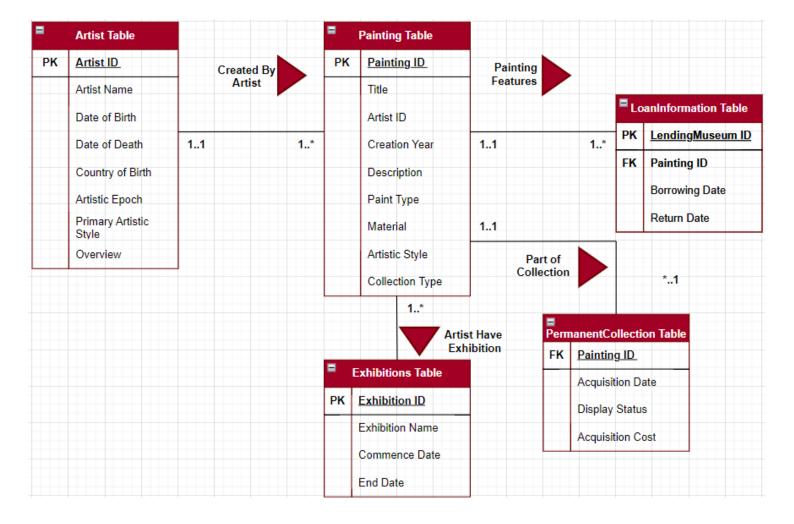
The Art Gallery Coursework- UML Diagram, SQL Scripts and Queries

Task 1- Creating an ERD Diagram for the Art Gallery



Entity	Primary Key	Foreign Key	Attribute	Reason
Artists Table	Artist ID		Name Date of Birth Date of Death Country of Birth Artistic Epoch Primary Artistic Style Overview	The Artist ID is designated as the primary key since it is distinctive marker used to find each of the diverse artists listed in the table.
Paintings Table	Painting ID	Artist ID	Title Artist ID Creation Year Description Paint Type Material Overview	The painting's ID will serve as a distinctive marker in this table, identifying the painter and making the artwork easier

				to locate.
Permanent Collection Table		Painting ID	Acquisition Date Display Status Acquisition Cost	The Permanent Collection doesn't possess its own primary key, yet it contains a foreign key linked to the paintings table known as 'Painting ID'.
Exhibitions Table	Exhibition ID		Name Commencement Date End Date	The Exhibition ID serves as the primary key since it allows you to find the Exhibition ID for a particular painter while doing queries.
LoanInformation Table	Lending Museum ID	Paintings ID	Borrowing Date Return Date	The Lending Museum ID serves as the distinctive marker indicating the specific paintings that artists are loaning out.

Task 2- Creating SQL Script for the Tables

Artists Table:

```
CREATE TABLE Artists (
   ArtistID INT PRIMARY KEY,
   Name VARCHAR(255) NOT NULL,
   DateOfBirth DATE,
   DateOfDeath DATE,
   CountryOfBirth VARCHAR(255),
   ArtisticEpoch VARCHAR(255),
   PrimaryArtisticStyle VARCHAR(255),
   Overview TEXT
);
```

Inserting values to Artists Table:

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)
VALUES (1, 'Hokusai', '1760-10-31', '1849-04-10', 'Japan', 'Edo period', 'Ukiyo-e', 'Katsushika Hokusai was a Japanese ukiyo-e painter and printmaker. He is best known for

the woodblock print series "Thirty-Six Views of Mount Fuji," which includes the famous print "The Great Wave off Kanagawa."');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (2, 'Frida Kahlo', '1907-07-06', '1954-07-03', 'Mexico', 'Surrealism', 'Self-Portraits, Pain, Identity, Cultural Heritage', 'Mexican painter known for her self-portraits, vibrant colors, and exploration of themes like pain, identity, and cultural heritage.');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (3, 'Salvador Dali', '1904-04-11', '1989-01-23', 'Spain', 'Surrealism', 'Surrealism', 'Salvador Dalí was a leading figure of the Surrealist movement. Known for his eccentric personality and imaginative works, he created iconic paintings such as "The Persistence of Memory."');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (4, 'Mary Cassatt', '1844-04-22', '1926-06,14', 'United States', 'Impressionism', 'Impressionism', 'Mary Cassatt was an American painter and printmaker associated with the Impressionist movement. She is known for her depictions of the intimate lives of women and children.');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (5, 'Kazimir Malevich', '1879-02-23', '1935-04-15', 'Ukraine', 'Suprematism', 'Suprematism', 'Kazimir Malevich was a Russian avant-garde artist and the founder of the Suprematist movement. His works, such as "Black Square," were groundbreaking in abstract art.');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (6, 'Joan Miró', '1893-04-20', '1983-12-25', 'Spain', 'Surrealism', 'Surrealism', 'Joan Miró was a Spanish painter, sculptor, and ceramicist associated with Surrealism. His works often featured imaginative, biomorphic forms and bright, expressive colors.');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (7, 'Yayoi Kusama', '1929-03-22', '2023-01-01', 'Japan', 'Contemporary Art', 'Polka Dots, Infinity, Self-Obliteration', 'Japanese contemporary artist known for her immersive polka dot installations, sculptures, and paintings, exploring themes of infinity, self-obliteration, and mental health.');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (8, 'Gustav Klimt', '1862-07-14', '1918-02-06', 'Austria', 'Symbolism and Art Nouveau', 'Symbolism and Art Nouveau', 'Gustav Klimt was an Austrian Symbolist painter

and one of the most prominent members of the Vienna Secession movement. He is known for his decorative and highly detailed works, including "The Kiss."");

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (9, 'Diego Velázquez', '1599-06-06', '1660-08-06', 'Spain', 'Baroque', 'Diego Velázquez was a Spanish Baroque painter who served as the court painter to King Philip IV. His masterpiece, "Las Meninas," is considered one of the greatest paintings in Western art.');

INSERT INTO Artists (ArtistID, Name, DateOfBirth, DateOfDeath, CountryOfBirth, ArtisticEpoch, PrimaryArtisticStyle, Overview)

VALUES (10, 'Tamara de Lempicka', '1898-04-16', '1980-03-18', 'Poland', 'Art Deco', 'Art Deco', 'Tamara de Lempicka was a Polish Art Deco painter known for her portraits, often portraying the elegance and sophistication of the Jazz Age. Her work is characterized by bold colors and geometric shapes.');

Painting Table:

```
CREATE TABLE Paintings (
PaintingID INT PRIMARY KEY,
Title VARCHAR(255) NOT NULL,
ArtistID INT,
CreationYear INT,
Description TEXT,
PaintType VARCHAR(100),
Material VARCHAR(100),
ArtisticStyle VARCHAR(100),
CollectionType VARCHAR(50),
FOREIGN KEY (ArtistID) REFERENCES Artists(ArtistID)
);
```

Inserting values to Painting Table:

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (1, "The Great Wave off Kanagawa", 1, '1830', 'This iconic woodblock print depicts a massive wave towering over three fishing boats, with Mount Fuji visible in the background. The wave, curling dramatically with foam and spray, captures the power and beauty of nature. The print showcases the juxtaposition of the enormous wave against the serene backdrop of the mountain.', 'Woodblock print', 'woodblocks', 'Ukiyo-e', 'Private collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (2, "Self-Portrait with Thorn Necklace and Hummingbird", 2, '1940', 'In this self-portrait, Frida Kahlo depicts herself wearing a thorn necklace adorned with a dead hummingbird. She stares directly at the viewer with a somber expression. Behind her, lush

tropical foliage forms the backdrop. The thorns piercing her neck symbolize pain and suffering, while the hummingbird is a symbol of hope and freedom.', 'Oil on canvas', 'Canvas', 'Surrealism', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (3, "The Persistence of Memory", 3, '1931', "The Persistence of Memory" is a surrealistic masterpiece depicting a dreamlike landscape with melting clocks draped over various objects. The landscape, with a distorted and barren backdrop, features several soft, melting pocket watches, one of which hangs over a tree branch.', 'Oil on canvas', 'Canvas', 'Surrealism', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (4, "The Child", 4, '1893', " It portrays a mother bathing her young child in a tub. The painting highlights the intimacy and tenderness between the mother and child, showcasing Cassatt', 'Oil on canvas', 'Oil', 'Impressionism', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (5, "Black Square", 5, '1915', "Black Square" is a radical and revolutionary piece, a simple black square painted on a white background. Malevich intended this work to represent the "zero point" of art, breaking away from representational art and embracing pure abstraction.', 'Oil on canvas', 'Oil', 'Suprematism', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (6, "The Farm", 6, '1921', "The Farm" depicts a scene of Mirós family farm in Mont-roig del Camp, Catalonia. Its a highly personal and detailed composition showcasing various elements of the rural landscape, including buildings, animals, crops, and people.', 'Oil on canvas', 'Oil', 'Surrealism', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (7, "Infinity Nets", 7, '1950', "Infinity Nets" paintings typically consist of repetitive and intricate patterns of interlocking, seemingly endless nets or dots covering the entire canvas.', 'Oil on canvas', 'Oil', 'Infinity', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (8, "The Kiss", 8, '1907', "The Kiss" depicts a couple locked in an intimate embrace against a golden, mosaic-like background. The man is cloaked in robes of geometrically patterned gold, while the woman is adorned in a flowery gown.', 'Oil and gold leaf on canvas', 'Oil', 'Symbolism and Art Nouveau', 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (9, "Las Meninas" , 9, '1656' , "Las Meninas" is a complex and enigmatic work that portrays a moment in the royal court of King Philip IV of Spain. The painting features a detailed composition where Velázquez himself is seen painting a large canvas, possibly depicting the royal family, as the Infanta Margarita and her attendants are present in the room.' , 'Oil on canvas' , 'Oil' , 'Baroque' , 'Permanent Collection');

INSERT INTO Paintings (PaintingID, Title, ArtistID, CreationYear, Description, PaintType, Material, ArtisticStyle, CollectionType)

VALUES (10, "Autoportrait", 10, '1929', "Autoportrait" portrays the artist seated in a green Bugatti, looking directly at the viewer. She is depicted as a confident and glamorous figure, dressed in stylish attire, reflecting the elegance and sophistication of the Art Deco era.', 'Oil on panel or canvas', 'Oil', 'Art Deco', 'Permanent Collection');

PermanentCollection Table:

```
CREATE TABLE PermanentCollection (
PaintingID INT,
AcquisitionDate DATE,
DisplayStatus VARCHAR(50),
AcquisitionCost VARCHAR(50),
FOREIGN KEY (PaintingID) REFERENCES Paintings(PaintingID));
```

Inserting values to PermanentCollection Table:

INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus, AcquisitionCost)

VALUES (1, '2023-11-30', 'On Display', 250000000);

INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus, AcquisitionCost)

VALUES (2, '2023-10-15', 'On Display', 500000);

INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus, AcquisitionCost)

VALUES (3, '2023-08-20', 'On Display', 800000);

INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus, AcquisitionCost)

VALUES (4, '2023-09-10', 'On Display', 600000);

INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus, AcquisitionCost)

VALUES (5, '2023-11-05', 'On Display', 900000);

INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus, AcquisitionCost)

VALUES (6, '2023-12-15', 'On Display', 700000);

```
INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus,
AcquisitionCost)
VALUES (7, '2023-10-20', 'On Display', 600000);
INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus,
AcquisitionCost)
VALUES (8, '2023-11-25', 'On Display', 850000);
INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus,
AcquisitionCost)
VALUES (9, '2023-12-01', 'On Display', 950000);
INSERT INTO PermanentCollection (PaintingID, AcquisitionDate, DisplayStatus,
AcquisitionCost)
VALUES (10, '2023-11-05', 'On Display', 700000);
LoanInformation Table:
CREATE TABLE LoanInformation (
  PaintingID INT,
  LendingMuseumID VARCHAR(255), PRIMARY KEY
  BorrowingDate DATE,
  ReturnDate DATE,
  FOREIGN KEY (PaintingID) REFERENCES Paintings(PaintingID)
);
Inserting values to LoanInformation Table:
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate,
ReturnDate)
VALUES (1, 1, '2023-12-15', '2024-02-15');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate,
ReturnDate)
VALUES (2, 2, '2023-11-20', '2024-01-20');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate,
ReturnDate)
VALUES (3, 3, '2023-10-15', '2024-01-15');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate,
ReturnDate)
VALUES (4, 4, '2023-09-20', '2023-12-20');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate,
ReturnDate)
VALUES (5, 5, '2023-11-10', '2024-02-10');
```

```
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate, ReturnDate)
VALUES (6, 6, '2023-12-05', '2024-02-05');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate, ReturnDate)
VALUES (7, 7, '2023-10-20', '2024-01-20');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate, ReturnDate)
VALUES (8, 8, '2023-11-15', '2024-02-15');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate, ReturnDate)
VALUES (9, 9, '2023-12-10', '2024-03-10');
INSERT INTO LoanInformation (PaintingID, LendingMuseumID, BorrowingDate, ReturnDate)
VALUES (10, 10, '2023-11-20', '2024-02-20');
```

Exhibitions Table:

```
CREATE TABLE Exhibitions (
ExhibitionID INT PRIMARY KEY,
Name VARCHAR(255) NOT NULL,
CommencementDate DATE,
EndDate DATE
);
```

Inserting values into Exhibitions Table:

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (1, 'The Great Wave off Kanagawa', '2023-09-15', '2023-12-15');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (2, 'The Two Fridas', '2023-10-20', '2024-01-15');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (3, 'The Elephants', '2023-11-15', '2024-02-15');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (4, 'Mother and Child', '2023-11-20', '2024-02-20');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (5, 'Black Square', '2023-11-01', '2024-02-01');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (6, 'Woman and Bird', '2023-11-20', '2024-02-20');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (7, 'Infinity Mirrored Room', '2023-09-20', '2023-12-20');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (8, 'The Kiss', '2023-10-10', '2024-01-10');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (9, 'Las Meninas', '2023-09-15', '2023-12-15');

INSERT INTO Exhibitions (ExhibitionID, Name, CommencementDate, EndDate) VALUES (10, 'Young Lady with Gloves', '2023-12-01', '2024-03-01');

Task 3/4- Implement Ten SQL Query Scripts into Table

Query No	Purpose	Tables Involved	SQL	Correct Execution
1	The describe function's main objective is to produce the data categories for every value and determine whether or not each column is empty. It also indicates what part is the foreign and primary key.	Artists Table	DESCRIBE Artists;	YES
2	This query aims to retrieve information from the Artists table that corresponds to the artists' names, such as the first artist listed below, "Hokusai".	Artists Table	SELECT Name FROM Artists WHERE Name = 'Hokusai';	YES
3	The primary objective of the CONCAT function is to merge specific columns, like the Artistic Epoch and Name, utilizing a series of letters to generate a complete sentence.	Artists Table	SELECT CONCAT(Name, ' is a ', ArtisticEpoch) AS ArtisticEpoch FROM Artists;	YES
4	This query aims to ascertain whether the painting's Acquisition cost surpasses the standard cost of acquisition.	Permanent Collection Table	SELECT* FROM Permanent Collection WHERE Acquisition Cost> (SELECT AVG(Acquisition Cost) FROM Permanent Collection);	YES
5	Choosing every entry of the aggregate count of paintings within the Permanent	Permanent Collection	SELECT COUNT(*) AS	YES

	collection table.	Table	TotalRecords FROM PermanentCollecti	
			on;	
6	Determining the overall expense of the paintings.	Permanent Collection Table	SELECT SUM(Acquisition Cost) AS TotalAcquisition Cost FROM PermanentColle ction;	YES
7	Determining the most expensive paintings.	Permanent Collection Table	SELECT * FROM PermanentColle ction ORDER BY AcquisitionCost DESC LIMIT 1;	YES
8	Determining the query to identify the most costly art collections.	Permanent Collection Table	SELECT PaintingID, AcquisitionCost FROM PermanentColle ction ORDER BY AcquisitionCost DESC LIMIT 5;	YES
9	Determining the query to locate paintings that are worth more than 1 million.	Permanent Collection Table	SELECT PaintingID, AcquisitionCost FROM PermanentColle ction WHERE AcquisitionCost > 1000000;	YES
10	Determining the subquery that aims to locate an initial art that has an acquisition date.	Permanent Collection Table	SELECT MIN(Acquisition Date) AS EarliestAcquisiti onDate FROM PermanentColle ction;	YES

Query Output:

1) Using the 'DESCRIBE' function query

+ Options

Field	Туре	Null	Key	Default	Extra
ArtistID	int	NO	PRI	NULL	
Name	varchar(255)	NO		NULL	
DateOfBirth	date	YES		NULL	
DateOfDeath	date	YES		NULL	
CountryOfBirth	varchar(255)	YES		NULL	
ArtisticEpoch	varchar(255)	YES		NULL	
PrimaryArtisticStyle	varchar(255)	YES		NULL	
Overview	text	YES		NULL	

2) Using the 'WHERE' function query





3) Using the 'CONCAT' function query

+ Options



4) Using the 'COUNT' subquery to determine the average cost

PaintingID	AcquisitionDate	DisplayStatus	AcquisitionCost
1	2023-11-30	On Display	250000000
2	2023-10-15	On Display	500000
3	2023-08-20	On Display	800000
4	2023-09-10	On Display	600000
5	2023-11-05	On Display	900000
6	2023-12-15	On Display	700000
7	2023-10-20	On Display	600000
8	2023-11-25	On Display	850000
9	2023-12-01	On Display	950000
10	2023-11-05	On Display	700000

5) Determining all the records

+ Options

TotalRecords

10

6) Using 'COUNT' to find the entire price for every painting

+ Options

Total Acquisition Cost

256600000

7) Using 'ORDER BY' and 'LIMIT', locate the most expensive painting

+ Options

PaintingID	AcquisitionDate	DisplayStatus	AcquisitionCost
9	2023-12-01	On Display	950000

8) Determining the most costly paintings

+ Options

PaintingID	AcquisitionCost
9	950000
5	900000
8	850000
3	800000
6	700000

9) Locating paintings with an acquisition cost of more than 1 million

+ Options

PaintingID	AcquisitionCost	
1	250000000	

10) Determining the very first acquisition date of a painting

+ Options

EarliestAcquisitionDate 2023-08-20

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