GOLDSTAR SHOES COMPANY DATABASE

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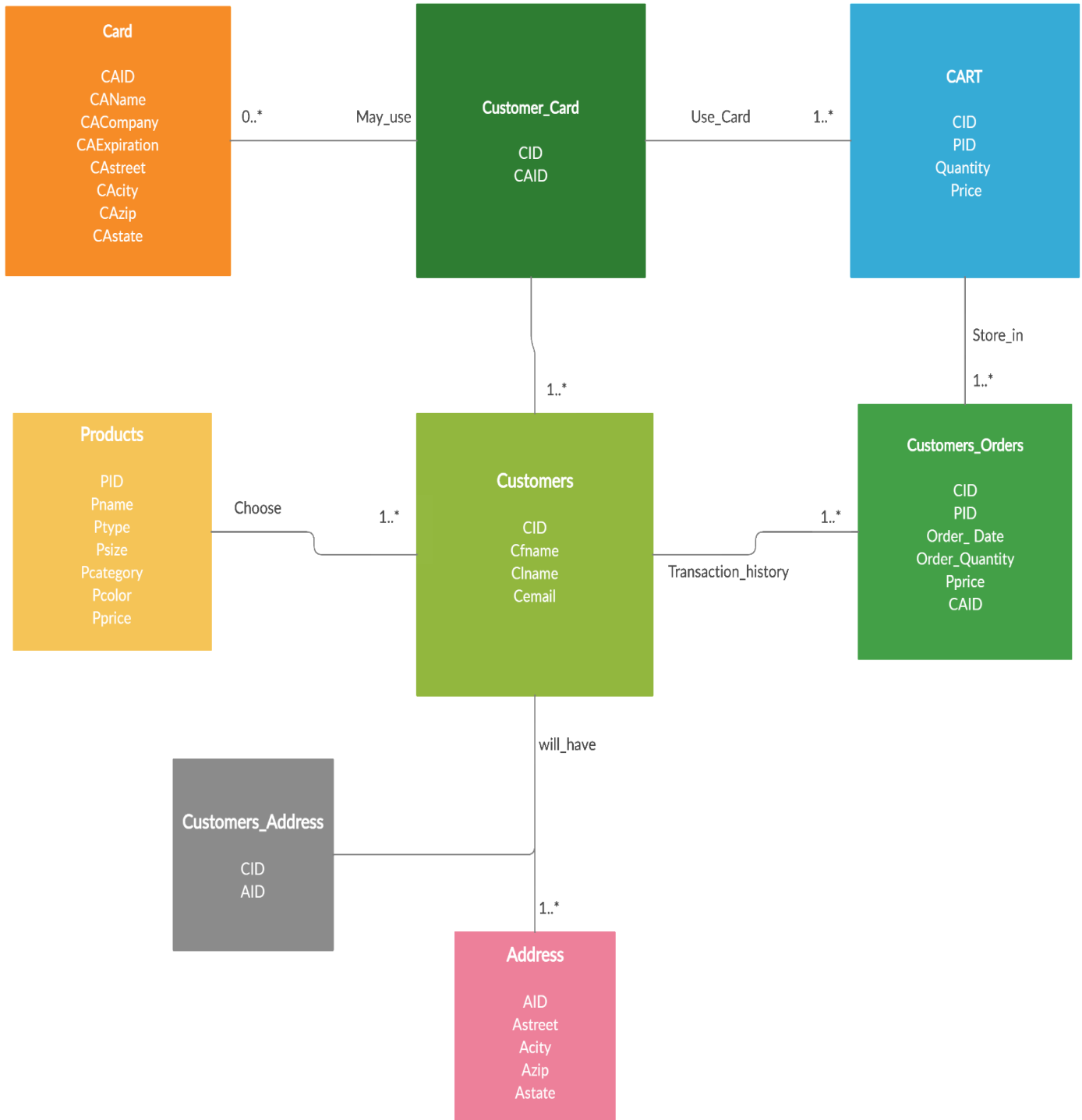
Question No. 1

Conceptual Schema of Goldstar Company Database

Card

CAID
CAName
CACompany
CAExpiration
CAstreet
CAcity
CAzip
CAstate

0..*   May_use

Customer_Card

CID
CAID

Use_Card   1..*

CART

CID
PID
Quantity
Price

Store_in

1..*

1..*

Products

PID
Pname
Ptype
Psize
Pcategory
Pcolor
Pprice

Choose   1..*

Customers

CID
Cfname
Clname
Cemail

1..*

Transaction_history

Customers_Orders

CID
PID
Order_ Date
Order_Quantity
Pprice
CAID

will_have

Customers_Address

CID
AID

1..*

Address

AID
Astreet
Acity
Azip
Astate

Question No. 2

Rational Model: Implementational Schema
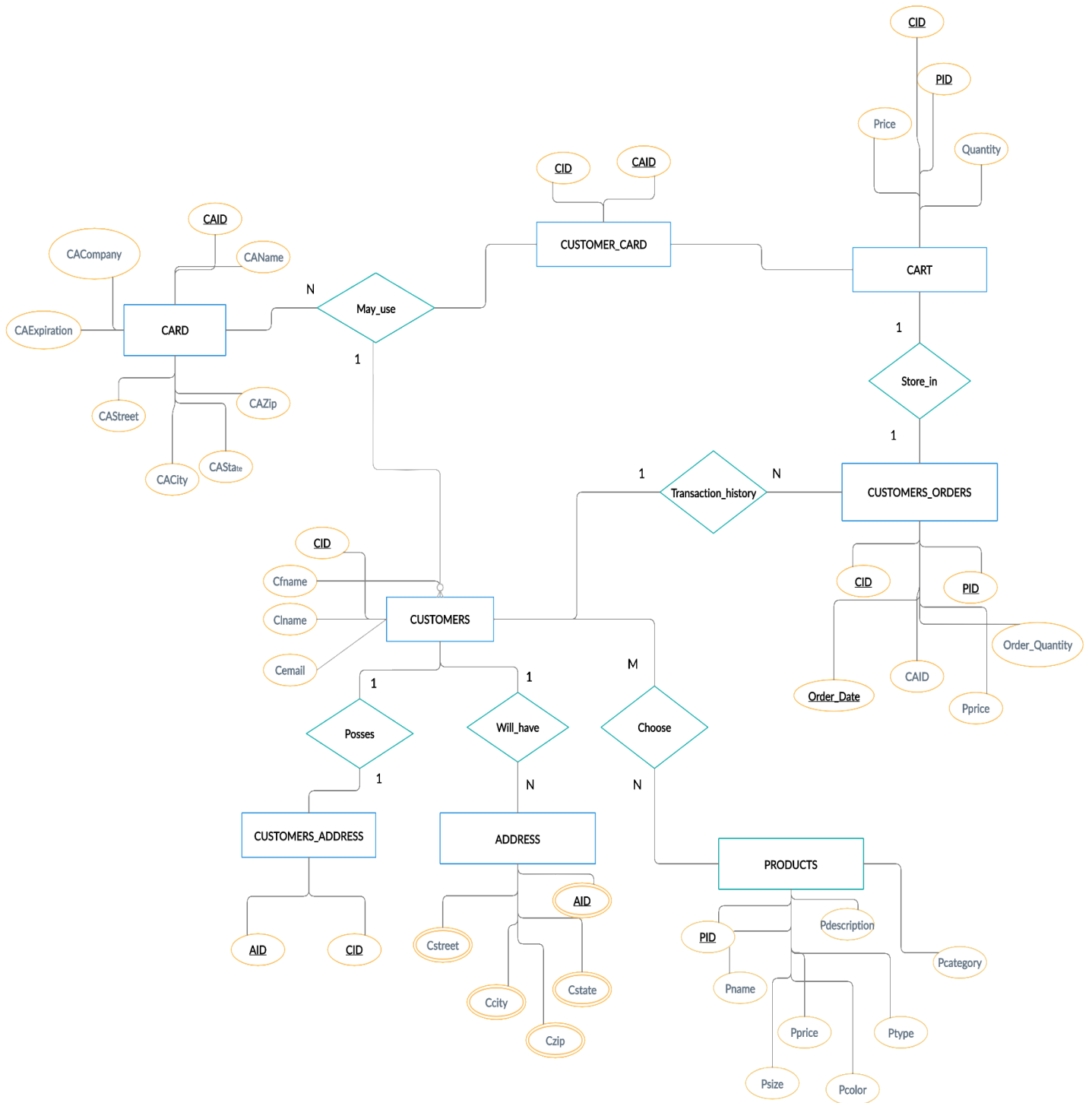
Question No: 3

Company Name: Goldstar

Database: Goldstar

```
1  CREATE DATABASE goldstar
```

Table: address

```
CREATE table address(AID integer(30) not null,
                Astreet varchar (50),
                Acity varchar (30),
                Astate varchar (5),
                Azip integer (5),
                PRIMARY KEY (AID))
```

Table: customers

```
CREATE table customers(CID integer(30) not null,
                 Cfname varchar (50),
                Clname varchar (50),
                Cemail varchar (50),
                PRIMARY KEY (CID))
```

Table: card

```
CREATE table card(CAID integer(30) not null,
                CAname varchar (50),
                CAcompany varchar (50),
                CAexpiration date,
                CAstreet varchar (50),
                CAcity varchar (30),
                CAstate varchar (5),
                CAzip integer (5),
                PRIMARY KEY (CAID))
```

Table: products

```sql
CREATE table products(PID integer(30) not null,
                        Pname varchar (50),
                        Ptype varchar (50),
                        Pcategory varchar (50),
                      Pcolor varchar (50),
                      Psize integer (30),
                      Pprice decimal (10,2),
                      PRIMARY KEY (PID))
```

Table: cart

```sql
CREATE table cart(CID integer(30) not null,
                  PID integer(30) not null,
                   PRIMARY KEY (CID, PID),
                   FOREIGN KEY (CID) REFERENCES customers (CID),
                  FOREIGN KEY (PID) REFERENCES products (PID));
```

Table: customers_address

```sql
CREATE table customers_address(CID integer(30) not null,
                               AID integer(30) not null,
                                PRIMARY KEY (CID, AID),
                                FOREIGN KEY (CID) REFERENCES customers (CID),
                               FOREIGN KEY (AID) REFERENCES address (AID));
```

Table: customers_card

```sql
CREATE table customers_card(CID integer(30) not null,
                            CAID integer(30) not null,
                             PRIMARY KEY (CID, CAID),
                              FOREIGN KEY (CID) REFERENCES customers (CID),
                             FOREIGN KEY (CAID) REFERENCES card (CAID));
```

Table: customers_orders

```
CREATE table customers_orders(CID integer(30) not null,
                              PID integer (30) not null,
                              customers_orders date,
                              CAID integer(30) not null,
                               PRIMARY KEY (CID, CAID, customers_orders),
                               FOREIGN KEY (CID) REFERENCES customers (CID),
                              FOREIGN KEY (CAID) REFERENCES card (CAID),
                              FOREIGN KEY (PID) REFERENCES products(PID));
```

.

All Tables

Server: 127.0.0.1 » Database: goldstar

Structure	SQL	Search	Query	Export	Import	Oper

Filters

Containing the word:

Table ▲	Action						
address	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
card	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
cart	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
customers	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
customers_address	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
customers_card	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
customers_orders	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
products	☆	📋 Browse	🔧 Structure	🔍 Search	➕ Insert	🗑 Empty	⊖ Drop
8 tables	Sum						

Insert

Table: Address

```sql
INSERT INTO `address`(`AID`, `Astreet`, `Acity`, `Astate`, `Azip`) VALUES (210, '265 Fordham Road', 'Houma','FL', 11892)
```

			AID	Astreet	Acity	Astate	Azip
☐	🖉 Edit ⊞ Copy ⊖ Delete		201	2010 BackHill	Grove Street	PA	10203
☐	🖉 Edit ⊞ Copy ⊖ Delete		202	2213 Ithaca Street	Alimus	PA	11245
☐	🖉 Edit ⊞ Copy ⊖ Delete		203	4030 Demoplis Street	Elmhurst	IL	11267
☐	🖉 Edit ⊞ Copy ⊖ Delete		204	10245 84 Road	Richmond Hill	NY	11373
☐	🖉 Edit ⊞ Copy ⊖ Delete		205	654 Main Street	Decatur	SD	11245
☐	🖉 Edit ⊞ Copy ⊖ Delete		206	7324 High Street	Fort Payne	MO	10605
☐	🖉 Edit ⊞ Copy ⊖ Delete		207	2780 Canal	Talladega	TX	10216
☐	🖉 Edit ⊞ Copy ⊖ Delete		208	3967 Madison	Clearwater	CA	15342
☐	🖉 Edit ⊞ Copy ⊖ Delete		209	2135 Eire Road	Elkhart	KN	11564
☐	🖉 Edit ⊞ Copy ⊖ Delete		210	2654 Fortham Road	Houma	FL	11892

Table: Card

```sql
INSERT INTO `card`(`CAID`, `CAname`, `CAcompany`, `CAexpiration`, `CAstreet`, `CAcity`, `CAstate`, `CAzip`) VALUES (510, 'Chris', 'Carter', 2021-08-10, 783, 'Madison', 'Clearwater', 'CA', 15342)
```

		CAID	CAname	CAcompany	CAexpiration	CAcvc	CAstreet	CAcity	CAstate	CAzip
☐	🖉 Edit ⊞ Copy ⊖ Delete	501	Kimberly Clerk	Amex	2021-04-14	2324	2654 Fortham Road	Houma	FL	11892
☐	🖉 Edit ⊞ Copy ⊖ Delete	502	Jared Jame	Amex	2022-04-19	123	7324 High Street	Fort Payne	MO	10605
☐	🖉 Edit ⊞ Copy ⊖ Delete	503	Sammy Grace	Discover	2024-05-14	1234	4030 Demoplis Street	Elmhurst	IL	11267
☐	🖉 Edit ⊞ Copy ⊖ Delete	504	Justin Mark	Chase	2020-03-18	1001	654 Main Street	Decatur	SD	11245
☐	🖉 Edit ⊞ Copy ⊖ Delete	505	Mrinal Freed	Discover	2023-06-14	453	2135 Eire Road	Elkhart	KN	11564
☐	🖉 Edit ⊞ Copy ⊖ Delete	506	Evan Wallis	Amex	2025-02-17	1001	2010 BackHill	Groove Street	PA	10203
☐	🖉 Edit ⊞ Copy ⊖ Delete	507	Linda Fuzi	Mastercard	2026-04-28	453	10245 84 Road	Richmond Hill	NY	11373
☐	🖉 Edit ⊞ Copy ⊖ Delete	508	Tom Band	Paypal	2020-01-15	564	2213 Ithaca Street	Alimus	PA	11245
☐	🖉 Edit ⊞ Copy ⊖ Delete	509	Jeff Joe	City	2023-04-22	128	2780 Canal	Talladega	TX	10216
☐	🖉 Edit ⊞ Copy ⊖ Delete	510	Chris Carter	CapitalOne	2021-08-10	783	3967 Madison	Clearwater	CA	15342

Table: Customers

```
INSERT INTO `customers` (`CID`, `Cfname`, `Clname`, `Cemail`) VALUES ('110', 'Kimberly ', 'Clerk', 'CK@tech.org');
```

← 🖳 Server: 127.0.0.1 » 🗊 Database: goldstar » 📰 Table: customers

| | Browse | | Structure | | SQL | | Search | | Insert | | Export | | Import | | Privileges |

Show query box

✅ 1 row inserted. (Query took 0.0768 seconds.)

```
INSERT INTO `customers`(`CID`, `Cfname`, `Clname`, `Cemail`) VALUES (102,'Justin', 'Mark', 'JM@gmail.com')
```

✅ 1 row inserted. (Query took 0.0041 seconds.)

```
INSERT INTO `customers`(`CID`, `Cfname`, `Clname`, `Cemail`) VALUES (103,'Evan', 'Wallis', 'Evan123@gmail.com')
```

✅ 1 row inserted. (Query took 0.0040 seconds.)

```
INSERT INTO `customers`(`CID`, `Cfname`, `Clname`, `Cemail`) VALUES (104,'Tom', 'Band', 'tom_band@gmail.com')
```

←T→				CID	Cfname	Clname	Cemail
☐	🖉 Edit	Copy	⊖ Delete	101	Jared	Jame	jared.jame@gmail.com
☐	🖉 Edit	Copy	⊖ Delete	102	Justin	Mark	JM@gmail.com
☐	🖉 Edit	Copy	⊖ Delete	103	Evan	Wallis	Evan123@gmail.com
☐	🖉 Edit	Copy	⊖ Delete	104	Tom	Band	tom_band@gmail.com
☐	🖉 Edit	Copy	⊖ Delete	105	Chris	Carter	CrisC@yahoo.com
☐	🖉 Edit	Copy	⊖ Delete	106	Jeff	Joe	Jeff111@hotmail.com
☐	🖉 Edit	Copy	⊖ Delete	107	Linda	Fuzi	Fuzilinda@sru.edu
☐	🖉 Edit	Copy	⊖ Delete	108	Mrinal	Freed	FreedM@cuny.edu
☐	🖉 Edit	Copy	⊖ Delete	109	Sammy	Grace	SG@troy.com
☐	🖉 Edit	Copy	⊖ Delete	110	Kimberly	Clerk	CK@tech.org

Table: Products

```
INSERT INTO `products`(`PID`, `Pname`, `Ptype`, `Pcategory`, `Pcolor`, `Psize`, `Pprice`) VALUES ('Supercourt', 'Athletic', 'Performance', 'black', 11, 300, 10)
```

				Pname	Ptype	Pcategory	pcolor	psize	Pprice	PID
☐	Edit	Copy	Delete	RunShoes	Athletic	Male	Red	5	75	1
☐	Edit	Copy	Delete	Ultraboost	Sneakers	Male	Blue	7	95	2
☐	Edit	Copy	Delete	Nitejogger	Cleats	Female	Red	7	45	3
☐	Edit	Copy	Delete	Primeblue	Hightops	Male	pink	8	65	4
☐	Edit	Copy	Delete	Adizero	Slides	Male	grey	8	90	5
☐	Edit	Copy	Delete	Standsmith	Boots	Male	green	9	30	6
☐	Edit	Copy	Delete	ZX	Sandals	Female	blue	7	45	7
☐	Edit	Copy	Delete	Solar	Athletic	Kids	black	10	110	8
☐	Edit	Copy	Delete	Supercourt	Performance	Performance	black	11	300	10

Table: Customers_address

Server: 127.0.0.1 » Database: goldstar » Table: customers_address

Browse | Structure | SQL | Search | Insert | Export | Import

Run SQL query/queries on table goldstar.customers_address:

```
1  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (101,206);
2  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (109,203);
3  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (102,205);
4  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (108,209);
5  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (103,201);
6  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (107,204);
7  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (104,202);
8  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (106,207);
9  INSERT INTO `customers_address`(`CID`, `AID`) VALUES (105,208);
10
```

						CID	AID
☐	✏ Edit	⊞ Copy	⊖ Delete			101	206
☐	✏ Edit	⊞ Copy	⊖ Delete			102	205
☐	✏ Edit	⊞ Copy	⊖ Delete			103	201
☐	✏ Edit	⊞ Copy	⊖ Delete			104	202
☐	✏ Edit	⊞ Copy	⊖ Delete			105	208
☐	✏ Edit	⊞ Copy	⊖ Delete			106	207
☐	✏ Edit	⊞ Copy	⊖ Delete			107	204
☐	✏ Edit	⊞ Copy	⊖ Delete			108	209
☐	✏ Edit	⊞ Copy	⊖ Delete			109	203
☐	✏ Edit	⊞ Copy	⊖ Delete			110	210

Table: Customers_card

```
INSERT INTO `customers_card`(`CID`, `CAID`) VALUES (110, 501)
```

+ Options

						CID	CAID
☐	✏ Edit	⊞ Copy	⊖ Delete			101	502
☐	✏ Edit	⊞ Copy	⊖ Delete			102	504
☐	✏ Edit	⊞ Copy	⊖ Delete			103	506
☐	✏ Edit	⊞ Copy	⊖ Delete			104	508
☐	✏ Edit	⊞ Copy	⊖ Delete			105	510
☐	✏ Edit	⊞ Copy	⊖ Delete			106	509
☐	✏ Edit	⊞ Copy	⊖ Delete			107	507
☐	✏ Edit	⊞ Copy	⊖ Delete			108	505
☐	✏ Edit	⊞ Copy	⊖ Delete			109	503
☐	✏ Edit	⊞ Copy	⊖ Delete			110	501

Table: Customers_orders

```sql
INSERT INTO `customers_orders`(`CID`, `PID`, `CAID`, `order_date`, `price`) VALUES (104,4,508,'17/12/2019',95);
```

	CID	PID	CAID	order_date	price
☐ 🖊 Edit ⊞ Copy ⊖ Delete	102	3	504	2019-09-17	60.00
☐ 🖊 Edit ⊞ Copy ⊖ Delete	104	4	508	2019-10-17	95.00
☐ 🖊 Edit ⊞ Copy ⊖ Delete	105	6	506	2020-03-10	100.00
☐ 🖊 Edit ⊞ Copy ⊖ Delete	106	5	509	2019-11-12	30.00
☐ 🖊 Edit ⊞ Copy ⊖ Delete	108	7	505	2020-02-14	45.00

Question No. 4

1) *Deleting the primary key:*

address

```
DELETE FROM `address` WHERE AID =206
```

MySQL said:

```
#1451 - Cannot delete or update a parent row: a foreign key constraint fails (`goldstar`.`customers_address`, CONSTRAINT
`customers_address_ibfk_2` FOREIGN KEY (`AID`) REFERENCES `address` (`AID`))
```

2) *Update the values that has no primary/foreign keys:*

card

```
UPDATE `card`
SET CAname = 'Axl Rose'
WHERE CAID = 509;
```

| 509 | Axl Rose | City | 2023-04-22 | 128 | 2780 Canal | Talladega | TX | 10216 |

3) *Delete actions can be perform without viloating any constraints:*

Cart

```
DELETE FROM `cart` WHERE PID =4
```

4) *Delete actions cannot be perform because its viloating foreign key constraints*

Customers

```
DELETE FROM `customers` WHERE CID = 109
```

MySQL said:

```
#1451 - Cannot delete or update a parent row: a foreign key constraint fails (`goldstar`.`customers_address`,
CONSTRAINT `customers_address_ibfk_1` FOREIGN KEY (`CID`) REFERENCES `customers` (`CID`))
```

5) Inserting duplicate values:

Customers_address

```
INSERT INTO `customers_address`(`CID`, `AID`) VALUES (109, 203)
```

MySQL said:

```
#1062 - Duplicate entry '109-203' for key 'PRIMARY'
```

6) Updating parent row through foreign key is violating the constraints:

Customers_card

```
UPDATE `customers_card`
SET CID= 111, CAID= 555
WHERE CID = 101 and CAID = 502
```

MySQL said:

```
#1452 - Cannot add or update a child row: a foreign key constraint fails (`goldstar`.`customers_card`,
CONSTRAINT `customers_card_ibfk_1` FOREIGN KEY (`CID`) REFERENCES `customers` (`CID`))
```

7) Delete PID that's not in the cart or selected by customers is possible but deleting the PID that's in CART will violate the foreign constraints.

Products

```
DELETE FROM `products` WHERE PID = 6
```

MySQL said:

```
#1451 - Cannot delete or update a parent row: a foreign key constraint fails
(`goldstar`.`cart`, CONSTRAINT `cart_ibfk_2` FOREIGN KEY (`PID`) REFERENCES `products`
(`PID`))
```

CART

CID	PID	Quantity
105	6	1

Question No. 5

Sample SQL code to retrieve data from tables:

1) List of customers whose orders are in cart.

CART Table

CID	PID	Quantity
103	2	1
103	8	1
105	6	1

```sql
SELECT c.Cfname, c.Clname, p.Pname, p.Ptype, p.Pcategory, p.Pprice, ca.Quantity from customers c, products p,
cart ca WHERE c.CID = ca.CID and p.PID = ca.PID
```

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

☐ Show all | Number of rows: 25 ▼   Filter rows: [Search this table]

+ Options

Cfname	Clname	Pname	Ptype	Pcategory	Pprice	Quantity
Evan	Wallis	Ultraboost	Sneakers	Male	95	1
Evan	Wallis	Solar	Athletic	Kids	110	1
Chris	Carter	Standsmith	Boots	Male	30	1

2)Give customer name, product name that was ordered from 2019

CID	PID	CAID	order_date	price
102	3	504	2019-09-17	60.00
104	4	508	2019-10-17	95.00
105	6	506	2020-03-10	100.00
106	5	509	2019-11-12	30.00
108	7	505	2020-02-14	45.00

```
SELECT c.Cfname, c.Clname, p.pname from customers c,products p, customers_orders co WHERE
co.order_date BETWEEN '2019-01-01' and '2019-12-31' and c.CID = co.CID AND p.PID = co.PID
```

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

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

+ Options

Cfname	Clname	pname
Justin	Mark	Nitejogger
Tom	Band	Primeblue
Jeff	Joe	Adizero

3) Give the address of customers who ordered in 2020.

```
1  SELECT c.Cfname, a.Astreet, a.Acity, a.Astreet, a.Azip from customers
   c,address a, customers_orders co, customers_address ca
2  WHERE co.CID = c.CID
3  and co.cid = ca.CID
4  AND ca.AID =  a.AID
5  AND co.order_date BETWEEN '2020-01-01' AND '2020-12-31'
```

☑ Enable foreign key checks

(Go) (Cancel)

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

☐ Show all | Number of rows: 25 ▼   Filter rows: Search this t

+ Options

Cfname	Astreet	Acity	Astreet	Azip
Chris	3967 Madison	Clearwater	3967 Madison	15342
Mrinal	2135 Eire Road	Elkhart	2135 Eire Road	11564

4) Which card was used in 2019-11-12 transactions and who used it?

```
SELECT c.Cfname, r. CAID from customers c, customers_orders co, customers_card
r WHERE c.CID = co.CID and r.CAID = co.CAID AND co.order_date = '2019-11-12'
```

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

☐ Show all | Number of rows: 25 ▼   Filter rows: Search this tab

+ Options

Cfname	CAID
Jeff	509

5) Give the details of customers to be contacted whose card have been expired.

```
SELECT d.CAname,d.CAexpiration, d.CAstreet,d.CAcity,d.CAstate,d.CAzip from card d WHERE d.CAexpiration < '2020-
04-18'
```

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

☐ Show all | Number of rows: 25 ▼   Filter rows: Search this table   Sort by key: No

+ Options

←T→	▼	CAname	CAexpiration	CAstreet	CAcity	CAstate	CAzip
☐ 🖉 Edit ⊞ Copy ⊖ Delete		Justin Mark	2020-03-18	654 Main Street	Decatur	SD	11245
☐ 🖉 Edit ⊞ Copy ⊖ Delete		Tom Band	2020-01-15	2213 Ithaca Street	Alimus	PA	11245