

Hexaware Technologies Limited

Foundation Training Program

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Case Study

1: Problem Statement:

Virtual Art Gallery System using Core Java with JDBC

Introduction The Virtual Art Gallery System aims to provide an immersive and interactive experience for art enthusiasts to explore, view, and appreciate a diverse collection of artworks online. To develop a robust and maintainable system, it is essential to create a well-structured object oriented programming model with classes that represent the core entities and functionalities of the virtual art gallery. This problem statement outlines the requirements for designing and implementing the OOP model classes for this system.

1. Schema design:

Entities:

• Designing the schema for a Virtual Art Gallery involves creating a structured representation of the database that will store information about artworks, artists, users, galleries, and various relationships between them. Below is a schema design for a Virtual Art Gallery database:

•Entities and Attributes:

To create tables I have created a new database.

```
create database ftp_case_study;  
use ftp_case_study;
```

•Artwork

ArtworkID (Primary Key)

Title

Description

CreationDate

Medium

ImageURL (or any reference to the digital representation)

Query:create table Artwork (ArtworkID int primary key,Title varchar(20), Description text, CreationDate date, Medium varchar(50),ImageUrl varchar(255));

```
6
7
8 • drop database ftp_case_study;
9 • create database ftp_case_study;
10 • use ftp_case_study;
11 • create table Artwork (ArtworkID int primary key,Title varchar(20), Description text, CreationDate date, Medium varchar(50),ImageUrl varchar(255));
12 • create table Artist (ArtistID int primary key, Name varchar(50),Biography text,BirthDate date, Nationality varchar(50),Website varchar (255), Cotact
(255));
```

Output

#	Time	Action	Message
❌ 132	15:39:11	drop ftp_case_study	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your M
✅ 133	15:39:34	drop database ftp_case_study	0 row(s) affected
✅ 134	15:43:13	USE TechShop	0 row(s) affected
✅ 135	15:43:21	show tables	5 row(s) returned
✅ 136	15:46:00	create database ftp_case_study	1 row(s) affected
✅ 137	15:46:04	use ftp_case_study	0 row(s) affected
✅ 138	15:50:47	create table Artwork (ArtworkID int primary key,Title varchar(20), Description text, CreationDate date, Med...	0 row(s) affected

Query Completed

•Artist

ArtistID (Primary Key)

Name

Biography

BirthDate

Nationality

Website

Contact Information

Query:create table Artist (ArtistID int primary key, Name varchar(50),Biography text,BirthDate date, Nationality varchar(50),Website varchar (255), CotactInformation varchar(255));

```

11 • create table Artwork (ArtworkID int primary key, Title varchar(20), Description text, CreationDate date, Medium varchar(50), ImageURL varchar(255));
12 • create table Artist (ArtistID int primary key, Name varchar(50), Biography text, BirthDate date, Nationality varchar(50), Website varchar(255), ContactInformation varchar(255));
13 • create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50), First_Name varchar(20), Last_Name varchar(20), DateOfBirth date, Profile_Picture blob);
14 • create table Gallery (GalleryID int primary key, Name varchar(25), Description text, Location varchar(50), Curator int, OpeningHours varchar(255), foreign key (Curator) references Artist(ArtistID));
15 • create table User Favorite Artwork ( UserID int, ArtworkID int, primary key (UserID, ArtworkID), foreign key (UserID) references User (UserID), foreign key (ArtworkID)

```

Output

#	Time	Action	Message	Duration / Fetch
134	15:43:13	USE TechShop	0 row(s) affected	0.000 sec
135	15:43:21	show tables	5 row(s) returned	0.016 sec / 0.000 sec
136	15:46:00	create database ftp_case_study	1 row(s) affected	0.031 sec
137	15:46:04	use ftp_case_study	0 row(s) affected	0.000 sec
138	15:50:47	create table Artwork (ArtworkID int primary key, Title varchar(20), Description text, CreationDate date, Med...	0 row(s) affected	0.094 sec
139	15:52:16	create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50)...	0 row(s) affected	0.078 sec
140	15:52:42	create table Artist (ArtistID int primary key, Name varchar(50), Biography text, BirthDate date, Nationality var...	0 row(s) affected	0.078 sec

Query Completed

• User

UserID (Primary Key)

Username

Password

Email

First Name

Last Name

Date of Birth

Profile Picture

FavoriteArtworks (a list of references to ArtworkIDs)

Query: create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50), First_Name varchar(20), Last_Name varchar(20), DateOfBirth date, Profile_Picture blob);

```

12 • create table Artist (ArtistID int primary key, Name varchar(50), Biography text, BirthDate date, Nationality varchar(50), Website varchar(255), ContactInformation varchar(255));
13 • create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50), First_Name varchar(20), Last_Name varchar(20), DateOfBirth date, Profile_Picture blob);
14 • create table Gallery (GalleryID int primary key, Name varchar(25), Description text, Location varchar(50), Curator int, OpeningHours varchar(255), foreign key (Curator) references Artist(ArtistID));
15 • create table User Favorite Artwork ( UserID int, ArtworkID int, primary key (UserID, ArtworkID), foreign key (UserID) references User (UserID), foreign key (ArtworkID)

```

Output

#	Time	Action	Message	Duration / Fetch
133	15:39:34	drop database ftp_case_study	0 row(s) affected	0.047 sec
134	15:43:13	USE TechShop	0 row(s) affected	0.000 sec
135	15:43:21	show tables	5 row(s) returned	0.016 sec / 0.000 sec
136	15:46:00	create database ftp_case_study	1 row(s) affected	0.031 sec
137	15:46:04	use ftp_case_study	0 row(s) affected	0.000 sec
138	15:50:47	create table Artwork (ArtworkID int primary key, Title varchar(20), Description text, CreationDate date, Med...	0 row(s) affected	0.094 sec
139	15:52:16	create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50)...	0 row(s) affected	0.078 sec

• Gallery

GalleryID (Primary Key)

Name

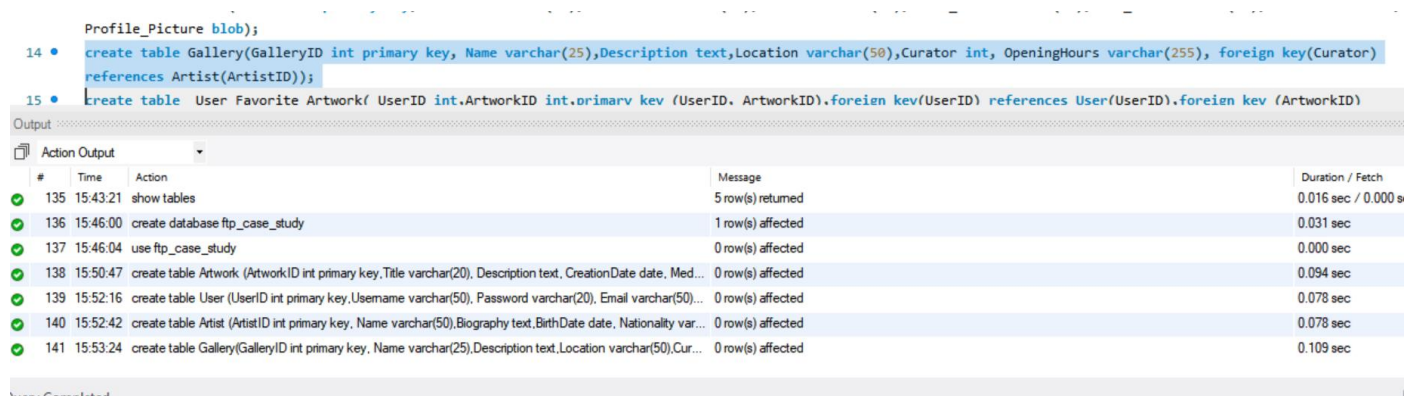
Description

Location

Curator (Reference to ArtistID)

OpeningHours

Query: create table Gallery(GalleryID int primary key, Name varchar(25),Description text,Location varchar(50),Curator int, OpeningHours varchar(255), foreign key(Curator) references Artist(ArtistID));



The screenshot shows a database management interface with two SQL queries and their execution results.

Query 14: `create table Gallery(GalleryID int primary key, Name varchar(25),Description text,Location varchar(50),Curator int, OpeningHours varchar(255), foreign key(Curator) references Artist(ArtistID));`

Query 15: `create table User_Favorite_Artwork(UserID int,ArtworkID int,primary key (UserID, ArtworkID),foreign key(UserID) references User(UserID),foreign key (ArtworkID) references Artist(ArtistID));`

Output:

#	Time	Action	Message	Duration / Fetch
135	15:43:21	show tables	5 row(s) returned	0.016 sec / 0.000 s
136	15:46:00	create database ftp_case_study	1 row(s) affected	0.031 sec
137	15:46:04	use ftp_case_study	0 row(s) affected	0.000 sec
138	15:50:47	create table Artwork(ArtworkID int primary key, Title varchar(20), Description text, CreationDate date, Med...	0 row(s) affected	0.094 sec
139	15:52:16	create table User(UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50)...	0 row(s) affected	0.078 sec
140	15:52:42	create table Artist(ArtistID int primary key, Name varchar(50), Biography text, BirthDate date, Nationality var...	0 row(s) affected	0.078 sec
141	15:53:24	create table Gallery(GalleryID int primary key, Name varchar(25),Description text,Location varchar(50),Cur...	0 row(s) affected	0.109 sec

• Relationships:

• Artwork – Artist (Many-to-One)

An artwork is created by one artist.

Artwork.ArtistID (Foreign Key) references Artist.ArtistID.

• User – Favorite Artwork (Many-to-Many)

A user can have many favorite artworks, and an artwork can be a favorite of multiple users.

User_Favorite_Artwork (junction table):

UserID (Foreign Key) references User.UserID.

ArtworkID (Foreign Key) references Artwork.ArtworkID.

Query: create table User_Favorite_Artwork(UserID int,ArtworkID int,primary key (UserID, ArtworkID),foreign key(UserID) references User(UserID),foreign key (ArtworkID) references Artwork(ArtworkID));

```
14 • create table Gallery(GalleryID int primary key, Name varchar(25),Description text,Location varchar(50),Curator int, OpeningHours varchar(255), foreign key(Curator)
references Artist(ArtistID));
15 • create table User_Favorite_Artwork( UserID int,ArtworkID int,primary key (UserID, ArtworkID),foreign key(UserID) references User(UserID),foreign key (ArtworkID)
references Artwork(ArtworkID));
16 • create table Artwork_Gallery (ArtworkID int, GalleryID int, primary key(ArtworkID, GalleryID),foreign key (ArtworkID) references Artwork(ArtworkID),foreign key (
GalleryID) references Gallery(GalleryID));
17
18
```

Output

#	Time	Action	Message	Duration / Fetch
✓ 136	15:46:00	create database ftp_case_study	1 row(s) affected	0.031 sec
✓ 137	15:46:04	use ftp_case_study	0 row(s) affected	0.000 sec
✓ 138	15:50:47	create table Artwork (ArtworkID int primary key, Title varchar(20), Description text, CreationDate date, Med...	0 row(s) affected	0.094 sec
✓ 139	15:52:16	create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50)...	0 row(s) affected	0.078 sec
✓ 140	15:52:42	create table Artist (ArtistID int primary key, Name varchar(50), Biography text, BirthDate date, Nationality var...	0 row(s) affected	0.078 sec
✓ 141	15:53:24	create table Gallery(GalleryID int primary key, Name varchar(25),Description text,Location varchar(50),Cur...	0 row(s) affected	0.109 sec
✓ 142	16:21:12	create table User_Favorite_Artwork(UserID int,ArtworkID int,primary key (UserID, ArtworkID),foreign key(...	0 row(s) affected	0.125 sec

Query Completed

• Artist - Gallery (One-to-Many)

An artist can be associated with multiple galleries, but a gallery can have only one curator (artist).

Gallery.ArtistID (Foreign Key) references Artist.ArtistID.

• Artwork - Gallery (Many-to-Many)

An artwork can be displayed in multiple galleries, and a gallery can have multiple artworks.

Artwork_Gallery (junction table):

ArtworkID (Foreign Key) references Artwork.ArtworkID.

GalleryID (Foreign Key) references Gallery.GalleryID.

Query:

Create table Artwork_Gallery (ArtworkID int, GalleryID int, primary key(ArtworkID, GalleryID), foreign key (ArtworkID) references Artwork(ArtworkID), foreign key (GalleryID) references Gallery(GalleryID));

The screenshot shows a SQL query execution window with the following content:

```
references Artist(ArtistID));
15 • create table User_Favorite_Artwork( UserID int, ArtworkID int, primary key (UserID, ArtworkID), foreign key (UserID) references User(UserID), foreign key (ArtworkID)
references Artwork(ArtworkID));
16 • Create table Artwork_Gallery (ArtworkID int, GalleryID int, primary key(ArtworkID, GalleryID), foreign key (ArtworkID) references Artwork(ArtworkID), foreign key (
GalleryID) references Gallery(GalleryID));
17
18
```

Below the query, the 'Output' tab is selected, showing a table with columns: #, Time, Action, Message, and Duration / Fetch. The table contains 7 rows of execution logs.

#	Time	Action	Message	Duration / Fetch
137	15:46:04	use ftp_case_study	0 row(s) affected	0.000 sec
138	15:50:47	create table Artwork (ArtworkID int primary key, Title varchar(20), Description text, CreationDate date, Med...	0 row(s) affected	0.094 sec
139	15:52:16	create table User (UserID int primary key, Username varchar(50), Password varchar(20), Email varchar(50), ...	0 row(s) affected	0.078 sec
140	15:52:42	create table Artist (ArtistID int primary key, Name varchar(50), Biography text, BirthDate date, Nationality var...	0 row(s) affected	0.078 sec
141	15:53:24	create table Gallery (GalleryID int primary key, Name varchar(25), Description text, Location varchar(50), Cur...	0 row(s) affected	0.109 sec
142	16:21:12	create table User_Favorite_Artwork (UserID int, ArtworkID int, primary key (UserID, ArtworkID), foreign key (...	0 row(s) affected	0.125 sec
143	16:21:36	Create table Artwork_Gallery (ArtworkID int, GalleryID int, primary key (ArtworkID, GalleryID), foreign key (Ar...	0 row(s) affected	0.109 sec

Query Completed

*****INSERTION*****

Now I have inserted 10 records to each table to perform and verify operations. The queries I used are as follows:

Note: I modified the title column of Artwork table to change the varchar size to 255.

-- Insert data into Artwork table

```
INSERT INTO Artwork VALUES(1, 'The Starry Night', 'Famous painting by Vincent van Gogh', '1889-06-01', 'Oil on canvas', 'starry_night.jpg'), (2, 'Mona Lisa', 'Iconic portrait by Leonardo da Vinci', '1503-01-01', 'Oil on wood', 'mona_lisa.jpg');
```

-- Modify the title column size

```
alter table Artwork modify column Title varchar(255);
```

-- Insert data into Artwork table

```
INSERT INTO Artwork (ArtworkID, Title, Description, CreationDate, Medium, ImageURL)
VALUES
```

```
(3, 'Guernica', 'Powerful anti-war painting by Pablo Picasso', '1937-04-26', 'Oil on canvas', 'guernica.jpg'),
(4, 'The Persistence of Memory', 'Surrealist painting by Salvador Dalí', '1931-01-01', 'Oil on canvas', 'persistence_of_memory.jpg'),
(5, 'Starry Night Over the Rhône', 'Night sky painting by Vincent van Gogh', '1888-09-01', 'Oil on canvas', 'starry_night_rhone.jpg'),
(6, 'The Birth of Venus', 'Classic painting by Sandro Botticelli', '1900-05-23', 'Tempera on canvas', 'birth_of_venus.jpg'),
(7, 'The Last Supper', 'Religious masterpiece by Leonardo da Vinci', '1788-09-18', 'Tempera on gesso', 'last_supper.jpg'),
(8, 'Water Lilies', 'Series of paintings by Claude Monet', '1899-07-27', 'Oil on canvas', 'water_lilies.jpg'),
(9, 'American Gothic', 'Iconic painting by Grant Wood', '2001-01-11', 'Oil on beaverboard', 'american_gothic.jpg'),
(10, 'The Scream', 'Expressionist painting by Edvard Munch', '1809-11-23', 'Oil, tempera, pastel, and crayon on cardboard', 'the_scream.jpg');
```


-- Insert data into Artist table

```
INSERT INTO Artist VALUES(1, 'Vincent van Gogh', 'Dutch post-impressionist painter', '1853-03-30', 'Dutch', 'http://vangogh.com', 'info@vangogh.com'),(2, 'Leonardo da Vinci', 'Italian polymath of the Renaissance', '1452-04-15', 'Italian', 'http://leonardodavinci.com', 'info@leonardodavinci.com');
alter table Artist change column CotactInformation ContactInformation varchar (255);
```

-- Insert data into Artist table

```
INSERT INTO Artist (ArtistID, Name, Biography, BirthDate, Nationality, Website, ContactInformation)
VALUES
(3, 'Pablo Picasso', 'Spanish painter and sculptor', '1881-10-25', 'Spanish', 'http://picasso.com', 'info@picasso.com'),
(4, 'Salvador Dali', 'Leading figure in the Surrealist movement', '1904-05-11', 'Spanish', 'http://salvadordali.com', 'info@salvadordali.com'),
(5, 'Edvard Munch', 'Norwegian painter and printmaker', '1863-12-12', 'Norwegian', 'http://munch.com', 'info@munch.com'),
(6, 'Sandro Botticelli', 'Italian painter of the Early Renaissance', '1445-03-01', 'Italian', 'http://botticelli.com', 'info@botticelli.com'),
(7, 'Grant Wood', 'American painter known for regionalist art', '1891-02-13', 'American', 'http://grantwood.com', 'info@grantwood.com'),
(8, 'Johannes Vermeer', 'Dutch Baroque painter', '1632-10-31', 'Dutch', 'http://vermeer.com', 'info@vermeer.com'),
(9, 'Claude Monet', 'French painter and founder of Impressionist painting', '1840-11-14', 'French', 'http://monet.com', 'info@monet.com'),
(10, 'Rembrandt van Rijn', 'Dutch Golden Age painter and etcher', '1606-07-15', 'Dutch', 'http://rembrandt.com', 'info@rembrandt.com');
```

-- Insert data into User table

```
INSERT INTO User VALUES(1, 'artlover1', 'password123', 'user1@example.com', 'John', 'Doe', '1980-05-15', NULL),(2, 'artfanatic2', 'pass456', 'user2@example.com', 'Jane', 'Smith', '1992-11-22', NULL);
```

-- Insert data into User table

```
INSERT INTO User (UserID, Username, Password, Email, First_Name, Last_Name, DateOfBirth, Profile_Picture)
VALUES
(3, 'artcollector3', 'pass789', 'user3@example.com', 'Emily', 'Johnson', '1985-09-18', NULL),
(4, 'artentusiast4', 'artlover456', 'user4@example.com', 'Daniel', 'Williams', '1990-07-25', NULL),
(5, 'galleryvisitor5', 'visit123', 'user5@example.com', 'Sophia', 'Brown', '1988-12-03', NULL),
(6, 'creativeartist6', 'painter567', 'user6@example.com', 'Oliver', 'Smith', '1995-04-30', NULL),
(7, 'designer7', 'designpass', 'user7@example.com', 'Ava', 'Martinez', '1982-08-14', NULL),
(8, 'artlover8', '123art', 'user8@example.com', 'Lucas', 'Taylor', '1993-01-22', NULL),
(9, 'curator9', 'artcurator', 'user9@example.com', 'Isabella', 'Hernandez', '1987-06-10', NULL),
(10, 'artstudent10', 'studentpass', 'user10@example.com', 'Ethan', 'Adams', '1998-03-07', NULL),
(11, 'creativemind11', 'creativity123', 'user11@example.com', 'Mia', 'Lee', '1986-11-28', NULL),
(12, 'artexplorer12', 'exploreart', 'user12@example.com', 'Noah', 'Wright', '1994-02-15', NULL);
```

-- Insert data into Gallery table

```
INSERT INTO Gallery VALUES(1, 'Modern Art Gallery', 'Showcasing contemporary masterpieces', 'City Center', 1, '9 AM - 6 PM'),(2, 'Classic Art Exhibit', 'A collection of timeless artworks', 'Downtown', 2, '10 AM - 7 PM');
```

-- Insert data into Gallery table

```
INSERT INTO Gallery (GalleryID, Name, Description, Location, Curator, OpeningHours)
VALUES
(3, 'Modern Art Haven', 'Contemporary art space', 'City Center', 6, 'Mon-Fri: 10 AM - 6 PM, Sat: 12 PM - 4 PM'),
(4, 'Gallery of Classics', 'Showcasing classical masterpieces', 'Downtown Plaza', 7, 'Tue-Sat: 9 AM - 5 PM'),
(5, 'Urban Expressions', 'Celebrating urban street art', 'Warehouse District', 8, 'Wed-Sun: 11 AM - 7 PM'),
(6, 'Nature's Palette Gallery', 'Focus on nature-inspired art', 'Green Park Avenue', 9, 'Mon-Sat: 9 AM - 6 PM'),
(7, 'TechArt Hub', 'Exploring art and technology', 'Innovation Square', 10, 'Mon-Fri: 10 AM - 8 PM, Sat: 11 AM - 5 PM'),
(8, 'Creative Minds Gallery', 'Supporting emerging artists', 'Arts District', 1, 'Thu-Sun: 12 PM - 6 PM'),
(9, 'Abstract Visions Gallery', 'Abstract and avant-garde art', 'Sculpture Gardens', 2, 'Tue-Sat: 10 AM - 7 PM'),
(10, 'Artistic Fusion Center', 'A blend of diverse artistic expressions', 'Cultural Quarter', 3, 'Wed-Fri: 1 PM - 9 PM, Sat: 10 AM - 6 PM');
```

```
(11, 'Sculpture Showcase', 'Highlighting the beauty of sculptures', 'Sculpture Park', 4, 'Mon-Sun: 8 AM - 6 PM'),  
(12, 'Minimalist Space', 'Minimalism in contemporary art', 'City Mall', 5, 'Tue-Sat: 11 AM - 5 PM');
```

-- Insert data into User_Favorite_Artwork junction table

```
INSERT INTO User_Favorite_Artwork VALUES
```

```
(1, 1), -- John Doe likes The Starry Night
```

```
(2, 2); -- Jane Smith likes Mona Lisa
```

-- Insert data into User_Favorite_Artwork table

```
INSERT INTO User_Favorite_Artwork (UserID, ArtworkID)
```

```
VALUES
```

```
(3, 3),
```

```
(4, 4),
```

```
(5, 5),
```

```
(6, 6),
```

```
(7, 7),
```

```
(8, 8),
```

```
(9, 9),
```

```
(10,3),
```

```
(11,1),
```

```
(12,2);
```

-- Insert data into Artwork_Gallery junction table

```
INSERT INTO Artwork_Gallery VALUES
```

```
(1, 1), -- The Starry Night is displayed in Modern Art Gallery
```

```
(2, 2); -- Mona Lisa is displayed in Classic Art Exhibit
```

```
INSERT INTO Artwork_Gallery (ArtworkID, GalleryID)
```

```
VALUES
```

```
(3, 3),
```

```
(4, 4),
```

```
(5, 5),
```

```
(6, 6),
```

```
(7, 7),
```

```
(8, 8),
```

```
(9, 9),
```

```
(3, 10),
```

```
(1, 11),
```

```
(2, 12);
```


Now, After successfully executing the above insertion query we got the following respective table:

Artwork Table:

The screenshot shows the MySQL Workbench interface with the 'Artwork' table selected. The table contains 10 rows of data, including titles like 'The Starry Night', 'Mona Lisa', and 'The Scream'. The 'Output' pane shows the execution of a 'select * from Artwork;' query, returning 10 rows.

ArtworkID	Title	Description	CreationDate	Medium	ImageURL
1	The Starry Night	Famous painting by Vincent van Gogh	1889-06-01	Oil on canvas	starry_night.jpg
2	Mona Lisa	Iconic portrait by Leonardo da Vinci	1503-01-01	Oil on wood	mona_lisa.jpg
3	Guernica	Powerful anti-war painting by Pablo Picasso	1937-04-26	Oil on canvas	guernica.jpg
4	The Persistence of Memory	Surrealist painting by Salvador Dalí	1931-01-01	Oil on canvas	persistence_of_memory.jpg
5	Starry Night Over the Rhône	Night sky painting by Vincent van Gogh	1888-09-01	Oil on canvas	starry_night_rhone.jpg
6	The Birth of Venus	Classic painting by Sandro Botticelli	1900-05-23	Tempera on canvas	birth_of_venus.jpg
7	The Last Supper	Religious masterpiece by Leonardo da Vinci	1788-09-18	Tempera on gesso	last_supper.jpg
8	Water Lilies	Series of paintings by Claude Monet	1899-07-27	Oil on canvas	water_lilies.jpg
9	American Gothic	Iconic painting by Grant Wood	2001-01-11	Oil on beaverboard	american_gothic.jpg
10	The Scream	Expressionist painting by Edvard Munch	1809-11-23	Oil, tempera, pastel, and crayon on cardboard	the_scream.jpg

Artist Table:

The screenshot shows the MySQL Workbench interface with the 'Artist' table selected. The table contains 10 rows of data, including names like 'Vincent van Gogh', 'Leonardo da Vinci', and 'Claude Monet'. The 'Output' pane shows the execution of a 'select * from artist;' query, returning 10 rows.

ArtistID	Name	Biography	BirthDate	Nationality	Website	ContactInformation
1	Vincent van Gogh	Dutch post-impressionist painter	1853-03-30	Dutch	http://vangogh.com	info@vangogh.com
2	Leonardo da Vinci	Italian polymath of the Renaissance	1452-04-15	Italian	http://leonardodavinci.com	info@leonardodavinci.com
3	Pablo Picasso	Spanish painter and sculptor	1881-10-25	Spanish	http://picasso.com	info@picasso.com
4	Salvador Dalí	Leading figure in the Surrealist movement	1904-05-11	Spanish	http://salvador dali.com	info@salvador dali.com
5	Edvard Munch	Norwegian painter and printmaker	1863-12-12	Norwegian	http://munch.com	info@munch.com
6	Sandro Botticelli	Italian painter of the Early Renaissance	1445-03-01	Italian	http://botticelli.com	info@botticelli.com
7	Grant Wood	American painter known for regionalist art	1891-02-13	American	http://grantwood.com	info@grantwood.com
8	Johannes Vermeer	Dutch Baroque painter	1632-10-31	Dutch	http://vermeer.com	info@vermeer.com
9	Claude Monet	French painter and founder of Impressionist painting	1840-11-14	French	http://monet.com	info@monet.com
10	Rembrandt van Rijn	Dutch Golden Age painter and etcher	1606-07-15	Dutch	http://rembrandt.com	info@rembrandt.com

User Table:

The screenshot shows the MySQL Workbench interface with the 'User Table' data displayed in the Result Grid. The table has columns: UserID, Username, Password, Email, First_Name, Last_Name, DateOfBirth, and Profile_Picture. The data is as follows:

UserID	Username	Password	Email	First_Name	Last_Name	DateOfBirth	Profile_Picture
1	artlover1	password123	user1@example.com	John	Doe	1980-05-15	NULL
2	artfanatic2	pass456	user2@example.com	Jane	Smith	1992-11-22	NULL
3	artcollector3	pass789	user3@example.com	Emily	Johnson	1985-09-18	NULL
4	artenthusiast4	artlover456	user4@example.com	Daniel	Williams	1990-07-25	NULL
5	galleryvisitor5	visit123	user5@example.com	Sophia	Brown	1988-12-03	NULL
6	creativeartist6	painter567	user6@example.com	Oliver	Smith	1995-04-30	NULL
7	designer7	designpass	user7@example.com	Ava	Martinez	1982-08-14	NULL
8	artlover8	123art	user8@example.com	Lucas	Taylor	1993-01-22	NULL
9	curator9	artcurator	user9@example.com	Isabella	Hernandez	1987-06-10	NULL
10	artstudent10	studentpass	user10@example.com	Ethan	Adams	1998-03-07	NULL

The SQL query in the editor is: `select * from user;`

The Output pane shows the following actions:

#	Time	Action	Message	Duration / Fetch
159	16:32:34	INSERT INTO Artwork_Gallery (ArtworkID, GalleryID) VALUES (3, 3), (4, 4), (5, 5), (6, 6), (7, ...)	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.000 sec
160	16:32:48	select * from artist LIMIT 0, 1000	10 row(s) returned	0.016 sec / 0.000 sec
161	16:33:22	select * from user LIMIT 0, 1000	12 row(s) returned	0.000 sec / 0.000 sec

Gallery Table:

The screenshot shows the MySQL Workbench interface with the 'Gallery Table' data displayed in the Result Grid. The table has columns: GalleryID, Name, Description, Location, Curator, and OpeningHours. The data is as follows:

GalleryID	Name	Description	Location	Curator	OpeningHours
1	Modern Art Gallery	Showcasing contemporary masterpieces	City Center	1	9 AM - 6 PM
2	Classic Art Exhibit	A collection of timeless artworks	Downtown	2	10 AM - 7 PM
3	Modern Art Haven	Contemporary art space	City Center	6	Mon-Fri: 10 AM - 6 PM, Sat: 12 PM - 4 PM
4	Gallery of Classics	Showcasing classical masterpieces	Downtown Plaza	7	Tue-Sat: 9 AM - 5 PM
5	Urban Expressions	Celebrating urban street art	Warehouse District	8	Wed-Sun: 11 AM - 7 PM
6	Nature's Palette Gallery	Focus on nature-inspired art	Green Park Avenue	9	Mon-Sat: 9 AM - 6 PM
7	TechArt Hub	Exploring art and technology	Innovation Square	10	Mon-Sat: 9 AM - 6 PM, Sun: 11 AM - 5 PM
8	Creative Minds Gallery	Supporting emerging artists	Arts District	1	Thu-Sun: 12 PM - 6 PM
9	Abstract Visions Gallery	Abstract and avant-garde art	Sculpture Gardens	2	Tue-Sat: 10 AM - 7 PM
10	Artistic Fusion Center	A blend of diverse artistic expressions	Cultural Quarter	3	Wed-Fri: 1 PM - 9 PM, Sat: 10 AM - 6 PM

The SQL query in the editor is: `select * from gallery;`

The Output pane shows the following actions:

#	Time	Action	Message	Duration / Fetch
160	16:32:48	select * from artist LIMIT 0, 1000	10 row(s) returned	0.016 sec / 0.000 sec
161	16:33:22	select * from user LIMIT 0, 1000	12 row(s) returned	0.000 sec / 0.000 sec
162	16:33:54	select * from gallery LIMIT 0, 1000	12 row(s) returned	0.000 sec / 0.000 sec

User_Favorite_Artwork table(Shows Relationship between tables):

The screenshot shows the MySQL Workbench interface. The SQL editor at the top contains the following queries:

```
(1, 1), -- The Starry Night is displayed in Modern Art Gallery
(2, 2); -- Mona Lisa is displayed in Classic Art Exhibit

select * from User_Favorite_Artwork;

INSERT INTO Artwork_Gallery (ArtworkID, GalleryID)
```

The Result Grid below the editor displays the data for the `User_Favorite_Artwork` table:

UserID	ArtworkID
1	1
11	1
2	2
12	2
3	3
10	3
4	4
5	5
6	6
7	7

The Action Output pane at the bottom shows the execution of three queries, each returning 12 rows:

- 161 16:33:22 select * from user LIMIT 0, 1000 (12 row(s) returned)
- 162 16:33:54 select * from gallery LIMIT 0, 1000 (12 row(s) returned)
- 163 16:34:27 select * from User_Favorite_Artwork LIMIT 0, 1000 (12 row(s) returned)

Artwork_Gallery table:(Shows relationship between Artwork and Gallery Table)

The screenshot shows the MySQL Workbench interface. The SQL editor at the top contains the following queries:

```
(1, 11),
(2, 12);

select * from artwork_gallery;
```

The Result Grid below the editor displays the data for the `artwork_gallery` table:

ArtworkID	GalleryID
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
3	10

The Action Output pane at the bottom shows the execution of three queries, each returning 12 rows:

- 162 16:33:54 select * from gallery LIMIT 0, 1000 (12 row(s) returned)
- 163 16:34:27 select * from User_Favorite_Artwork LIMIT 0, 1000 (12 row(s) returned)
- 164 16:35:21 select * from artwork_gallery LIMIT 0, 1000 (12 row(s) returned)

Thank You