

[Art Exhibition Management System (DBMS)]

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Abstract: To create an Art Exhibition Management System that keeps records of artists, their paintings, art gallery details, and exhibition details, and showcases pictures of paintings to the customers.

This project intends to include various features related to an art exhibition i.e. information about the gallery, exhibition, artists, their paintings, customers (the ones who buy the paintings), etc.

Aim: To model the art exhibition database, which will keep track of the artist's artworks.

Entity: a “thing” or “object” in the enterprise that is distinguishable from other objects

❖ Described by a set of attributes

List of Entities in the database :

- **Artist:** The person who can showcase his artwork in the exhibition. It contains primary information about the artist like name, phone number, his/her painting style, address, city, etc.
- **Artwork:** The artwork that is being exhibited in the exhibition by any of the artists. It contains basic information about the artwork like the year it was made, title, price, type of painting, etc.
- **Exhibition:** The exhibition or the place where the exhibition is being organized. It contains information like the name of the exhibition/place, the start date and end date of the exhibition, and the address of the exhibition.
- **Stall:** Art Exhibition has several stalls, which provide space for presenting artwork. This entity contains information like Stall No, open time and close time.
- **Order:** The artwork that is sold. It specifies when the artwork sold and at what price it sold.
- **Customer:** This describes the customer who visits the exhibition or buys the artwork or rents the artwork from the exhibition. It contains information like the name of the customer, phone number, address, email, etc.

Attributes — characteristics of an entity, and has an oval symbol.

There are different types of attributes :

- ❖ **Key attribute:** An attribute uniquely distinguishes the entity in an entity set.
- ❖ **Simple attribute:** An attribute that cannot be further subdivided into components.
- ❖ **Composite attribute:** An attribute that can be split into components.

- ❖ **Single-valued attribute:** The attribute which takes up only a single value for each entity instance.
- ❖ **Multi-valued attribute:** The attribute which takes up more than a single value for each entity instance.
- ❖ **Stored attribute:** An attribute that stores the data which can be used to get the derived attribute.
- ❖ **Derived attribute:** An attribute that can be derived from other attributes.

Attributes for each entity in the art exhibition database:

Artist: Name, phone number, art_style, address, Artist_ID.

Artwork: Art_ID, Title, Price, Description, Type, Year,.

Exhibition: Name, Start_date, End_date, Address, Expo-ID, Address.

Stall: Open_time, Close_time, S_No.

Order: Order_price, Order_date.

Customer: F_name, L_name, Date of birth, phone number, address, city, pincode, state, country, email.

Bill: Bill_ID, Bill_Paid, GST, Bill_Details.

A relationship is an association among several entities

Relationships:

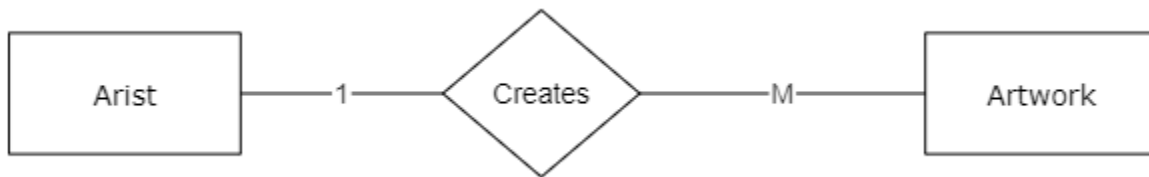
- ❖ Artists creating paintings.
- ❖ Paintings created by Artist.
- ❖ Paintings present at Stalls(Exhibition Stalls).
- ❖ Art Exhibition Stalls present Paintings
- ❖ Artwork ordered via Order
- ❖ Order(Customer) be in agreement to buy Artwork
- ❖ Customer placing Order (Artwork)
- ❖ Order (Artwork) placed by Customer
- ❖ The customer pays Bill.
- ❖ Bill Paid by the customer.
- ❖ The exhibition has several stalls.
- ❖ Stalls are in the Exhibition.

Relations:

1. Artist and Artwork

Relation: Creates

Cardinality: one to many



.....so on

E-R Model:

ER model stands for an Entity-Relationship model.

It is a high-level data model. This model is used to define the data elements and relationships for a specified system.

It develops a conceptual design for the database. It also develops a very simple and easy-to-design view of data.

ER diagram here

Relational Diagram:

Converting ER model to tables/relations, commonly used, flexible.

Each and every column header is called an attribute. The row header is called a tuple.

Relational diagram here

Normalization:

Normalization is used to minimize the redundancy from a relation or set of relations.

1. First Normal Form (1NF):

A relation is said to be in its First Normal form if it has got no non-atomic attribute.

(Non-atomic attribute means the attribute which can't be subdivided).

2. Second Normal Form (2NF):

A relation that is in 1NF is said to have a second normal form if it satisfies any one of the following conditions.

- a. The primary key contains only one attribute.
- b. There exist no non-key attributes.
- c. Every non-key attribute present in the relation should functionally depend upon a full set of the primary key.

3. Third Normal Form (3NF).

The relation in 2NF is said to be 3NF if there exists no transitive dependency of any non-key attribute on the set of the primary key.

Normalization of Database:

1. **Artist**(Artist_ID (key), FirstName, LastName, Pincode, City, State, Country, Style)

1NF: Meets the 1NF because it has no non-atomic attribute.

2NF: Meets the 2NF Rule-1 The primary key contains only one attribute.

3NF: This is not in 3N due to the existence of the transitive dependency.

Artist_ID → FirstName, LastName, Style, Pincode.

Pincode → City, State, Country.

Solution: Split the relation into two relations named Artist_Info and Artist_Address.

Artist_Info(Artist_ID(key), First_Name, Last_Name, Pincode(fk), Style).

Artist_Address(Pincode(key), City, State, Country).

..... so on (each step should clearly explain)

Final relations normalized to the Third Normal Form:

Artist_Info(Artist_ID(key), First_Name, Last_Name, Pincode(fk), Style).

Artist_Address(Pincode(key), City, State, Country).

Artist_Contact(Artist_ID (fk), Contact)

Artwork(Art_ID (key), Year, Title, Price, Description, Type, Artist_ID(fk), S_ID(fk))

Exhibition(Expo_ID (key), Gallery_Name, Start_Date, End_Date, Pincode(fk)).

Exhibition_Address(Pincode(key), City, State, Country).

Stall(S_ID (key), Open_time, Close_time, Expo_ID(fk))

Order_Info(Order_ID (key), Order_Date, Price, Art_ID(fk), Customer_ID(fk))

Customer(Customer_ID (key), F_name, L_Name, E-Mail)

Customer_Contact(Customer_ID (fk), Contact)

Bill(Bill_ID (key), Bill_paid, GST, Bill_Details, Customer_ID(fk)).

ENTITY RECORDS

1. Artist Address Table

Below is the SQL command to Create Artist_Address Table:

```
create table Artist_Address(  
Pincode int primary key not null,  
City varchar(15)not null,  
State varchar(15)not null,  
Country varchar(20) not null  
);
```

Table:

	Field	Type	Null	Key	Default	Extra
►	Pincode	int	NO	PRI	NULL	
	City	varchar(15)	NO		NULL	
	State	varchar(15)	NO		NULL	
	Country	varchar(20)	NO		NULL	

Sample Table:

	Pincode	City	State	Country
►	50059	Vinci	Florance	Italy
	413304	Pandharur	Maharastra	India
	534275	Narsapur	Andhra	India
	700007	Kolkata	West Bengal	India
*	NULL	NULL	NULL	NULL

QUERIES

Query 1: Find the Artworks drawn by Leonardo Da vinci.

SQL Command:

```
select Title,Type,Price,Year,F_name,L_name
```

from artist_info

❑ **VIEWS:**

1.CREATE VIEW Paintings AS

SELECT Title , Description,Price,Year

FROM artworks

WHERE Price > 50000;

QUERY ❑ select * from Paintings;

	Title	Description	Price	Year
▶	Couple	The present painting is rendered in Tagore's ico...	470000	1921
	La scapigliata	The painting has been admired for its captivat...	507000	1506
	Horses	Here, four horses are shown in tumultuous gallo...	700000	1960

THANK
YOU