition Game:

10. ○ **Why included:** Exhibition games offer interactive entertainment for attendees. Tracking these games helps manage schedules and locations within the stalls.
- **Attributes:** game_id, game_name, game_publisher, game_type, description
- **Relationships:**
 - ■ **One-to-One with Stall:** Each exhibition game takes place at one stall, and a stall hosts one exhibition game.

11. Show:

12. ○ **Why included:** Shows are performances or presentations that take place during the exhibition. Managing show details helps in coordinating schedules and performers.
- **Attributes:** show_id, schedule, event_description
- **Relationships:**
 - ■ **Many-to-One with Exhibition:** Each show is tied to one exhibition, but an exhibition can host multiple shows.
 - **One-to-Many with Performer:** A show can feature multiple performers, but each performer is assigned to one show.

13. Performer:

14. ○ **Why included:** Performers participate in the shows during the exhibition. Tracking performer schedules and details is crucial for event planning.
- **Attributes:** performer_id, name, contact_info
- **Relationships:**
- ■ **Many-to-One with Show:** Each performer is linked to one show, but a show may have multiple performers.

15. **Ticket:**

16. ○ **Why included:** Tickets allow audience members to attend exhibitions. Proper ticket management helps track sales and attendance.
- **Attributes:** ticket_id, ticket_price, ticket_type
- **Relationships:**
- ■ **Many-to-One with Exhibition:** Each ticket is tied to one exhibition, but an exhibition may issue multiple tickets.
- ■ **Many-to-One with Order:** Each ticket is part of one order, but an order may contain multiple tickets.

17. **Order:**

18. ○ **Why included:** Orders track the transactions for ticket purchases made by audience members. This is essential for financial tracking and ensuring proper ticket allocation.
- **Attributes:** order_id, amount, payment_method, payment_data
- **Relationships:**
- ■ **One-to-Many with Ticket:** An order may include multiple tickets, but each ticket belongs to one order.
- ■ **Many-to-One with Audience:** Each order is made by one audience member, but an audience member may place multiple orders.

19. **Audience:**

20. ○ **Why included:** Audience members are key participants who purchase tickets and attend exhibitions. Managing their data ensures proper event access and communication.
- **Attributes:** audience_id, email, registration_date
- **Relationships:**
- ■ **One-to-Many with Order:** An audience member can place multiple orders, but each order is tied to one audience member.