

Part 1:

CREATE TABLE

STATE (stateAb, stateName)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0081 seconds.)

```
CREATE TABLE STATE ( stateAb CHAR(2) NOT NULL, stateName VARCHAR(50) NOT NULL, PRIMARY KEY(stateAb));
```

[Edit inline] [Edit] [Create PHP code]

Data:

✓ 5 rows inserted. (Query took 0.0089 seconds.)

```
INSERT INTO STATE(stateAb,stateName) VALUES('TX','Texas'), ('OK','Oklahoma'), ('NM','New Mexico'), ('LA','Louisiana'), ('KS','Kansas');
```

[Edit inline] [Edit] [Create PHP code]

ARTIST (aID, name, birthDate, deathDate, commission, street, city, stateAb, zipcode)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0910 seconds.)

```
CREATE TABLE ARTIST ( aID INT NOT NULL, name VARCHAR(50) NOT NULL, birthDate DATE NOT NULL, deathDate DATE, commission INT NOT NULL, street VARCHAR(50) NOT NULL, city VARCHAR(50) NOT NULL, stateAb CHAR(2) NOT NULL, zipcode VARCHAR(15) NOT NULL, PRIMARY KEY(aID), FOREIGN KEY(stateAb) REFERENCES STATE(stateAb));
```

[Edit inline] [Edit] [Create PHP code]

Import Data:

✓ Import has been successfully finished, 21 queries executed. (ARTIST.csv)

✓ 1 row inserted. (Query took 0.0079 seconds.)

```
INSERT INTO `artist` VALUES ('1', 'Abed Abdi', '2000-01-01', NULL, '10', '309 Hounty Road', 'Abbott', 'TX', '76621-0057');
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0101 seconds.)

```
INSERT INTO `artist` VALUES ('2', 'Ismail Gulg', '1990-01-03', NULL, '11', '405 E Mesquite Street', 'Abbott', 'TX', '76621-0057');
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0070 seconds.)

Data

`select * from artist;`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

	<input type="checkbox"/> Show all	Number of rows:	25	Filter rows:	Search this table	Sort by key:	None				
+ Options											
		aID	name	birthDate	deathDate	commission	street	city	stateAb	zipcode	
<input type="checkbox"/>	Edit	Copy	Delete	1	Abed Abdi	2000-01-01	NULL	10 309 E County Road	Abbott	TX	76621-0057
<input type="checkbox"/>	Edit	Copy	Delete	2	Ismail Gulg	1990-01-03	NULL	11 405 E Mesquite Street	Abbott	TX	76621-0057
<input type="checkbox"/>	Edit	Copy	Delete	3	Shakir Ali	1995-02-04	NULL	12 5000 Spectrum Street	Addison	TX	75001-6880
<input type="checkbox"/>	Edit	Copy	Delete	4	Abdur Rahman	1970-02-05	NULL	10 1000 County Road	Bradley	OK	73011-0121
<input type="checkbox"/>	Edit	Copy	Delete	5	Kalipada Ghoshal	1994-01-01	NULL	10 Boundary Road	Bradley	OK	73011-9600
<input type="checkbox"/>	Edit	Copy	Delete	6	Manishi Dey	1994-07-15	NULL	11 450 Main Street	Mound City	KS	66056-0001
<input type="checkbox"/>	Edit	Copy	Delete	7	Nandalal Bose	1980-01-09	NULL	15 S Metcalf Road	Louisburg	KS	66053-0541
<input type="checkbox"/>	Edit	Copy	Delete	8	Raja Ravi Varma	1970-09-19	NULL	12 2000 Forest Grove Blvd	Allen	TX	75002-8811
<input type="checkbox"/>	Edit	Copy	Delete	9	Sunil Das	1985-08-01	NULL	10 4000 Woodcreek Road	Carrollton	TX	75006-1911
<input type="checkbox"/>	Edit	Copy	Delete	10	Jasper Johns	1970-01-02	NULL	12 2500 Sunset Ridge Drive	Rockwall	TX	75032-0006
<input type="checkbox"/>	Edit	Copy	Delete	11	Winslow Homer	1990-02-09	NULL	11 11300 Juniper Lane	Irving	TX	75039-0101
<input type="checkbox"/>	Edit	Copy	Delete	12	Albert Bierstadt	1999-09-10	NULL	10 400 Spruce Street	Leavenworth	KS	66048-0001
<input type="checkbox"/>	Edit	Copy	Delete	13	Edward Hopper	2000-01-20	NULL	11 1500 255th Street	Hillsdale	KS	66036-0061
<input type="checkbox"/>	Edit	Copy	Delete	14	Georgia O'Keeffe	1997-11-05	NULL	11 3000 Weiss Lane	Irving	TX	75039-0006
<input type="checkbox"/>	Edit	Copy	Delete	15	Modupeola Fadugba	2001-08-05	NULL	11 1112 18TH Street	Plano	TX	75086-0019
<input type="checkbox"/>	Edit	Copy	Delete	16	Ekene Maduka	1990-02-09	NULL	12 15TH Street	Plano	TX	75086-0015
<input type="checkbox"/>	Edit	Copy	Delete	17	Olu Amoda	1994-07-15	NULL	14 200 Travis Street	Sherman	TX	75090-0005
<input type="checkbox"/>	Edit	Copy	Delete	18	Koki Tanaka	1994-07-15	NULL	12 5000 W Holiday Road	Fate	TX	75087-2136
<input type="checkbox"/>	Edit	Copy	Delete	19	Tatsuo Miyajima	1999-07-07	NULL	11 Bella Ranch Drive	Choctaw	OK	73020-0017
<input type="checkbox"/>	Edit	Copy	Delete	20	Li Chen	2000-01-20	NULL	12 2090 County Road	Clement	OK	73017-1100
<input type="checkbox"/>	Edit	Copy	Delete	21	Zhan Wang	1999-03-03	NULL	12 1600 N Santa Fe	Edmond	OK	73003-3661

ARTWORK (aID, artID, creationDate, acquisitionDate, price, form)

MySQL returned an empty result set (i.e. zero rows). (Query took 0.1248 seconds.)

```
create table ARTWORK ( aID int not null, artID int not null, title varchar(50) not null, creationDate date not null, acquisitionDate date not null, price int not null, form varchar(20) not null, PRIMARY KEY(artID), foreign key(aID) REFERENCES Artist(aID));
```

[Edit inline] [Edit] [Create PHP code]

Import Data

Import has been successfully finished, 60 queries executed. (ARTWORK.csv)

Data

Showing rows 0 - 24 (60 total, Query took 0.0009 seconds.)

```
select * from artwork;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

	aID	artID	title	creationDate	acquisitionDate	price	form	
<input type="checkbox"/>	Edit	Copy	Delete	1	1 Refugee Camp	2020-09-09	2021-02-07	12000 painting
<input type="checkbox"/>	Edit	Copy	Delete	1	2 Waiting	2020-12-28	2021-02-07	15000 painting
<input type="checkbox"/>	Edit	Copy	Delete	1	3 Palestinian Women	2021-01-01	2021-02-07	1700 painting
<input type="checkbox"/>	Edit	Copy	Delete	2	4 Al Momin	1920-02-19	1921-03-09	20000 painting
<input type="checkbox"/>	Edit	Copy	Delete	2	5 God	1921-01-01	1921-07-08	22000 painting
<input type="checkbox"/>	Edit	Copy	Delete	3	6 Bird	2021-02-04	2021-05-04	40000 sculpture
<input type="checkbox"/>	Edit	Copy	Delete	3	7 Leaves	2021-01-04	2021-07-07	30000 sculpture
<input type="checkbox"/>	Edit	Copy	Delete	4	8 The Holy Man	2014-01-01	2014-01-02	10000 sculpture
<input type="checkbox"/>	Edit	Copy	Delete	5	9 Salvador Dali	2014-01-01	2015-01-01	190 print
<input type="checkbox"/>	Edit	Copy	Delete	6	10 Landscape	2019-01-25	2020-01-01	200 print
<input type="checkbox"/>	Edit	Copy	Delete	6	11 Musician	2020-01-25	2021-01-01	15000 sculpture
<input type="checkbox"/>	Edit	Copy	Delete	6	12 Sunset	2020-06-25	2021-08-01	19000 painting
<input type="checkbox"/>	Edit	Copy	Delete	7	13 Singawala	2015-05-20	2017-07-02	10000 painting
<input type="checkbox"/>	Edit	Copy	Delete	8	14 Shakuntala	2000-09-27	2001-08-19	50000 painting
<input type="checkbox"/>	Edit	Copy	Delete	9	15 Grey Horse	1899-07-01	1999-07-10	10000 painting
<input type="checkbox"/>	Edit	Copy	Delete	9	16 Blue Horse	1898-08-01	1999-08-15	20000 sculpture
<input type="checkbox"/>	Edit	Copy	Delete	9	17 The Lady	1899-09-01	1999-09-17	30000 painting
<input type="checkbox"/>	Edit	Copy	Delete	9	18 Horse in MoonLight	1899-10-01	1999-10-21	40000 painting
<input type="checkbox"/>	Edit	Copy	Delete	10	19 Flag	2000-01-01	2000-05-05	12000 painting
<input type="checkbox"/>	Edit	Copy	Delete	10	20 Three Flags	2000-09-19	2000-12-12	11500 painting
<input type="checkbox"/>	Edit	Copy	Delete	10	21 Corpse and Mirror	2015-01-01	2016-01-01	14000 painting
<input type="checkbox"/>	Edit	Copy	Delete	10	22 Map	2017-08-09	2018-12-12	19000 painting
<input type="checkbox"/>	Edit	Copy	Delete	11	23 Fishing Boats	1990-01-10	1991-10-19	12000 painting
<input type="checkbox"/>	Edit	Copy	Delete	11	24 The Gulf Stream	1992-03-04	1993-03-04	15000 painting
<input type="checkbox"/>	Edit	Copy	Delete	11	25 A Basket of Clams	1993-04-05	1994-04-05	16000 painting

CONTRACT(aID, coID, startDate, endDate, mRate, orgName)

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0069 seconds.)

```
CREATE TABLE CONTRACT( aID int, coID int not null, startDate date not null, endDate date not null, mRate int not null , orgName varchar(50) not null, primary key(aID,coID), foreign key(aID) REFERENCES ARTIST(aID));
```

[Edit inline] [Edit] [Create PHP code]

Import Data

Import has been successfully finished, 12 queries executed. (CONTRACT.csv)

1 row inserted. (Query took 0.0112 seconds.)

```
INSERT INTO `contract` VALUES ('5', '1', '2020-10-09', '2021-10-09', '2000', 'Dallas Museum of Art');
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0097 seconds.)

```
INSERT INTO `contract` VALUES ('5', '2', '2020-10-09', '2021-10-09', '2000', 'Kimbal Art Museum');
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0072 seconds.)

```
INSERT INTO `contract` VALUES ('5', '3', '2020-10-09', '2021-10-09', '2000', 'Arlington Museum of Art');
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0074 seconds.)

Data

				aID	colID	startDate	endDate	mRate	orgName
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	1	2020-10-09	2021-10-09	2000	Dallas Museum of Art
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	2	2020-10-09	2021-10-09	2000	Kimbal Art Museum
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	3	2020-10-09	2021-10-09	2000	Arlington Museum of Art
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	1	2000-10-10	2001-09-09	1500	Dallas Museum of Art
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	2	2000-10-10	2001-09-09	1500	Kimbal Art Museum
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	3	2000-10-10	2001-09-09	1500	Arlington Museum of Art
<input type="checkbox"/>	 Edit	 Copy	 Delete	14	1	2019-10-10	2020-09-09	1800	Arlington Museum of Art
<input type="checkbox"/>	 Edit	 Copy	 Delete	16	1	2015-10-10	2016-09-09	1500	Kimbal Art Museum
<input type="checkbox"/>	 Edit	 Copy	 Delete	16	2	2016-10-10	2017-09-09	1600	Kimbal Art Museum
<input type="checkbox"/>	 Edit	 Copy	 Delete	16	3	2017-10-10	2018-09-09	1700	Kimbal Art Museum
<input type="checkbox"/>	 Edit	 Copy	 Delete	16	4	2018-10-10	2019-09-09	1700	Kimbal Art Museum
<input type="checkbox"/>	 Edit	 Copy	 Delete	16	5	2019-10-10	2020-09-09	1800	Kimbal Art Museum

CUSTOMER (cid, name, street, city, stateAb, zipcode)

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0888 seconds.)

```
create table CUSTOMER ( cID int not null, name varchar(50) not null, street varchar(50) not null, city varchar(50) not null, stateAb CHAR(2) not null, zipcode varchar(15) not null, PRIMARY KEY(cID), foreign key(stateAb) REFERENCES STATE(stateAb));
```

[Edit inline] [Edit] [Create PHP code]

Data

✓ Import has been successfully finished, 22 queries executed. (CUSTOMER.csv)

✓ 1 row inserted. (Query took 0.0150 seconds.)

```
INSERT INTO `customer` VALUES ('1', 'Mahbod Seraji ', '1500 E Exchange Road', 'Allen', 'TX', '75002-4504');
```

[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0134 seconds.)

BOUGHT (artID, cID, saleDate)

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0094 seconds.)

```
CREATE TABLE BOUGHT ( artID int not null, cID int not null, saleDate date not null, primary key(artID,cID), foreign key (artID) references ARTWORK(artID), foreign key (cID) references CUSTOMER(cID));
```

[Edit inline] [Edit] [Create PHP code]

Import Data

 Import has been successfully finished, 22 queries executed. (BOUGHT.csv)
 1 row inserted. (Query took 0.0124 seconds.)
<pre>INSERT INTO `bought` VALUES ('1', '1', '2021-07-08');</pre>
[Edit inline] [Edit] [Create PHP code]
 1 row inserted. (Query took 0.0132 seconds.)
<pre>INSERT INTO `bought` VALUES ('1', '2', '2021-07-08');</pre>
[Edit inline] [Edit] [Create PHP code]
 1 row inserted. (Query took 0.0099 seconds.)

Data

`select * from bought;`

Profiling | [Edit inline](#) | [Edit](#) | [Explain SQL](#) | [Create PHP code](#) | [Refresh](#)

	<input type="checkbox"/>	Edit	Copy	Delete	artID	cID	saleDate
1	<input type="checkbox"/>	Edit	Copy	Delete	1	1	2021-07-08
2	<input type="checkbox"/>	Edit	Copy	Delete	1	2	2021-07-08
3	<input type="checkbox"/>	Edit	Copy	Delete	3	3	2021-08-08
4	<input type="checkbox"/>	Edit	Copy	Delete	6	4	2021-07-07
5	<input type="checkbox"/>	Edit	Copy	Delete	11	5	2021-08-08
6	<input type="checkbox"/>	Edit	Copy	Delete	11	6	2021-08-08
7	<input type="checkbox"/>	Edit	Copy	Delete	11	7	2021-08-08
8	<input type="checkbox"/>	Edit	Copy	Delete	11	8	2021-08-08
9	<input type="checkbox"/>	Edit	Copy	Delete	13	9	2020-08-09
10	<input type="checkbox"/>	Edit	Copy	Delete	16	10	2020-07-07
11	<input type="checkbox"/>	Edit	Copy	Delete	20	11	2000-12-19
12	<input type="checkbox"/>	Edit	Copy	Delete	20	12	2000-12-19
13	<input type="checkbox"/>	Edit	Copy	Delete	22	13	2020-12-10
14	<input type="checkbox"/>	Edit	Copy	Delete	28	14	2021-09-12
15	<input type="checkbox"/>	Edit	Copy	Delete	35	15	2019-03-03
16	<input type="checkbox"/>	Edit	Copy	Delete	38	16	2018-02-02
17	<input type="checkbox"/>	Edit	Copy	Delete	42	17	2020-10-10
18	<input type="checkbox"/>	Edit	Copy	Delete	49	18	2020-08-09
19	<input type="checkbox"/>	Edit	Copy	Delete	50	19	2020-08-09
20	<input type="checkbox"/>	Edit	Copy	Delete	59	20	2020-07-07
21	<input type="checkbox"/>	Edit	Copy	Delete	60	21	2018-09-10
22	<input type="checkbox"/>	Edit	Copy	Delete	60	22	2018-09-10

[↑](#) [Check all](#) With selected: [Edit](#) [Copy](#) [Delete](#) [Export](#)

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

PAYMENTS (pID, artID, upfrontDate, finalDate)

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0087 seconds.)

```
CREATE TABLE PAYMENTS ( pID int not null, artID int not null, upfrontDate date not null, finalDate date, primary key(pID), foreign key (artID) references ARTWORK(artID);
```

[Edit inline] [Edit] [Create PHP code]

Import Data

✓ Import has been successfully finished, 60 queries executed. (PAYMENTS.csv)

Data

<input type="checkbox"/>		Edit		Copy		Delete	1	1	2021-07-08
<input type="checkbox"/>		Edit		Copy		Delete	1	2	2021-07-08
<input type="checkbox"/>		Edit		Copy		Delete	3	3	2021-08-08
<input type="checkbox"/>		Edit		Copy		Delete	6	4	2021-07-07
<input type="checkbox"/>		Edit		Copy		Delete	11	5	2021-08-08
<input type="checkbox"/>		Edit		Copy		Delete	11	6	2021-08-08
<input type="checkbox"/>		Edit		Copy		Delete	11	7	2021-08-08
<input type="checkbox"/>		Edit		Copy		Delete	11	8	2021-08-08
<input type="checkbox"/>		Edit		Copy		Delete	13	9	2020-08-09
<input type="checkbox"/>		Edit		Copy		Delete	16	10	2020-07-07
<input type="checkbox"/>		Edit		Copy		Delete	20	11	2000-12-19
<input type="checkbox"/>		Edit		Copy		Delete	20	12	2000-12-19
<input type="checkbox"/>		Edit		Copy		Delete	22	13	2020-12-10
<input type="checkbox"/>		Edit		Copy		Delete	28	14	2021-09-12
<input type="checkbox"/>		Edit		Copy		Delete	35	15	2019-03-03
<input type="checkbox"/>		Edit		Copy		Delete	38	16	2018-02-02
<input type="checkbox"/>		Edit		Copy		Delete	42	17	2020-10-10
<input type="checkbox"/>		Edit		Copy		Delete	49	18	2020-08-09
<input type="checkbox"/>		Edit		Copy		Delete	50	19	2020-08-09
<input type="checkbox"/>		Edit		Copy		Delete	59	20	2020-07-07
<input type="checkbox"/>		Edit		Copy		Delete	60	21	2018-09-10
<input type="checkbox"/>		Edit		Copy		Delete	60	22	2018-09-10

Part 2

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

Query

```
select s.stateName,count(1) "total number of artists"
from artist a
join state s on a.stateAb = s.stateAb
group by s.stateName
```

Result

The screenshot shows a database query results interface. At the top, a green bar indicates 'Showing rows 0 - 2 (3 total, Query took 0.0050 seconds.)'. Below this is the SQL query: 'select s.stateName,count(1) "total number of artists" from artist a join state s on a.stateAb = s.stateAb group by s.stateName;'. There is a checkbox for 'Profiling' and links for 'Edit inline', 'Edit', 'Explain SQL', 'Create PHP code', and 'Refresh'. A toolbar below the query includes 'Show all' (unchecked), 'Number of rows: 25' (selected), 'Filter rows:', and a search bar 'Search this table'. The results table has a header row 'stateName | total number of artists'. The data rows are: Kansas (4), Oklahoma (5), and Texas (12).

stateName	total number of artists
Kansas	4
Oklahoma	5
Texas	12

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

Query

```
select distinct a.name, a.birthDate, aw.title
from artist a
join artwork aw on a.aID = aw.aID
join bought b on aw.artID = b.artID
where b.saleDate = '2021-08-08'
```

Result

Showing rows 0 - 1 (2 total, Query took 0.0042 seconds.)

```
select distinct a.name, a.birthDate, aw.title from artist a join artwork aw on a.aID = aw.aID join bought b on aw.artID = b.artID where b.saleDate = '2021-08-08';
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

name	birthDate	title
Abed Abdi	2000-01-01	Palestinian Women
Manishi Dey	1994-07-15	Musician

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.

Query

```
select a.name, a.street,a.city, a.stateAb, a.zipcode from artist a where a.name like 'a%' or  
a.name like 'e%' or a.name like 'i%' or a.name like 'o%' or a.name like 'u%'
```

Result

Show query box

Showing rows 0 - 6 (7 total, Query took 0.0035 seconds.)

```
select a.name, a.street,a.city, a.stateAb, a.zipcode from artist a where a.name like 'a%' or a.name like 'e%' or a.name like 'i%' or a.name like 'o%' or a.name like 'u%';
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	name	street	city	stateAb	zipcode
<input type="checkbox"/>	Abed Abdi	309 Hounty Road	Abbott	TX	76621-0057
<input type="checkbox"/>	Ismail Gulg	405 E Mesquite Street	Abbott	TX	76621-0057
<input type="checkbox"/>	Abdur Rahman	1000 County Road	Bradley	OK	73011-0121
<input type="checkbox"/>	Albert Bierstadt	400 Spruce Street	Leavenworth	KS	66048-0001
<input type="checkbox"/>	Edward Hopper	1500 255th Street	Hillsdale	KS	66036-0061
<input type="checkbox"/>	Ekene Maduka	15TH Street	Plano	TX	75086-0015
<input type="checkbox"/>	Olu Amoda	200 Travis Street	Sherman	TX	75090-0005

Check all With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

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.

Query

```
select distinct a.name, aw.title  
  
from artist a  
  
join artwork aw on a.aID = aw.aID  
  
where aw.price > 20000 and aw.price < 40000  
  
order by aw.price
```

Result

Showing rows 0 - 8 (9 total, Query took 0.0031 seconds.)																					
<pre>select distinct a.name, aw.title from artist a join artwork aw on a.aID = aw.aID where aw.price > 20000 and aw.price < 40000 order by aw.price;</pre>																					
<input type="checkbox"/> Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]																					
<input type="checkbox"/> Show all Number of rows: 25 <input type="button" value="▼"/> Filter rows: Search this table Sort by key: None <input type="button" value="▼"/>																					
<input type="checkbox"/> Options																					
<table><thead><tr><th>name</th><th>title</th></tr></thead><tbody><tr><td>Georgia O'Keeffe</td><td>Sky Above Clouds</td></tr><tr><td>Ismail Gulg</td><td>God</td></tr><tr><td>Edward Hopper</td><td>Gas</td></tr><tr><td>Georgia O'Keeffe</td><td>The Black Place</td></tr><tr><td>Edward Hopper</td><td>Nighthawks</td></tr><tr><td>Tatsuo Miyajima</td><td>Time Waterfall</td></tr><tr><td>Sunil Das</td><td>The Lady</td></tr><tr><td>Shakir Ali</td><td>Leaves</td></tr><tr><td>Edward Hopper</td><td>Night Windows</td></tr></tbody></table>		name	title	Georgia O'Keeffe	Sky Above Clouds	Ismail Gulg	God	Edward Hopper	Gas	Georgia O'Keeffe	The Black Place	Edward Hopper	Nighthawks	Tatsuo Miyajima	Time Waterfall	Sunil Das	The Lady	Shakir Ali	Leaves	Edward Hopper	Night Windows
name	title																				
Georgia O'Keeffe	Sky Above Clouds																				
Ismail Gulg	God																				
Edward Hopper	Gas																				
Georgia O'Keeffe	The Black Place																				
Edward Hopper	Nighthawks																				
Tatsuo Miyajima	Time Waterfall																				
Sunil Das	The Lady																				
Shakir Ali	Leaves																				
Edward Hopper	Night Windows																				
<input type="checkbox"/> Show all Number of rows: 25 <input type="button" value="▼"/> Filter rows: Search this table Sort by key: None <input type="button" value="▼"/>																					

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

Query

```
select distinct aw.title, aw.price, a.name
```

```

from artist a

join artwork aw on a.aID = aw.aID

order by aw.price ASC

limit 10;

```

Result

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 9 (10 total, Query took 0.0044 seconds.) [price: 190... - 200...]

```
select distinct aw.title, aw.price,a.name from artist a join artwork aw on a.aID = aw.aID order by aw.price ASC limit 10;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Options

title	price	name
Salvador Dali	190	Kalipada Ghoshal
The Wolf River	200	Albert Bierstadt
Bridal Veil Falls	200	Albert Bierstadt
Mount Hood	200	Albert Bierstadt
Street in Nassau	200	Albert Bierstadt
Indian Spear Fishing	200	Albert Bierstadt
Landscape	200	Manishi Dey
California Spring	200	Albert Bierstadt
Donner Lake	200	Albert Bierstadt
A Rustic Mill	200	Albert Bierstadt

Query results operations

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)

Query

```

select distinct a.name,aw.title, concat('$',format(aw.price,2)) as 'price'

from artist a

join artwork aw on a.aID = aw.aID

join state s on a.stateAb = s.stateAb

```

```

where s.stateName = 'kansas'

and aw.price between 8000 and 15000

order by aw.price desc

```

Result

Show query box

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available. ⓘ

✓ Showing rows 0 - 3 (4 total, Query took 0.0045 seconds.)

```
select distinct a.name,aw.title, concat('$',format(aw.price,2)) as 'price' from artist a join artwork aw on a.aID = aw.aID join state s on a.stateAb = s.stateName where s.stateName = 'kansas' and aw.price between 8000 and 15000 order by aw.price desc;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

<input type="checkbox"/> Show all	Number of rows:	25	Filter rows:	Search this table	Sort by key:	None
+ Options						
name	title	price				
Manishi Dey	Musician	\$15,000.00				
Edward Hopper	Ground Swell	\$15,000.00				
Edward Hopper	Morning Sun	\$12,000.00				
Nandalal Bose	Singawala	\$10,000.00				

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

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.

Query

```

select distinct a.name, count(aw.artID)

from artist a

join artwork aw on a.aID = aw.aID

join state s on a.stateAb = s.stateAb

where s.stateName not in ('texas')

```

```
GROUP by a.name
```

```
order by count(aw.artID);
```

Result

Showing rows 0 - 8 (9 total, Query took 0.0043 seconds.)

```
select distinct a.name, count(aw.artID) from artist a join artwork aw on a.aID = aw.aID join state s on a.stateAb = s.stateAb where s.stateName not in ('texas') GROUP by a.name order by count(aw.artID);
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options	name	count(aw.artID)
Zhan Wang	1	
Li Chen	1	
Tatsuo Miyajima	1	
Kalipada Ghoshal	1	
Abdur Rahman	1	
Nandalal Bose	1	
Manishi Dey	3	
Edward Hopper	5	
Albert Bierstadt	12	

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)

Query

```
select a.name, concat('$',Format( min(aw.price),2)) As 'Minimum Price' ,  
  
concat('$',Format(max(aw.price),2)) As 'Maximum  
Price',concat('$',Format(AVG(aw.price),2)) As 'Average  
Price',concat('$',Format(SUM(aw.price),2)) As 'Total Price'
```

```

from artist a

join artwork aw on a.aID = aw.aID

join state s on a.stateAb = s.stateAb

where s.stateName = 'kansas'

GROUP by a.name;

```

Result

Showing rows 0 - 3 (4 total, Query took 0.0055 seconds.)

```

select a.name, concat('$',Format( min(aw.price),2)) As 'Minimum Price' , concat('$',Format(max(aw.price),2)) As 'Maximum Price',concat('$',Format(AVG(aw.price),2)) As 'Average Price',concat('$',Format(SUM(aw.price),2)) As 'Total Price' from artist a join artwork aw on a.aID = aw.aID join state s on a.stateAb = s.stateAb where s.stateName = 'kansas' GROUP by a.name;

```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

<input type="checkbox"/> Show all	Number of rows:	25	Filter rows:	Search this table	Sort by key:	None
+ Options						
name	Minimum Price	Maximum Price	Average Price	Total Price		
Albert Bierstadt	\$200.00	\$40,000.00	\$3,516.67	\$42,200.00		
Edward Hopper	\$12,000.00	\$30,000.00	\$20,800.00	\$104,000.00		
Manishi Dey	\$200.00	\$19,000.00	\$11,400.00	\$34,200.00		
Nandalal Bose	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00		

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)

Query

```

select s.stateName , count(*) As 'total customers'
from customer c
join state s on c.stateAb = s.stateAb
group by s.stateName;

```

Result

Showing rows 0 - 2 (3 total, Query took 0.0089 seconds.)

```
select s.stateName , count(*) As 'total customers' from customer c join state s on c.stateAb = s.stateAb group by s.stateName;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

stateName	total customers
Louisiana	4
New Mexico	4
Texas	14

Show all | Number of rows: 25 Filter rows: Search this table

Query results operations

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

Query

```
select a.name, aw.title, price
from artist a
join artwork aw on a.aID = aw.aID
order by price DESC
limit 1;
```

Result

Showing rows 0 - 0 (1 total, Query took 0.0067 seconds.)

```
select a.name, aw.title, price from artist a join artwork aw on a.aID = aw.aID order by price DESC limit 1;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

+ Options

name	title	price
Modupeola Fadugba	Four Head Bend	59000

or

Query

```
select a.name, aw.title, price
from artist a
```

```
join artwork aw on a.aID = aw.aID
```

```
where aw.price = (select max(price) from artwork)
```

Result

Showing rows 0 - 0 (1 total, Query took 0.0287 seconds.)		
<pre>select a.name, aw.title, price from artist a join artwork aw on a.aID = aw.aID where aw.price = (select max(price) from artwork);</pre>		
<input type="checkbox"/> Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]		
<input type="checkbox"/> Show all	Number of rows: 25	Filter rows: Search this table
+ Options		
name	title	price
Modupeola Fadugba	Four Head Bend	59000

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?

Query

```
select c.name , a.title, a.price  
  
from customer c  
  
join bought b on c.cID = b.cID  
  
join artwork a on a.artID = b.artID  
  
where a.artID in (  
  
select b.artID  
  
from bought b  
  
join customer c on c.cID = b.cID  
  
GROUP by b.artID  
  
having count(b.cID)=1)
```

Result

Showing rows 0 - 11 (12 total, Query took 0.0069 seconds.)

```
select c.name , a.title, a.price from customer c join bought b on c.cID = b.cID join artwork a on a.artID = b.artID where a.artID in ( select b.artID from bought b join customer c on c.cID = b.cID GROUP by b.artID having count(b.cID) =1);
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 ▾ Filter rows: Search this table

+ Options

name	title	price
Nadia Hashimi	Palestinian Women	1700
Tahmima Anam	Bird	40000
Tom Twain	Singawala	10000
Maya Morrison	Blue Horse	20000
Randy Bradbury	Map	19000
Wu Ming	Mount Hood	200
Dia Davidar	Street in Nassau	200
Anil Desai	The Wolf River	200
Amitav Ghosh	Morning Sun	12000
Ben Okri	Leaf Motif	350
Helon Habila	Jimson Weed	18000
Ana Castillo	Twilight Breeze	15000

Show all | Number of rows: 25 ▾ Filter rows: Search this table

Verification

Step1: Get number of customers for each artwork

Query

```
select b.artID, count(*) "number of customers"  
from customer c  
join bought b on c.cID = b.cID  
GROUP by b.artID
```

Result

Showing rows 0 - 15 (16 total, Query took 0.0108 seconds.)

```
select b.artID, count(*) "number of customers" from customer c join bought b on c.cID = b.cID GROUP by b.artID;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

artID	number of customers
1	2
3	1
6	1
11	4
13	1
16	1
20	2
22	1
28	1
35	1
38	1
42	1
49	1
50	1
59	1
60	2

Step2:Filter the above result to display records of artwork with only one customer

Query

```
select b.artID, count(*) "number of customers"  
from customer c  
join bought b on c.cID = b.cID  
GROUP by b.artID  
having count(*) = 1
```

Result

Showing rows 0 - 11 (12 total, Query took 0.0111 seconds.)

```
select b.artID, count(*) "number of customers" from customer c join bought b on c.cID = b.cID GROUP by b.artID having count(*) =1;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 ▾ Filter rows: Search this table

+ Options

artID	number of customers
3	1
6	1
13	1
16	1
22	1
28	1
35	1
38	1
42	1
49	1
50	1
59	1

Step3: Get the title of artwork and price joining all the required tables

As shown in the above result

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?

Query

```
SELECT s.stateName "State Name" ,a.name "Artist Name", c.form "artform", c.PiecesSold  
"Number of Pieces sold"  
  
FROM artist a  
  
join state s on a.stateAb = s.stateAb  
  
join (select art.aID,art.form, count(*) as "PiecesSold"  
  
from artwork art  
  
group by art.aID, art.form) c on a.aID = c.aid
```

```
ORDER by s.stateName
```

Result

Showing rows 0 - 26 (27 total, Query took 0.0059 seconds.)

```
SELECT s.stateName "State Name" ,a.name "Artist Name", c.form "artform", c.PiecesSold "Number of Pieces sold" FROM artist a join state s on a.stateAb = s.stateAb join (select art.aID,art.form, count(*) as "PiecesSold" from artwork art group by art.aID, art.form) c on a.aID = c.aID ORDER by s.stateName;
```

Profiling | [Edit inline](#) | [Edit](#) | [Explain SQL](#) | [Create PHP code](#) | [Refresh](#)

Show all | Number of rows: 100 Filter rows: Search this table

+ Options

State Name	Artist Name	artform	Number of Pieces sold
Kansas	Manishi Dey	sculpture	1
Kansas	Manishi Dey	print	1
Kansas	Manishi Dey	painting	1
Kansas	Nandalal Bose	painting	1
Kansas	Albert Bierstadt	print	11
Kansas	Albert Bierstadt	painting	1
Kansas	Edward Hopper	sculpture	1
Kansas	Edward Hopper	painting	4
Oklahoma	Abdur Rahman	sculpture	1
Oklahoma	Kalipada Ghoshal	print	1
Oklahoma	Tatsuo Miyajima	sculpture	1
Oklahoma	Li Chen	painting	1
Oklahoma	Zhan Wang	sculpture	1
Texas	Abed Abdi	painting	3
Texas	Ismail Gulg	painting	2
Texas	Shakir Ali	sculpture	2
Texas	Raja Ravi Varma	painting	1
Texas	Sunil Das	sculpture	1
Texas	Sunil Das	painting	3
Texas	Jasper John	painting	4
Texas	Winslow Homer	painting	5
Texas	Georgia O'Keeffe	print	2
Texas	Georgia O'Keeffe	painting	7
Texas	Modupeola Fadugba	painting	1
Texas	Ekene Maduka	painting	1
Texas	Olu Amoda	sculpture	1
Texas	Koki Tanaka	sculpture	1

Show all | Number of rows: 100 Filter rows: Search this table

Verification

Get number of art pieces sold per artist:

Query

```
select art.aID,art.form, count(*) as "PiecesSold"  
from artwork art  
group by art.aID, art.form
```

Result

Showing rows 0 - 26 (27 total, Query took 0.0023 seconds.)

```
select art.aID,art.form, count(*) as "PiecesSold" from artwork art group by art.aID, art.form;
```

Profiling | [Edit inline](#) | [Edit](#) | [Explain SQL](#) | [Create PHP code](#) | [Refresh](#)

	<input type="checkbox"/> Show all	Number of rows:	50	Filter rows:	Search this table	Sort by key:	None
- Options							
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	1	painting	3	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	2	painting	2	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	3	sculpture	2	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	4	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	5	print	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	6	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	6	print	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	6	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	7	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	8	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	9	painting	3	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	9	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	10	painting	4	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	11	painting	5	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	12	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	12	print	11	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	13	painting	4	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	13	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	14	painting	7	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	14	print	2	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	15	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	16	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	17	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	18	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	19	sculpture	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	20	painting	1	
	<input type="checkbox"/> Edit	<input type="checkbox"/> Copy	<input type="checkbox"/> Delete	21	sculpture	1	

[Console](#) [Check all](#) [With selected:](#) [Edit](#) [Copy](#) [Delete](#) [Export](#)

Now based on the aID from the above result, get the artist name from Artist table and state name from the state table. This results the final answer

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.

Query

```
select c.name , a.title, s.stateName
from customer c
join bought b on c.cID = b.cID
join artwork a on a.artID = b.artID
join state s on c.stateAb = s.stateAb
where a.artID in (
select b.artID
from bought b
join customer c on c.cID = b.cID
GROUP by b.artID
having count(b.cID) >1)
```

Result:

Showing rows 0 - 9 (10 total). Query took 0.0075 seconds.

```
select c.name , a.title, s.stateName from customer c join bought b on c.cID = b.cID join artwork a on a.artID = b.artID join state s on c.stateAb = s.stateAb where a.artID in ( select b.artID from bought b join customer c on c.cID = b.cID GROUP by b.artID having count(b.cID) > 1);
```

Profiling | [Edit inline](#) | [Edit](#) | [Explain SQL](#) | [Create PHP code](#) | [Refresh](#)

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

name	title	stateName
Carlos Fuentes	Mirror Grden	New Mexico
Cristina Fuentes	Mirror Grden	New Mexico
Mahbod Seraji	Refugee Camp	Texas
Shazadi Seraji	Refugee Camp	Texas
Elena Lee	Musician	Texas
Harper Lee	Musician	Texas
Scott Green	Musician	Texas
Mary Green	Musician	Texas
Jay Steinbeck	Three Flags	Texas
Linda Steinbeck	Three Flags	Texas

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

Query

```
DELETE from artist where aID =1;
```

Result:

Delimiter : Show this query here again Retain query box Rollback when finished Enable foreign key checks [Simulate query](#) [Go](#)

[Hide query box](#)

Error

SQL query: [Copy](#)

```
DELETE from artist where aID =1;
```

MySQL said: [Error](#)

```
#1451 - Cannot delete or update a parent row: a foreign key constraint fails ('artgallery`.`artwork', CONSTRAINT `artwork_ibfk_1` FOREIGN KEY (`aID`) REFERENCES `artist` (`aID`))
```

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.

Query

```
update payments
set artID = 100
where pid =1;
```

Result

Error

SQL query: [Copy](#)

```
update payments
set artID = 100
where pid =1;
```

MySQL said: [?](#)

```
#1452 - Cannot add or update a child row: a foreign key constraint fails ('artgallery'.'payments', CONSTRAINT 'payments_ibfk_1' FOREIGN KEY ('artID') REFERENCES 'artwork' ('artID'))
```

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

Key Constraint

```
insert into artist(aid)
VALUES(1)
```

Result

Error

SQL query: [Copy](#)

```
insert into artist(aid)
VALUES(1);
```

MySQL said: [?](#)

```
#1062 - Duplicate entry '1' for key 'PRIMARY'
```

Entity Integrity

```
insert into artist(aid)
VALUES(null)
```

Result

Error

SQL query: [Copy](#)

```
insert into artist(aid)
VALUES(null);
```

MySQL said: [?](#)

```
#1048 - Column 'aid' cannot be null
```

Referential Integrity

```
insert into artwork(aid)
VALUES(120)
```

Result

Error

SQL query: [Copy](#)

```
insert into artwork(aid)
VALUES(120);
```

MySQL said: [?](#)

```
#1452 - Cannot add or update a child row: a foreign key constraint fails ('artgallery'.'artwork', CONSTRAINT 'artwork_ibfk_1' FOREIGN KEY ('aID') REFERENCES 'artist' ('aID'))
```