

ENTITY	PRIMARY KEY (PK)	FOREIGN KEY (FK)	RELATIONSHIP
Painting	paintID	artistName	PaintID is unique as there is a unique number for each painting
Artist	artistName	artistName	Artist name is unique for each artist. PK AND FK.
Internal Collection	permanentcollectionID	paintID	Each collection has a unique ID number and are related to the mother table painting where there are the paintID
Borrowed Collection	externalMuseumID	paintID	Each museum has a unique identification and are related to the parent paintID from our museum
Exhibition	ExhibitionID	paintID	Each exhibition has a unique ID and is linked to the parent painting table with the FK paintID
Exhibition-painting	ExhibitionID paintID	ExhibitionID paintID	The table has the two PK and FK with two unique attributes

SQL SCRIPT :

```
CREATE TABLE painting
(
  paintID int(6) ,
  artistName varchar(20) ,
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year int(6) ,
title char(90) ,
description char(200) ,
type char(8) ,
material char(20) ,
style char(30)

);

```

```

INSERT INTO painting (paintID, artistName, year, title, description, type, material, style)
VALUES
(101, 'Jackson Pollock',1943,'Mural','several human figures walking','oil','canvas','abstract'),
(202,'Vsilij Kandinskij',1925,'Yellow,Red,Blu','geometrical shapes','oil','canvas','abstract'),
(303,'Pablo Picasso',1937,'Guernica','Bombing of Guernica','oil','canvas','Cubism'),
(404,'Henri Matisse',1912,'Goldfish','Animal Painting','oil','canvas','post-impressionism'),
(505,'Vincent van Gogh',1889,'Irises','Iries Garden','oil','canvas','impressionism'),
(606,'Claude Monet',1873,'Les Coquelicots', 'Poppies Garden','oil','canvas','impressionism'),
(707,'Salvador Dali',1944,'Dream Caused by the Flight of a Bee', 'hand-painted dream
photograph','oil','wood','surrealism'),
(808,'Rene Magritte',2010,'Les amants','Two lovers kissing with the head
covered','oil','canvas','surrealism'),
(909,'Rene Magritte', 1929,'The Treachery of Images','This Is Not a
Pipe','oil','canvas','surrealism'),
(1000,'Max Ernst',1927,'Forest and Dove','bizarre, abstract trees','oil','canvas','surrealism');

```

```

CREATE TABLE artist
(
  artistName varchar(30) ,
  country varchar(15) ,
  era varchar(40) ,
  DateOfBirth date,
  DateOfDeath date,
  main_style varchar(30) ,
  description varchar(100)

);

```

```

INSERT INTO artist (artistName, country,era, DateOfBirth ,DateOfDeath , main_style,
description) VALUES
('Jackson Pollock','USA','twentieth century',STR_TO_DATE('01-01-1912','%d-%m-%Y'),
STR_TO_DATE('11-08-1956','%d-%m-%Y'), 'abstract expressionism ','drip technique'),

```

('Vasilij Kandinskij', 'Russia', 'twentieth century', STR_TO_DATE('16-12-1866', '%d-%m-%Y'),
 STR_TO_DATE('13-12-1944', '%d-%m-%Y'), 'spiritual abstraction', 'pioneer of abstract art'),
 ('Pablo Picasso', 'Spain', 'twentieth century', STR_TO_DATE('25-10-1881', '%d-%m-%Y'),
 STR_TO_DATE('08-04-1973', '%d-%m-%Y'), 'proto-cubist', 'pioneer of modern art'),
 ('Henri Matisse', 'France', 'twentieth century', STR_TO_DATE('31-12-1869', '%d-%m-%Y'),
 STR_TO_DATE('03-11-1954', '%d-%m-%Y'), 'fauvism', 'revolutionary developments in the
 visual arts'),
 ('Vincent van Gogh', 'Netherlands', 'nineteenth century', STR_TO_DATE('30-03-1853', '%d-%m-%Y'),
 STR_TO_DATE('29-07-1890', '%d-%m-%Y'), 'post-impressionism', 'most famous and
 influential figures in Western art history'),
 ('Claude Monet', 'France', 'nineteenth century', STR_TO_DATE('14-11-1840', '%d-%m-%Y'),
 STR_TO_DATE('05-12-1926', '%d-%m-%Y'), 'impressionism', 'the most consistent and
 prolific practitioner of impressionism s philosophy'),
 ('Salvador Dali', 'Spain', 'twentieth century', STR_TO_DATE('11-05-1904', '%d-%m-%Y'),
 STR_TO_DATE('23-01-1989', '%d-%m-%Y'), 'cubism', 'Spanish surrealist artist renowned
 for his technical skill, precise draftsmanship, and the striking and bizarre images in his
 work. '),
 ('Rene Magritte', 'Belgium', 'twentieth century', STR_TO_DATE('21-11-1989', '%d-%m-%Y'),
 STR_TO_DATE('15-08-1967', '%d-%m-%Y'), 'surrealism', 'his work is known for
 challenging observers preconditioned perceptions of reality'),
 ('Max Ernst', 'Germany', 'twentieth century', STR_TO_DATE('02-04-1891', '%d-%m-%Y'),
 STR_TO_DATE('01-04-1976', '%d-%m-%Y'), 'Dada', 'primary pioneer of the Dada
 movement and surrealism');

CREATE TABLE internalCollection

(
 permanentCollectionId int(5) ,
 cost decimal(10,2) ,
 display varchar(20) ,
 dateAcquisition date ,
 store varchar(10) ,
 paintID int(6)

);

INSERT INTO internalCollection (permanentCollectionId, cost, display, dateAcquisition, store ,paintID) VALUES

(2009, 5055.22, 'Main Room', STR_TO_DATE('01-02-2001', '%d-%m-%Y'), 'notInStore', 101),
 (2010, 8088.34, 'Main Room', STR_TO_DATE('01-02-2003', '%d-%m-%Y'), 'notInStore', 202),
 (2011, 1000.12, 'not displayed', STR_TO_DATE('01-02-2005', '%d-%m-%Y'), 'inStore', 303),
 (2015, 10057.89, 'not displayed', STR_TO_DATE('01-02-1995', '%d-%m-%Y'), 'inStore', 404),
 (2021, 9999.99, 'Main Room', STR_TO_DATE('01-02-2010', '%d-%m-%Y'), 'notInStore', 505);

CREATE TABLE borrowedCollection

```
(
    externalMuseumId int(5) ,
    museumName char(14) ,
    BorrowDate date ,
    returnDate date ,
    paintID int(6)

);
```

```
INSERT INTO borrowedCollection (externalMuseumId, museumName, borrowDate,
returnDate, paintID) VALUES
(21, 'Paris Museum', STR_TO_DATE('01-02-2001','%d-%m-%Y'), STR_TO_DATE('10-10-
2022','%d-%m-%Y'),606),
(22, 'Paris Museum', STR_TO_DATE('01-03-2015','%d-%m-%Y'),STR_TO_DATE ('31-12-
2021','%d-%m-%Y'),707),
(23, 'Belgium Museum', STR_TO_DATE('03-07-2019','%d-%m-%Y'), STR_TO_DATE('10-10-
2024','%d-%m-%Y'),808),
(24, 'Rome Museum', STR_TO_DATE('13-02-2001','%d-%m-%Y'), STR_TO_DATE('12-11-
2022','%d-%m-%Y'),909),
(25, 'Berlin Museum', STR_TO_DATE('09-02-2005','%d-%m-%Y'),STR_TO_DATE ('10-10-
2035','%d-%m-%Y'),1000);
```

```
CREATE TABLE exhibition
(
    exhibitionId int(5) ,
    name char(14) ,
    startDate date ,
    endDate date ,
    paintID int(6)
);
```

```
INSERT INTO exhibition (exhibitionId, name, startDate, endDate,paintID) VALUES
(501, 'summer', STR_TO_DATE('05-06-2021','%d-%m-%Y'), STR_TO_DATE('12-12-2021','%d-
%m-%Y'),101),
(809, 'winter', STR_TO_DATE('10-07-2022','%d-%m-%Y'), STR_TO_DATE('13-12-2022','%d-
%m-%Y'),202),
(407, 'winter', STR_TO_DATE('14-02-2021','%d-%m-%Y'),STR_TO_DATE ('14-12-2021','%d-
%m-%Y'),101),
(302, 'autumn', STR_TO_DATE('16-02-2021','%d-%m-%Y'), STR_TO_DATE('16-12-2021','%d-
%m-%Y'),202),
```

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(999, 'spring', STR_TO_DATE('19-02-2021', '%d-%m-%Y'), STR_TO_DATE('17-12-2021', '%d-%m-%Y'), 505),
(998, 'summer', STR_TO_DATE('16-02-2021', '%d-%m-%Y'), STR_TO_DATE('29-12-2021', '%d-%m-%Y'), 303),
(123, 'New year', STR_TO_DATE('01-01-2021', '%d-%m-%Y'), STR_TO_DATE('21-12-2021', '%d-%m-%Y'), 404),
(231, 'End year', STR_TO_DATE('16-02-2021', '%d-%m-%Y'), STR_TO_DATE('22-12-2021', '%d-%m-%Y'), 606),
(312, 'Christmas', STR_TO_DATE('24-12-2011', '%d-%m-%Y'), STR_TO_DATE('28-12-2011', '%d-%m-%Y'), 707),
(213, 'spring', STR_TO_DATE('19-03-2021', '%d-%m-%Y'), STR_TO_DATE('23-12-2021', '%d-%m-%Y'), 808),
(808, 'autumn', STR_TO_DATE('10-04-2021', '%d-%m-%Y'), STR_TO_DATE('24-12-2021', '%d-%m-%Y'), 909),
(802, 'New Year', STR_TO_DATE('09-06-2021', '%d-%m-%Y'), STR_TO_DATE('29-12-2021', '%d-%m-%Y'), 1000),
(507, 'End Year', STR_TO_DATE('23-08-2021', '%d-%m-%Y'), STR_TO_DATE('30-12-2021', '%d-%m-%Y'), 1000);
```

```
ALTER TABLE painting ADD CONSTRAINT pk_painting_paintID PRIMARY KEY (paintID);
```

```
ALTER TABLE artist ADD CONSTRAINT pk_artist_artistName PRIMARY KEY (artistName);
```

```
ALTER TABLE artist ADD UNIQUE(artistName);
```

```
ALTER TABLE painting ADD CONSTRAINT fk_painting_artistName FOREIGN KEY (artistName)
REFERENCES artist(artistName);
```

```
ALTER TABLE internalCollection ADD CONSTRAINT
pk_internalCollection_permanentCollectionId PRIMARY KEY (permanentCollectionId);
```

```
ALTER TABLE borrowedCollection ADD CONSTRAINT fk_borrowedCollection_paintID
FOREIGN KEY (paintID) REFERENCES painting(paintID);
```

```
ALTER TABLE borrowedCollection ADD CONSTRAINT
pk_borrowedCollection_externalMuseumId PRIMARY KEY (externalMuseumId);
```

```
ALTER TABLE internalCollection ADD CONSTRAINT fk_internalCollection_paintID FOREIGN
KEY (paintID) REFERENCES painting(paintID);
```

```
ALTER TABLE exhibition ADD CONSTRAINT pk_exhibition_exhibitionId PRIMARY KEY
(exhibitionId);
```

ALTER TABLE exhibition ADD CONSTRAINT fk_exhibition_paintID FOREIGN KEY (paintID)
REFERENCES painting(paintID) ;

SQL QUERIES:

Query N:	Purpose	Tables involed	Sql	Correct Execution
1	Shows how many artist there are and their painting name with painting id	Painting-artist	SELECT artist.artistName, painting.description, painting.paintID FROM artist, painting WHERE painting.artistName = artist.artistName;	YES
2	Shows the average cost of the paintings	internalCollection	SELECT AVG(cost) FROM internalCollection	YES
3	Shows all the artist from the twentieth century	artist	SELECT artistName FROM artist WHERE era = 'twentieth century '	yes
4	Shows artists which has one type of painting style and the description of the painting	painting	SELECT artistName, description FROM painting WHERE style ='impressionism'	yes

