

An ER Model of Stadium Ticket Management

The Entity-Relationship (ER) model is a conceptual data modeling technique used in database design. It helps in representing and visualizing the structure of a database in terms of entities, attributes, and the relationships between them. The ER model is widely used to design databases in a way that reflects the real-world entities and how they are related to each other.

Entity:

An entity is an object with a physical existence or it may be an object with a conceptual existence. There are two types of entity-strong and weak entity.

1. Strong entity: A strong entity is a type of entity that has a key attribute. Strong entity does not depend on other entity in the schema. It has a primary key that helps in identifying it uniquely and it is represented by a rectangle.

2. Weak entity: A weak entity is an entity that cannot be uniquely identified by its attributes alone and it is represented by double rectangle.

We have created 10 entities in ER diagram named- users (event organizer, customer, vendor), stadium, gallery, program, ticket, cart, payment and reviews & complaints where user, stadium, gallery, program, payment, are strong entity and cart is weak entity.

Attribute:

In DBMS, we have entities, and each entity contains some property about their behavior which is also called the attribute. In our ER diagram we have 10 entity and they also have multiple attributes.

1. Key Attribute
2. Simple Attribute
3. Single-valued Attribute
4. Composite Attribute

a. Event Organizer:

1. Organizer_Id
2. Organization Name
3. Designation
4. Department
5. Mobile_No
6. Address

b. Customer:

- 1.Customer_Id
- 2.Customer_Name
- 3.Date_of_Birth
- 4.Mobile_no.
- 5.Gender
- 6.Mobile_No
- 7.Address

c. Vendor:

- 1.Vendor_Id
- 2.Vendor_Name
- 3.Company Name
- 4.Mobile_no.
- 5.Address

d. Stadium:

- 1.Std_Name
- 2.Std_Location
- 3.Std_ID
- 4.Std_Capacity

e. Gallery:

- 1.G_Name
- 2.G_Id
- 3.G_Location
- 4.G_capacity

f. Program:

- 1.Prog_Id
- 2.Event_title
- 3.Duration
- 4.Date

g. Ticket:

- 1.Ticket_code
- 2.Seat_No
- 3.Price
- 4.Release_Date
- 5.Expire_Date

h. Cart:

- 1.Cart_Id
- 2.Status
- 3.Total Price
- 4.Total_ticket

i. Payment:

- 1.Account_No.
- 2.Transaction_Id
- 3.Payment Method
- 4.Amount
- 5.Transaction_date

j.Reviews & Complaints:

- 1.R.C ID
- 2.Name
- 3.Email
- 4.Date_Submitted
- 5.Description

Relationship:

A relationship is represented by diamond shape in ER diagram, it shows the relationship among entities. Here to define ER diagram, we need the following relationship-

1.One to Many:

1. Customer-Review & Complaints: Customer can reports review and complaints. One customer can report many review and complaints but one review and complaint must came from one customer. The participation of “Customer” entity is Partial and for “Review & Complaints”, it is total. So the cardinality is (0,N) and (1,1) respectively.

2. Customer-Ticket: Customer can book many tickets but a ticket can be provided only to one customer. the participation of “Customer” entity is Partial and for “Ticket”, it is total. So the cardinality is (0,N) and (1,1) respectively.

3. Payment-Cart: Here Cart can receive the participation of “Cart” entity is Partial and for “Payment”, it is so the cardinality is (0,N) and (1,1) respectively.

4.Gallery-Ticket: Here the participation of “Gallery” entity is total and for “Ticket”, it is total. So the cardinality is (1,N) and (1,1) respectively.

5.Event Organizer-Program: The participation of “Event Organizer” entity is partial and for “Program”, it is total. So the cardinality is (0, N) and (1, 1) respectively.

6.Customer-Ticket: Customer can book many tickets but a ticket can be provided only to one customer. the participation of “Customer” entity is Partial and for “Ticket”, it is total. So the cardinality is (0,N) and (1,1) respectively.

2. Many to One:

1. Gallery-Stadium: A specific gallery can be in one stadium where one stadium can have multiple gallery. The participation of “Gallery” entity is total and for “Stadium”, is also total. So the cardinality is (1,1) and (1,N) respectively.

2. Ticket-Program: A program has multiple ticket but a ticket is only limited for a single show. The participation of "Ticket" entity is total and for "Program", it is total. So the cardinality is (1,1) and (1,N) respectively.

3. Ticket-Cart: In this relationship one cart has multiple ticket but one ticket can't be stay in multiple cart. The participation of "Ticket" entity is Total and for "Cart", it is partial. So the cardinality is (1,1) and (0,N) respectively.

4. Vendor-Gallery: A Vendor can't be assigned for mutiple gallery but many vendors can be assigned in a single gallery. The participation of "Vendor" entity is partial and for "Gallery", it is total. So the cardinality is (1, 1) and (0,N) respectively

5.Payment-Customer: A Customer can do multiple payments but one payment can be done by one customer. The participation of "Payment" entity is total and for "Customer", it is partial. So the cardinality is (0, 1) and (1, M) respectively

6.Program-Stadium:Many Programs can be held in one Stadium and one stadium can organize many programs. The participation of "Program" entity is total and for "Stadium", it is partial. So the cardinality is (0, 1) and (1, M) respectively