Shubham Arun Malankar

PROJECT PHASE 2

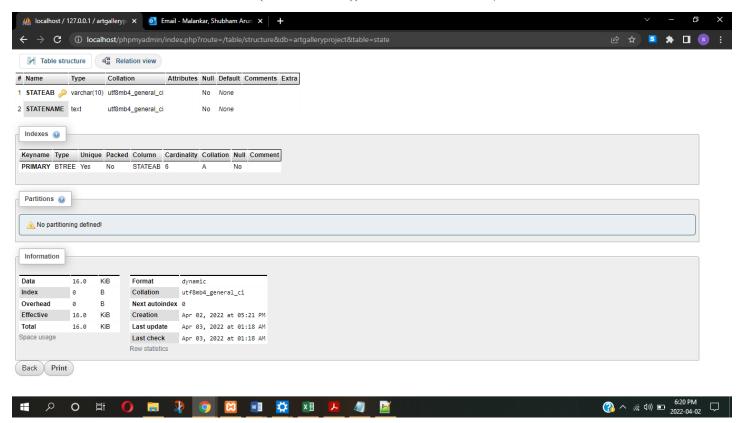## PART 1 : - Create statement queries
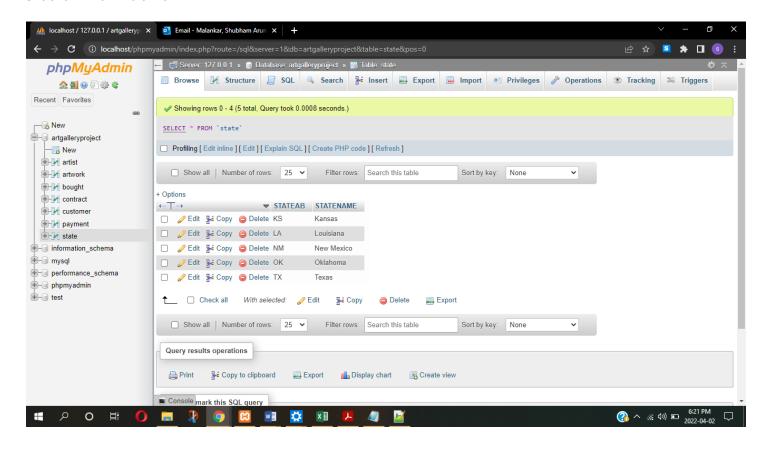
1. 'state' table –

> CREATE TABLE `artgalleryproject`.`state` (
>
> `STATEAB` VARCHAR(10) NOT NULL ,
>
> `STATENAME` TEXT NOT NULL ,
>
> PRIMARY KEY (`STATEAB `)) ENGINE = InnoDB;

2. 'artist' table –

CREATE TABLE `artgalleryproject`.`artist` (

`AID` INT(50) NOT NULL ,

`NAME` TEXT NOT NULL ,

`BIRTHDATE` DATE NOT NULL ,

`DEATHDATE` DATE NULL DEFAULT NULL ,

`COMMISSION` INT(50) NOT NULL ,
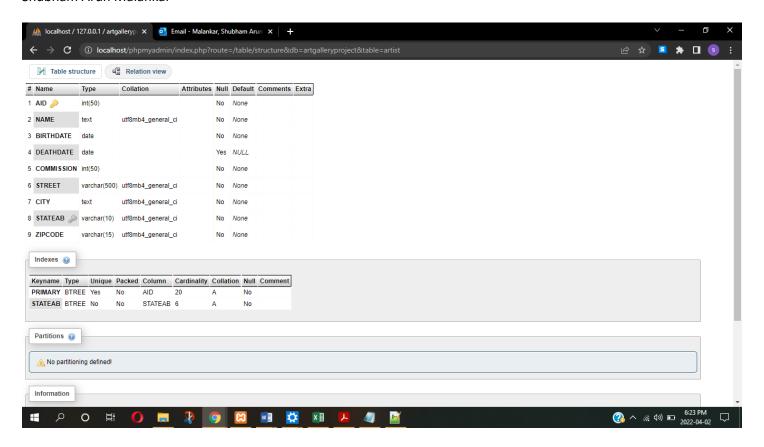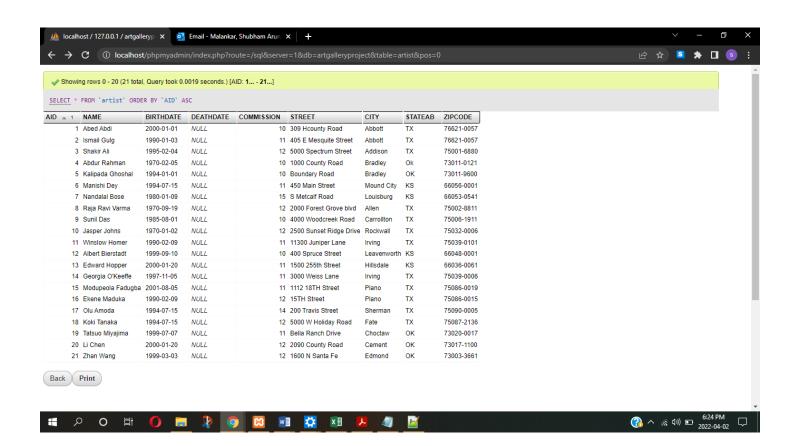
`STREET` VARCHAR(500) NOT NULL ,

`CITY` TEXT NOT NULL ,

`STATEAB` VARCHAR(10) NOT NULL ,

`ZIPCODE` VARCHAR(15) NOT NULL ,

PRIMARY KEY (`AID`),

FOREIGN KEY(STATEAB) REFERENCES state(STATEAB)) ENGINE = InnoDB;

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Table structure | Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	AID	int(50)			No	None		
2	NAME	text	utf8mb4_general_ci		No	None		
3	BIRTHDATE	date			No	None		
4	DEATHDATE	date			Yes	NULL		
5	COMMISSION	int(50)			No	None		
6	STREET	varchar(500)	utf8mb4_general_ci		No	None		
7	CITY	text	utf8mb4_general_ci		No	None		
8	STATEAB	varchar(10)	utf8mb4_general_ci		No	None		
9	ZIPCODE	varchar(15)	utf8mb4_general_ci		No	None		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	AID	20	A	No	
STATEAB	BTREE	No	No	STATEAB	6	A	No	

Partitions

⚠ No partitioning defined!

Information

Showing rows 0 - 20 (21 total, Query took 0.0019 seconds.) [AID: 1... - 21...]

SELECT * FROM `artist` ORDER BY `AID` ASC

AID	NAME	BIRTHDATE	DEATHDATE	COMMISSION	STREET	CITY	STATEAB	ZIPCODE
1	Abed Abdi	2000-01-01	NULL	10	309 Hcounty Road	Abbott	TX	76621-0057
2	Ismail Gulg	1990-01-03	NULL	11	405 E Mesquite Street	Abbott	TX	76621-0057
3	Shakir Ali	1995-02-04	NULL	12	5000 Spectrum Street	Addison	TX	75001-6880
4	Abdur Rahman	1970-02-05	NULL	10	1000 County Road	Bradley	Ok	73011-0121
5	Kalipada Ghoshal	1994-01-01	NULL	10	Boundary Road	Bradley	OK	73011-9600
6	Manishi Dey	1994-07-15	NULL	11	450 Main Street	Mound City	KS	66056-0001
7	Nandalal Bose	1980-01-09	NULL	15	S Metcalf Road	Louisburg	KS	66053-0541
8	Raja Ravi Varma	1970-09-19	NULL	12	2000 Forest Grove blvd	Allen	TX	75002-8811
9	Sunil Das	1985-08-01	NULL	10	4000 Woodcreek Road	Carrollton	TX	75006-1911
10	Jasper Johns	1970-01-02	NULL	12	2500 Sunset Ridge Drive	Rockwall	TX	75032-0006
11	Winslow Homer	1990-02-09	NULL	11	11300 Juniper Lane	Irving	TX	75039-0101
12	Albert Bierstadt	1999-09-10	NULL	10	400 Spruce Street	Leavenworth	KS	66048-0001
13	Edward Hopper	2000-01-20	NULL	11	1500 255th Street	Hillsdale	KS	66036-0061
14	Georgia O'Keeffe	1997-11-05	NULL	11	3000 Weiss Lane	Irving	TX	75039-0006
15	Modupeola Fadugba	2001-08-05	NULL	11	1112 18TH Street	Plano	TX	75086-0019
16	Ekene Maduka	1990-02-09	NULL	12	15TH Street	Plano	TX	75086-0015
17	Olu Amoda	1994-07-15	NULL	14	200 Travis Street	Sherman	TX	75090-0005
18	Koki Tanaka	1994-07-15	NULL	12	5000 W Holiday Road	Fate	TX	75087-2136
19	Tatsuo Miyajima	1999-07-07	NULL	11	Bella Ranch Drive	Choctaw	OK	73020-0017
20	Li Chen	2000-01-20	NULL	12	2090 County Road	Cement	OK	73017-1100
21	Zhan Wang	1999-03-03	NULL	12	1600 N Santa Fe	Edmond	OK	73003-3661

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3. 'customer' table –

CREATE TABLE `artgalleryproject`.`customer` (

`CID` INT(50) NOT NULL ,

`NAME` TEXT NOT NULL ,
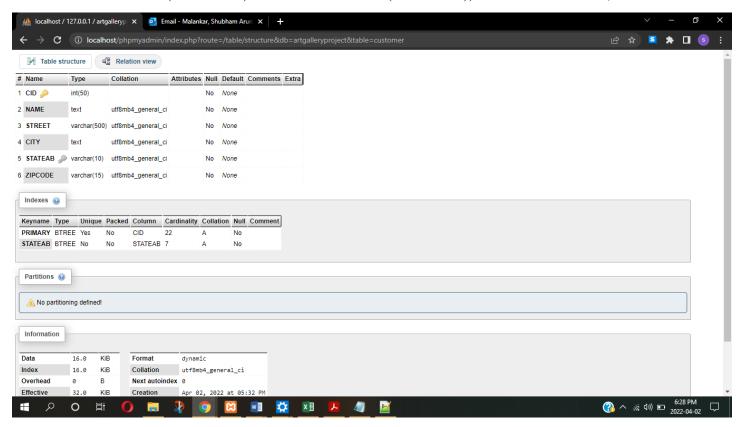
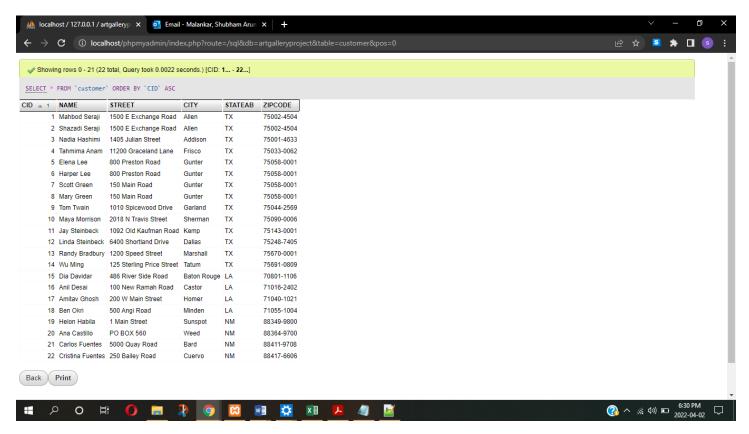`STREET` VARCHAR(500) NOT NULL ,

`CITY` TEXT NOT NULL ,

`STATEAB` VARCHAR(10) NOT NULL ,

`ZIPCODE` INT(10) NOT NULL ,

PRIMARY KEY (`CID`),

FOREIGN KEY(STATEAB) REFERENCES state(STATEAB)) ENGINE = InnoDB;

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SELECT * FROM `customer` ORDER BY `CID` ASC

CID ▲ 1	NAME	STREET	CITY	STATEAB	ZIPCODE
1	Mahbod Seraji	1500 E Exchange Road	Allen	TX	75002-4504
2	Shazadi Seraji	1500 E Exchange Road	Allen	TX	75002-4504
3	Nadia Hashimi	1405 Julian Street	Addison	TX	75001-4633
4	Tahmima Anam	11200 Graceland Lane	Frisco	TX	75033-0062
5	Elena Lee	800 Preston Road	Gunter	TX	75058-0001
6	Harper Lee	800 Preston Road	Gunter	TX	75058-0001
7	Scott Green	150 Main Road	Gunter	TX	75058-0001
8	Mary Green	150 Main Road	Gunter	TX	75058-0001
9	Tom Twain	1010 Spicewood Drive	Garland	TX	75044-2569
10	Maya Morrison	2018 N Travis Street	Sherman	TX	75090-0006
11	Jay Steinbeck	1092 Old Kaufman Road	Kemp	TX	75143-0001
12	Linda Steinbeck	6400 Shortland Drive	Dallas	TX	75248-7405
13	Randy Bradbury	1200 Speed Street	Marshall	TX	75670-0001
14	Wu Ming	125 Sterling Price Street	Tatum	TX	75691-0809
15	Dia Davidar	486 River Side Road	Baton Rouge	LA	70801-1106
16	Anil Desai	100 New Ramah Road	Castor	LA	71016-2402
17	Amitav Ghosh	200 W Main Street	Homer	LA	71040-1021
18	Ben Okri	500 Angi Road	Minden	LA	71055-1004
19	Helon Habila	1 Main Street	Sunspot	NM	88349-9800
20	Ana Castillo	PO BOX 560	Weed	NM	88364-9700
21	Carlos Fuentes	5000 Quay Road	Bard	NM	88411-9708
22	Cristina Fuentes	250 Bailey Road	Cuervo	NM	88417-6606

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4. 'artwork' table –

CREATE TABLE `artgalleryproject`.`artwork` (

`AID` INT(50) NOT NULL ,

`ARTID` INT(50) NOT NULL ,

`TITLE` TEXT NOT NULL ,

`CREATIONDATE` DATE NOT NULL ,

`ACQUISITIONDATE` DATE NOT NULL ,

`PRICE` DECIMAL(11,2) NOT NULL ,

`FORM` TEXT NOT NULL ,

PRIMARY KEY (`ARTID`) ,

FOREIGN KEY(aid) REFERENCES artist(AID)) ENGINE = InnoDB;

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Table structure | **Relation view**

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	AID 🔑	int(50)			No	None		
2	ARTID 🔑	int(50)			No	None		
3	TITLE	text	utf8mb4_general_ci		No	None		
4	CREATIONDATE	date			No	None		
5	ACQUISITIONDATE	date			No	None		
6	PRICE	decimal(11,2)			No	None		
7	FORM	text	utf8mb4_general_ci		No	None		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	ARTID	60	A	No	
AID	BTREE	No	No	AID	60	A	No	

Partitions

⚠ No partitioning defined!

Information

Data	16.0	KiB		Format	dynamic
Index	32.0	KiB		Collation	utf8mb4_general_ci

Showing rows 0 - 59 (60 total, Query took 0.0010 seconds.) [ARTID: **1...** - **60...**]

SELECT * FROM `artwork` ORDER BY `ARTID` ASC

AID	ARTID ▲ 1	TITLE	CREATIONDATE	ACQUISITIONDATE	PRICE	FORM
1	1	Refugee Camp	2020-09-09	2021-02-07	12000.00	painting
1	2	Waiting	2020-12-28	2021-02-07	15000.00	painting
1	3	Palestenian Women	2021-01-01	2021-02-07	1700.00	painting
2	4	Al Momin	1920-02-19	1921-03-09	20000.00	painting
2	5	God	1921-01-01	1921-07-08	22000.00	painting
3	6	Bird	2021-02-04	2021-05-04	40000.00	sculpture
3	7	Leaves	2021-01-04	2021-07-07	30000.00	sculpture
4	8	The Holy Man	2014-01-01	2014-01-02	10000.00	sculpture
5	9	Salvador Dali	2014-01-01	2015-01-01	190.00	print
6	10	Landscape	2019-01-25	2020-01-01	200.00	print
6	11	Musician	2020-01-25	2021-01-01	15000.00	sculpture
6	12	Sunset	2020-06-25	2021-08-01	19000.00	painting
7	13	Singawala	2015-05-20	2017-07-02	10000.00	painting
8	14	Shakuntala	2000-09-27	2001-08-19	50000.00	painting
9	15	Grey Horse	1989-07-01	1999-07-10	10000.00	painting
9	16	Blue Horse	1989-08-01	1999-08-15	20000.00	sculpture
9	17	The Lady	1989-09-01	1999-09-17	30000.00	painting
9	18	Horse in MoonLight	1989-10-01	1999-10-21	40000.00	painting
10	19	Flag	2000-01-01	2000-05-05	12000.00	painting
10	20	Three Flags	2000-09-19	2000-12-12	11500.00	painting
10	21	Corpse and Mirror	2015-01-01	2016-01-01	14000.00	painting
10	22	Map	2017-08-09	2018-12-12	19000.00	painting
11	23	Fishing Boats	1990-01-10	1991-10-19	12000.00	painting
11	24	The Gulf Stream	1992-03-04	1993-03-04	15000.00	painting
11	25	A Basket of Clams	1993-04-05	1994-04-05	16000.00	painting

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AID	ARTID	TITLE	CREATIONDATE	ACQUISITIONDATE	PRICE	FORM
10	21	Corpse and Mirror	2015-01-01	2016-01-01	14000.00	painting
10	22	Map	2017-08-09	2018-12-12	19000.00	painting
11	23	Fishing Boats	1990-01-10	1991-10-19	12000.00	painting
AID	ARTID ▲ 1	TITLE	CREATIONDATE	ACQUISITIONDATE	PRICE	FORM
11	25	A Basket of Clams	1993-04-05	1994-04-05	16000.00	painting
11	26	Glass Windows	1993-05-07	1993-07-29	12000.00	painting
11	27	Flower Garden	1999-05-01	1999-08-03	18000.00	painting
12	28	Mount Hood	1995-09-10	1995-09-12	200.00	print
12	29	Buffalo Trail	1995-09-10	1995-09-12	200.00	print
12	30	Indian Spear Fishing	1995-09-10	1995-09-12	200.00	print
12	31	Sunset in the Rockies	1995-09-10	1995-09-12	200.00	print
12	32	Donner Lake	1995-09-10	1995-09-12	200.00	print
12	33	Bridal Veil Falls	1995-09-10	1995-09-12	200.00	print
12	34	A Rustic Mill	1995-09-10	1995-09-12	200.00	print
12	35	Street in Nassau	1995-09-10	1995-09-12	200.00	print
12	36	Gates of The Yosemite	1995-09-10	1995-09-12	200.00	print
12	37	California Spring	1995-09-10	1995-09-12	200.00	print
12	38	The Wolf River	1995-09-10	1995-09-12	200.00	print
12	39	Mount Corcoran	1989-09-10	1995-09-12	40000.00	painting
13	40	Night Windows	2000-09-05	2000-12-05	30000.00	painting
13	41	Ground Swell	1990-06-20	2020-07-02	15000.00	painting
13	42	Morning Sun	1995-01-01	2020-07-02	12000.00	painting
13	43	Gas	1990-09-20	2020-07-02	22000.00	painting
13	44	Nighthawks	2000-09-11	2000-09-15	25000.00	sculpture
14	45	Oriental Poppies	2020-04-09	2021-06-19	20000.00	painting
14	46	Rocky Mountains	2014-09-18	2016-08-20	40000.00	painting
14	47	Canyon with Crows	2018-06-06	2018-06-08	50000.00	painting
14	48	Unexpected	2011-07-09	2011-07-11	300.00	print
14	49	Leaf Motif	2011-07-09	2011-07-11	350.00	print
14	50	Jimson Weed	2018-01-09	2019-07-04	18000.00	painting
14	51	The Black Place	2018-09-19	2019-11-12		painting

AID	ARTID	TITLE	CREATIONDATE	ACQUISITIONDATE	PRICE	FORM
12	38	The Wolf River	1995-09-10	1995-09-12	200.00	print
12	39	Mount Corcoran	1989-09-10	1995-09-12	40000.00	painting
13	40	Night Windows	2000-09-05	2000-12-05	30000.00	painting
AID	ARTID ▲ 1	TITLE	CREATIONDATE	ACQUISITIONDATE	PRICE	FORM
13	42	Morning Sun	1995-01-01	2020-07-02	12000.00	painting
13	43	Gas	1990-09-20	2020-07-02	22000.00	painting
13	44	Nighthawks	2000-09-11	2000-09-15	25000.00	sculpture
14	45	Oriental Poppies	2020-04-09	2021-06-19	20000.00	painting
14	46	Rocky Mountains	2014-09-18	2016-08-20	40000.00	painting
14	47	Canyon with Crows	2018-06-06	2018-06-08	50000.00	painting
14	48	Unexpected	2011-07-09	2011-07-11	300.00	print
14	49	Leaf Motif	2011-07-09	2011-07-11	350.00	print
14	50	Jimson Weed	2018-01-09	2019-07-04	18000.00	painting
14	51	The Black Place	2018-09-19	2019-11-12	22000.00	painting
14	52	Cow Skull	2019-07-16	2020-12-12	18000.00	painting
14	53	Sky Above Clouds	2018-07-15	2018-07-16	21000.00	painting
15	54	Four Head Bend	2020-07-09	2021-08-09	59000.00	painting
16	55	Win Some Lose Some	2015-07-04	2018-07-06	19000.00	painting
17	56	Polygraph	2018-04-05	2020-04-07	15000.00	sculpture
18	57	Old House in Seoul	2015-01-10	2017-01-09	17000.00	sculpture
19	58	Time Waterfall	2020-05-05	2021-01-08	29000.00	sculpture
20	59	Twilight Breeze	2020-10-08	2020-10-25	15000.00	painting
21	60	Mirror Grden	2015-01-01	2016-07-07	10000.00	sculpture

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5. 'contract' table –

CREATE TABLE `artgalleryproject`.`contract` (

`AID` INT(50) NOT NULL ,

`COID` INT(50) NOT NULL ,

`STARTDATE` DATE NOT NULL ,

`ENDDATE` DATE NOT NULL ,

`MRATE` INT(50) NOT NULL ,

`ORGNAME` TEXT NOT NULL ,

PRIMARY KEY (`COID`, `AID`)) ENGINE = InnoDB;

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Showing rows 0 - 11 (12 total, Query took 0.0010 seconds.) [AID: 5... - 16...]

SELECT * FROM `contract` ORDER BY `AID` ASC

AID ▲ 1	COID	STARTDATE	ENDDATE	MRATE	ORGNAME
5	1	2020-10-09	2021-10-09	2000	Dallas Museum of Art
5	2	2020-10-09	2021-10-09	2000	Kimbal Art Museum
5	3	2020-10-09	2021-10-09	2000	Arlington Museum of Art
8	1	2000-10-10	2001-09-09	1500	Dallas Museum of Art
8	2	2000-10-10	2001-09-09	1500	Kimbal Art Museum
8	3	2000-10-10	2001-09-09	1500	Arlington Museum of Art
14	1	2019-10-10	2020-09-09	1800	Arlington Museum of Art
16	1	2015-10-10	2016-09-09	1500	Kimbal Art Museum
16	2	2016-10-10	2017-09-09	1600	Kimbal Art Museum
16	3	2017-10-10	2018-09-09	1700	Kimbal Art Museum
16	4	2018-10-10	2019-09-09	1700	Kimbal Art Museum
16	5	2019-10-10	2020-09-09	1800	Kimbal Art Museum

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6. 'bought' table –
   CREATE TABLE `artgalleryproject`.`bought` (
   `ARTID` INT(50) NOT NULL ,
   `CID` INT(50) NOT NULL ,
   `SALEDATE` DATE NOT NULL ,
   FOREIGN KEY(ARTID) REFERENCES artwork(ARTID),
   FOREIGN KEY(CID) REFERENCES customer(CID)) ENGINE = InnoDB;

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7. 'payment' table –

CREATE TABLE `artgalleryproject`.`payment` (

`PID` INT(50) NOT NULL ,

`ARTID` INT(50) NOT NULL ,

`UPFRONTDATE` DATE NOT NULL ,

`FINALDATE` DATE NULL DEFAULT NULL ,

PRIMARY KEY (`PID`),

FOREIGN KEY(ARTID) REFERENCES artwork(ARTID)) ENGINE = InnoDB;

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Showing rows 0 - 59 (60 total, Query took 0.0010 seconds.) [ARTID: **1...** - **60...**]

SELECT * FROM `payment` ORDER BY `ARTID` ASC

PID	ARTID	UPFRONTDATE	FINALDATE
1	1	2021-02-08	2021-07-08
2	2	2021-02-08	NULL
3	3	2021-02-08	2021-08-08
4	4	1921-03-11	NULL
5	5	1921-07-08	NULL
6	6	2021-05-04	2021-07-07
7	7	2021-07-07	NULL
8	8	2014-01-02	NULL
9	9	2015-01-01	NULL
10	10	2020-01-01	NULL
11	11	2021-01-01	2021-08-08
12	12	2021-08-01	NULL
13	13	2017-07-02	2020-08-09
14	14	2001-08-19	NULL
15	15	1999-07-10	NULL
16	16	1999-08-15	2020-07-07
17	17	1999-09-17	NULL
18	18	1999-10-21	NULL
19	19	2000-05-05	NULL
20	20	2000-12-12	2000-12-19
21	21	2016-01-01	NULL
22	22	2018-12-12	2020-12-10
23	23	1991-10-19	NULL
24	24	1993-03-04	NULL
25	25	1994-04-05	NULL

PID	ARTID	UPFRONTDATE	FINALDATE
20	20	2000-12-12	2000-12-19
21	21	2016-01-01	NULL
22	22	2018-12-12	2020-12-10
24	24	1993-03-04	NULL
25	25	1994-04-05	NULL
26	26	1993-07-29	NULL
27	27	1999-08-03	NULL
28	28	1995-09-12	2021-09-12
29	29	1995-09-12	NULL
30	30	1995-09-12	NULL
31	31	1995-09-12	NULL
32	32	1995-09-12	NULL
33	33	1995-09-12	NULL
34	34	1995-09-12	NULL
35	35	1995-09-12	2019-03-03
36	36	1995-09-12	NULL
37	37	1995-09-12	NULL
38	38	1995-09-12	2018-02-02
39	39	1995-09-12	NULL
40	40	2000-12-05	NULL
41	41	2020-07-02	NULL
42	42	2020-07-02	2020-10-10
43	43	2020-07-02	NULL
44	44	2000-09-15	NULL
45	45	2021-06-19	NULL
46	46	2016-08-20	NULL
47	47	2018-06-08	NULL
48	48	2011-07-11	NULL
49	49	2011-07-11	2020-08-09
50	50	2019-07-04	2020-08-09

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localhost/phpmyadmin/index.php?route=/sql&db=artgalleryproject&table=payment&pos=0

35	35 1995-09-12	2019-03-03	
36	36 1995-09-12	*NULL*	
37	37 1995-09-12	*NULL*	

PID	ARTID ▲ 1	UPFRONTDATE	FINALDATE
39	39	1995-09-12	*NULL*
40	40	2000-12-05	*NULL*
41	41	2020-07-02	*NULL*
42	42	2020-07-02	2020-10-10
43	43	2020-07-02	*NULL*
44	44	2000-09-15	*NULL*
45	45	2021-06-19	*NULL*
46	46	2016-08-20	*NULL*
47	47	2018-06-08	*NULL*
48	48	2011-07-11	*NULL*
49	49	2011-07-11	2020-08-09
50	50	2019-07-04	2020-08-09
51	51	2019-11-12	*NULL*
52	52	2020-12-12	*NULL*
53	53	2018-07-16	*NULL*
54	54	2021-08-09	*NULL*
55	55	2018-07-06	*NULL*
56	56	2020-04-07	*NULL*
57	57	2017-01-09	*NULL*
58	58	2021-01-08	*NULL*
59	59	2020-10-25	2021-01-01
60	60	2016-07-07	2018-09-10

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2022-04-02

PART 2 : -

Q1 Retrieve the total number of artists in each state along with the state name (not the state abbreviation).

Ans – SELECT distinct S.STATENAME, count(distinct A.AID) as 'TOTAL_NUMBER_OF_ARTIST' FROM artist JOIN state on artist.STATEAB = state.STATEAB group by A.STATEAB

Q2 Retrieve the artist's name, date of birth, and the title of artwork that was sold on August 8, 2021.

Ans – SELECT artist.NAME, artist.BIRTHDATE, artwork.TITLE FROM artwork join artist WHERE artwork.ACQUISITIONDATE = '2021-08-08'

Q3 Retrieve the names and address (Street, City, State Abbreviation, and Zipcode) of all the artists in our database whose first name start with a vowel.

Ans – SELECT artist.NAME,artist.STREET,artist.CITY,artist.STATEAB,artist.ZIPCODE from artist where artist.NAME like 'A%' or artist.NAME like 'E%' or artist.NAME like 'I%' or artist.NAME like 'O%' or artist.NAME like 'U%' ORDER BY `artist`.`NAME` ASC

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Q4 Retrieve the names of the artists, list of their artwork (title) when the acquisition price is higher than $20,000 and less than $40,000. Order the result by the price of the artworks.

Ans – SELECT R.NAME, W.TITLE, W.PRICE from artist R, artwork W where w.PRICE > 20000 and w.PRICE < 40000 and R.AID = W.AID ORDER BY `W`.`PRICE` DESC

Q5 Retrieve the titles, acquisition price, and the artists names of the 10 least expensive artworks in the gallery.

Ans – SELECT W.TITLE, R.NAME as ARTISTNAME, W.PRICE from artist R, artwork W where R.AID = W.AID ORDER BY `W`.`PRICE` ASC limit 10;

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Q6 Retrieve the artist name, artwork title, and the acquisition price for all artworks of artists who hale from Kansas and has an artwork whose acquisition price is between $8,000.00 and $15,000.00. List the result in a descending order by the price of the artwork. The price should be stated with $, appropriate commas, and up to 2 decimal places. (Example: $12,000.00)

Ans – SELECT R.NAME, W.TITLE, CONCAT('$',FORMAT(W.PRICE,2)) as ACQUISITIONPRICE from artist R, artwork W where R.AID = W.AID and R.STATEAB = 'KS' and W.PRICE >= '8000' and W.PRICE <= '15000' ORDER BY `W`.`PRICE` DESC;

Q7 Retrieve a list of state names, artist names from each of the states, and the total number of artworks by each artist to have been listed in the Art Gallery. Order the list by the number of their artworks. Exclude Texas artists from the list.

Ans - SELECT s.STATENAME, R.NAME as ARTISTNAME, COUNT(distinct W.ARTID) as NumberOfArtwork from artist R, artwork W, state S where R.AID = W.AID and S.STATENAME != 'Texas' and S.STATEAB = R.STATEAB group by R.NAME ORDER BY NumberOfArtwork DESC;

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Q8 Retrieve, the minimum, maximum, average, and total price of listed artwork of the artists from the state of Kansas. The price should be stated with $, appropriate commas, and up to 2 decimal places. (Example: $12,000.00)

Ans - SELECT CONCAT('$', FORMAT(Min(W.Price),2)) as MINIMUMPRICE ,CONCAT('$', FORMAT(Max(W.Price),2)) as MAXIMUMPRICE, CONCAT('$', FORMAT(AVG(W.Price),2)) as AVERAGEPRICE, CONCAT('$', FORMAT(SUM(W.Price),2) as TOTALPRICE from artist R, artwork W, state S where R.AID = W.AID and S.STATENAME = 'Kansas' and S.STATEAB = R.STATEAB;

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Q9 Retrieve the states, the total number of customers from each state. (Your query will be considered incorrect if it returns the state abbreviation instead of the full state name)

Ans – SELECT distinct(s.STATENAME), COUNT(C.CID) as TOTALCUSTOMER from customer C, state S where C.STATEAB = S.STATEAB group by S.STATEAB;

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Q10 Retrieve the artist name, artwork title and the acquisition price of the most expensive artwork acquired by the gallery so far.

Ans – select A.NAME as ARTISTNAME, R.TITLE, R.PRICE FROM artist A, artwork R WHERE A.AID = R.AID ORDER BY R.PRICE DESC LIMIT 1;

Q11 Retrieve a list of records that each consists of the customer's name, and the title of the artwork they bought, and their price for all the artwork that was bought by only one customer. How will you verify that the results of your query are correct?

Ans – SELECT C.NAME as CUSTOMERNAME,R.TITLE, CONCAT('$', FORMAT(R.PRICE,2)) as ACQUISITIONDATE FROM (SELECT count(B.ARTID) AS NUMBEROFBUYERS,B.ARTID,B.CID FROM bought B GROUP BY B.ARTID ORDER BY NUMBEROFBUYERS DESC) t1, customer C, artwork R WHERE t1.NUMBEROFBUYERS=1 and C.CID = t1.CID AND t1.ARTID = R.ARTID ORDER BY `C`.`CID` DESC

Verify the result - I have sorted out the records of customer who bought only one painting using the subquery and GROUPED the customers according to it. Further we joined artwork, customer tables.

Q12 Retrieve a list of records that is comprised of the state name, artist name, artform, and the number of pieces sold by the type of artform. Sort the list of records by the State name, artist's name, artform, and the number of pieces sold. How can you verify that your query returns correct answers?

Ans – SELECT artist.NAME as ARTISTNAME,state.STATENAME,artwork.FORM,artwork.ARTID, COUNT(artwork.ARTID) AS NUMBEROFPIECES FROM artwork join bought join artist join state ON artwork.ARTID = bought.ARTID AND artist.AID = artwork.AID AND state.STATEAB = artist.STATEAB GROUP BY artwork.FORM,artwork.ARTID

Explanation – here we follow the reverse approach,

1. We first find the number pieces sold with respect to artform

2. We group them by artid.

3. once we have the artid we can easily find artist name and state name from artist and state tables respectively.

Q13 Retrieve a list of records that each consists of the customer's name, the state that hale from, and the title of the artwork they bought, for all the artwork that was bought by a group of two or more people.

Ans – SELECT B.ARTID,C.NAME as CUSTOMERNAME,S.STATENAME, R.TITLE from bought B, customer C, artwork R,state S WHERE B.CID = C.CID AND B.ARTID = R.ARTID AND S.STATEAB = C.STATEAB AND B.ARTID IN (SELECT t1.ARTID FROM (SELECT count(B.ARTID) AS NUMBEROFBUYERS,B.ARTID FROM bought B GROUP BY B.ARTID ORDER BY NUMBEROFBUYERS DESC) t1 where t1.NUMBEROFBUYERS > 1);

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Q14 Execute a command to delete a record that violates a referential integrity constraint. State the message produced by the DBMS.

Ans – DELETE FROM `state` WHERE STATEAB = 'TX'

Q15 Execute an update command for PAYMENTS table that attempts to update a record and thereby violates the foreign key constraint. State the message produced by the DBMS.

Ans – UPDATE `payment` SET `ARTID`='88' WHERE PID = '3'

Q16 Execute 3 insert commands for artist table that attempt to insert records, such that the records violate the explicit schema-based constraints (Key, Entity Integrity, Referential Integrity constraints). Make each of the 3 records violate a different types of integrity constraint. Include the insert statements and the error messages produced.

Ans - Key integrity violation - INSERT INTO `artist`(`AID`, `NAME`, `BIRTHDATE`, `DEATHDATE`, `COMMISSION`, `STREET`, `CITY`, `STATEAB`, `ZIPCODE`) VALUES ('3','Shubham Malankar','1997-03-12','0000-00-00','20','444 Vasudev street','Arlington','Texas','76013-1454')

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Entity integrity violation - INSERT INTO `artist`(`AID`, `NAME`, `BIRTHDATE`, `DEATHDATE`, `COMMISSION`, `STREET`, `CITY`, `STATEAB`, `ZIPCODE`) VALUES (null,'Shubham Malankar','1997-03-12','0000-00-00','20','444 Vasudev street','Arlington','Texas','76013-1454')

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Referential integrity violation - INSERT INTO `artist`(`AID`, `NAME`, `BIRTHDATE`, `DEATHDATE`, `COMMISSION`, `STREET`, `CITY`, `STATEAB`, `ZIPCODE`) VALUES (90,'Shubham Malankar','1997-03-12','0000-00-00','20','444 Vasudev street','Arlington','OH','76013-1454')

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