CS586 Introduction to Databases Fall 2021 Quarter

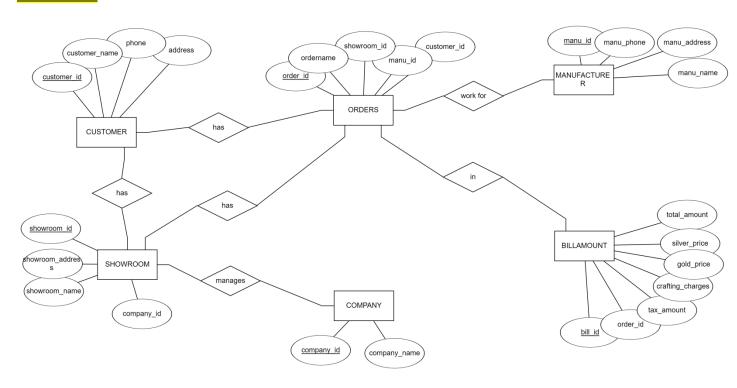
Graduate Project Database Implementation by:

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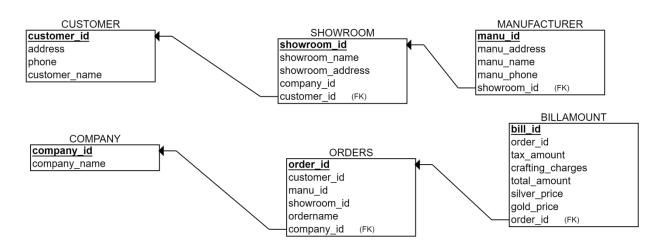
Project Overview:

- The purpose of this project is to give the Showroom a simple and userfriendly interface to coordinate all the details regarding their Customers and manufactures. In general, an company's development and practices are its intentional efforts to improve current and future performance by helping customers to place their orders easily.
- jewellery management system focuses on the basic entities of the manufacturing process. For example, the customers, manufactures, orders and showroom.
- Jewellery Management Database is a storage capacity which enable the Showroom to keep track of their Customers, Manufacturers and their respective Orders efficiently. This database provides common platform for every Showroom. This project serves as a handy tool to manage and organize the details of the Customers and their respective Orders in a systematic manner. It also helps the administrator/manager to have good control on them. The database can be referred for most of the queries regarding the same, which eliminates the use of paper to a large extent. The main advantage is the flexibility of addition of Customers, Bill Generation and Display orders undertaken by a showroom data sharing and also the permanent storage of data which can be retrieved and referred anytime.
- The Showroom of the database has a physical copy of all the details related to the Customers, Manufacturers and their respective Orders. But if this digitalized method is used, work is made easy and efficient along with the advantage of saving one's time.
- This can be applied to teachers' training, IT industry training, students' training or any sort of training in the real world as it is a generalized approach to cater the necessities of data storage, retrieval and modification operations.

ER DIAGRAM



SCHEMA DIAGRAM



TABLES & INFORMATION ABOUT ALL THE KEYS INCLUDING PRIMARY KEYS AND FOREIGN KEYS.

Customer it consists of four attributes.

(Customer_id,Customer_name,Phone,Address)

Customer_id is the foreign key to Orders table.

ORDERS it has five attributes.

(Order_id,Order_name,Showroom_id,Manu_id,Customer_id)

MANUFACTURE it has four attributes.

(Manu_id,Manu_phone,Manu_address,Manu_name)

SHOWROOM it has four attributes

(Showroom id, Showroom address, Showroom name, Company id)

Showroom_id is the foreign key to Orders table.

BILLAMOUNT it has seven attributes

(Bill_id,Order_id,Tax_amount,Crafting_charges,Gold_price,Silver_price,Total_amount)

Bill_id is the foreign key to Order table.

COMPANY it has two attributes

(Company_id,Company_name)

Company_id is the foreign key to Showroom table

CREATING TABLE QUERIES WITH ONE ROW OF THE SAMPLE DATA. (This is an Editable copy which was made in Visual Studio Code)

```
CREATE TABLE customer (
   customer_id int NOT NULL,
   customer_name varchar(255) NOT NULL,
   address varchar(255),
   phone CHAR(10),
   PRIMARY KEY (customer id));
INSERT INTO customer (customer_id, customer_name, address, phone)
VALUES ('1', 'Erichsen', 'Portland', '7896541254');
______
CREATE TABLE showroom (
   showroom_id int NOT NULL,
   showroom_name varchar(255) NOT NULL,
   address varchar(255),
   PRIMARY KEY (showroom_id));
INSERT INTO showroom (showroom_id, showroom_name, address)
VALUES ('1', 'GRTGOLD', 'INDIA');
CREATE TABLE manufacturer (
   manu_id int NOT NULL,
   manu_name varchar(255) NOT NULL,
   manu_address varchar(255),
   manu_phone CHAR(10),
   PRIMARY KEY (manu_id));
INSERT INTO manufacturer (manu_id, manu_name, manu_address, manu_phone)
VALUES ('1', 'AA_FACTORIES', 'INDIA', 9874568485);
CREATE TABLE orders (
   order_id int NOT NULL,
   customer_id int NOT NULL,
   manu id int NOT NULL,
   showroom id int NOT NULL,
   order_name varchar(255),
   company id int,
   PRIMARY KEY (order_id),
   FOREIGN KEY (customer_id) REFERENCES customer(customer_id),
   FOREIGN KEY (manu_id) REFERENCES manufacturer(manu_id),
   FOREIGN KEY (showroom_id) REFERENCES showroom(showroom_id));
INSERT INTO orders (order_id, customer_id, manu_id, showroom_id, order_name)
VALUES (1, 1, 1, 1, "Gold_Chain");
-----
```

```
CREATE TABLE billamount (
   bill_id int NOT NULL,
   order_id int NOT NULL,
   tax_amount int,
   crafting_charges int,
   gold_price int,
   silver_price int,
   total_bill int,
   PRIMARY KEY (bill_id),
   FOREIGN KEY (order_id) REFERENCES orders(order_id));

==

INSERT INTO billamount (bill_id, order_id, tax_amount, crafting_charges, gold_price, silver_price, total_bill)
VALUES (1, 1, 250, 150, 500, 400, 1300);
```

A brief description of how you populated the database

- I have populated the data on my own depending on the queries which ever I need.
- I have designed the database in such a realistic way that resembles the real scenario which is presently being used by the big merchanants and gold smith business.
- I have randomly generated the customer names, address, showroom names, manufacturer names using the https://www.mockaroo.com/ where it has a feature of generating random set of values in bulk which is fake and irrelevant to any means of data.
- Mockaroo has a great data mocking libraries available for almost every language and platform. But not everyone is a programmer or has time to learn a new framework. Mockaroo allows you to quickly and easily to download large amounts of randomly generated test data based on your own specs which you can then load directly into your test environment using SQL or CSV formats. No programming is required.
- Using the above tool I have generated the data for six tables i.e Customer, Orders, Manufacturers, Showroom, Company, Billamount.

Questions.

 List all the customers, showrooms, manufacturers in the database. (To avoid the huge data im showing the sample of 10 rows of data)
 Ans)

```
SELECT * FROM CUSTOMER LIMIT 10;
SELECT * FROM SHOWROOM LIMIT 10;
SELECT * FROM MANUFACTURER LIMIT 10;
```

Ans)

```
fall2021db44=> select * from customer limit 10;

customer_id | customer_name | address | phone

2 | Cherilynn Stempe | 74 Acker Crossing | 4377091858

3 | Frannie Pevsner | 1 Claremont Court | 3263889003

4 | Nikola Simek | 61 Mallory Plaza | 9687672840

5 | Jobina Gouda | 69 Russell Court | 8178649261

6 | Aldin Haw | 3789 Lakewood Junction | 5395232415

7 | Janet Bullion | 0120 Veith Parkway | 2322932450

8 | Debora Bulley | 18812 Twin Pines Plaza | 3881989676

9 | Ailee Pretswell | 12013 Fair Oaks Avenue | 1901682500

10 | Myriam Pischoff | 15605 Logan Circle | 3329741442

11 | Stillman Perell | 37 Fuller Park | 8717409572

(10 rows)
```

```
fall2021db44=> select * from manufacturer limit 10;
                                                          manu address | manu phone
manu id | manu name |
    2001 | Gislason Inc
                                                  | 967 Northfield Center | 9208945632
    2002 | Weissnat Group
                                                 | 30 Calypso Plaza
                                                                               | 3474273387
    2003 | Hessel Group
                                                 | 43085 Maywood Point
                                                                                 | 4591120978
                                                  | 51610 Annamark Terrace | 7106088931
    2004 | Hyatt-Rempel
    2005 | Emmerich, Grimes and Langworth | 17 Stoughton Alley | 2587501075
    2006 | Schmitt-Nitzsche | 22173 Comanche Junction | 3658262730
    2007 | Schulist Group
                                                 | 73188 Westerfield Trail | 1932037506

      2008 | Wilkinson LLC
      | 3 Becker Avenue
      | 6882513222

      2009 | Medhurst, Volkman and Mohr
      | 83844 Elka Center
      | 9361965584

      2010 | Nitzsche-Weber
      | 4491 Jackson Road
      | 3934552034

(10 rows)
```

List the name of customers who has brought the ornaments greater than 5000 bill amount.
 Ans) select customer_customer_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order_id = billamount.order_id where billamount.total_bill > 5000;
 Rows Returned: 46

3. List the order, customer name who has the highest price of the order.

select billamount.total_bill, customer.customer_name,orders.order_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order_id = billamount.order_id where billamount.total_bill = (select max(billamount.total_bill) from billamount);

4. List all the customers who brought the ornaments at the highest gold price.

select billamount.gold_price, customer.customer_name,orders.order_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order_id = billamount.order_id where billamount.gold_price = (select max(billamount.gold_price) from billamount);

5. List all the jewllery that has the highest making charges

select orders.order_name, billamount.crafting_charges from billamount inner join orders on orders.order_id = billamount.order_id where gold_price = (select max(billamount.gold_price) from billamount);

```
fall2021db44=> select orders.order_name, billamount.crafting_charges from billamount inner join orders on orders.order_id = billamount.order_id where gold_price = (select max(billamount.go d_price) from billamount);
order_name | crafting_charges

Bangle | 1001
(| row|)
```

6. List all the customers who brought the ornaments at the highest silver price.

Ans).

select customer.customer_name, orders.order_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order_id = billamount.order_id where silver_price = (select max(billamount.silver_price) from billamount);

```
fall2021db44>> select customer_customer_name, orders.order_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order_id = billamount.or orders.order_name | order_name | order_na
```

7. List the showrooms which are located at specific location. Ans).

select showroom_name, showroom_address from showroom where showroom_address = '3684 Melody Park';

```
all2021db44=> select showroom name, showroom address from showroom where showroom address = '3684 Melody Park';
      showroom name
                          | showroom address
Mayer, Wisoky and Toy
                           | 3684 Melody Park
Lang and Sons
                            3684 Melody Park
                            3684 Melody Park
Schaefer LLC
Rowe-Crooks
                            3684 Melody Park
                            3684 Melody Park
Keebler and Sons
Von, Hoppe and Berge
                             3684 Melody Park
Feil, Marquardt and Wisoky | 3684 Melody Park
Lindgren-Mayer
                             3684 Melody Park
Robel, Windler and Osinski | 3684 Melody Park
9 rows)
```

8. List all the manufacture names who has the orders greater than 2000. Ans).

select manufacturer.manu_name from manufacturer inner join orders on orders.manu_id = manufacturer.manu_id inner join billamount on billamount.order_id = orders.order_id where billamount.total_bill > 2000;

```
manu_name

Emmerich, Kuhlman and Hirthe
Buckridge, Schmitt and Tremblay
Kessler-Boehm
Mosciski-Bechtelar
Spinka-Koch
Kohler-Morar
Rice-Doyle
Flatley, Krajcik and Kihn
Becker-Oberbrunner
Swift Group
Jacobson, Lesch and Schinner
Emmerich Group
Marquardt and Sons
Erdman and Sons
```

9. List all the customers who has made the orders with the bill amount at the lowest price. Ans).

select customer.customer_name, orders.order_name,billamount.total_bill from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order_id = billamount.order_id where total_bill = (select min(billamount.total_bill) from billamount);

```
fell203/db44> select customer.customer name, orders.order name, billamount.total bill from customer join orders on orders.customer_id = customer.customer_id inner join billamount on orders.order in der id = billamount.order_id = customer.customer_id inner join billamount on orders.order_id = customer_id = cus
```

10. List all the showroom names who have the orders with the name 'Bangles'.

select showroom.showroom_name, orders.order_name from showroom inner join orders on orders.showroom_id = showroom.showroom_id where orders.order_name = 'Bangle';

11. List the orders and customer names who has the making charge greater than 500 Select

Ans)

select customer.customer_name, orders.order_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on billamount.order_id = orders.order_id where crafting_charges = (select billamount.crafting_charges where billamount.crafting charges > 500):

binamount erarting_enarges > 500/)								
customer_name	order_name	crafting_charges						
	+							
Anneliese Thornham	Little Millet	501						
Barton Hairsnape	Bangle	503						
Reidar Rolls	Xanthoparmelia Lichen	505						
Frannie Bauman	Yerba Santa	507						
Alika Passler	Barnacle Lichen	509						
Janella Varley	Beet	511						
Pamelina Gerrell	Snake River Twinpod	513						
Rooney Padillo	San Diego Raspberry	515						
Jefferson Astbury	Wax Mallow	517						
Micheal Leabeater	earring	519						
Jamison Highnam	Coralbush	521						
Morse Gazev	Tepic Flameflower	523						

12. List all the customers who made the order named 'Chains'.

Ans)

select customer.customer_name from customer inner join orders on orders.customer_id = customer.customer_id inner join billamount on billamount.order_id = orders.order_id where orders.order_name = 'Chain';

13. List the minimum of total bill.

Ans.) select min(billamount.total_bill) from billamount;

```
fall202ldb44=> select min(billamount.total_bill) from billamount;
min
----
11
(1 row)
```

14. List the average of the total bill

Ans.

select avg(billamount.total_bill) from billamount;

15. List the max of the total bill Ans.)

select max(billamount.total_bill) from billamount;

```
fall202ldb44=> select max(billamount.total_bill) from billamount;
max
-----
5500
(1 row)
```

16. List all the orders, bill amounts, manufacturers, showrooms and customers whose order names are earring

Ans.)

'earring');

select customer_customer_name,orders.order_name as order_type,manufacturer.manu_name as manufacturer_name, showroom.showroom_name, billamount.total_bill from customer inner join orders on orders.customer_id = customer.customer_id inner join manufacturer on manufacturer.manu_id = orders.manu_id inner join showroom on showroom.showroom_id = orders.showroom_id inner join billamount on billamount.order_id = orders.order_id where order_name = (select orders.order_name from orders where orders.order_name = 'earring' limit 1);

customer name	order type	manufacturer name	showroom name		l bill	
Customer_name		manulacturer_name		LOLA	. biii 	
urtis Fleckness	earring	Little, Grimes and Gusikowski	Osinski-Nitzsche			
lobers Maybury	earring	Heidenreich-Kuphal	Jenkins-Berge			
ludd Jakoubek	earring	Zulauf, Pacocha and Torp	Hintz, Kihn and Dooley			
race Flannigan	earring	Stehr LLC	Carroll-Stamm			
toch Frowing	earring	Bechtelar-Kuhic	Hermiston-Daugherty			
Caitlin Gillani	earring	Dicki, Leannon and Raynor	Corkery, Langosh and Jaskolski			
apagena Gabbot	earring	Gerhold-Zemlak	Corkery, Stroman and Roob			
ilvia Willison	earring	Murray Inc	Koepp Group		1848	
onya Whereat	earring	Spinka-Koch	Cruickshank-Davis			
Seorgianna Tringham	earring	Carter-Russel	Kohler-Schowalter			
Salomi Abbess	earring	Ratke, Pollich and Mueller	Pagac-Douglas			
eyla Voaden	earring	Keeling-Davis	Upton and Sons		2442	
utter Oldroyd	earring	Hilpert Inc	Gleason, Jones and Macejkovic			
apageno Lamerton	earring	Crooks LLC	Cole, Herman and Koepp			
Micheal Leabeater		Becker Group	Schultz-Price		2849	
Roseline Argile	earring	Stroman, Lind and Skiles	White-Ortiz		2981	
Mattie McLugish	earring	Powlowski Group	Miller Group		3245	
letti Janczyk		Fritsch, Kuhn and Wiza	Rohan, Friesen and Dach			
aulie Arkin	earring	Jacobs LLC	Nader Inc		3465	
ephthah Erasmus	earring	Miller-Wiegand	Feil-Wolf		3597	

17. List the total count of customers and showrooms whose orders are ear rings. Ans.)

SELECT COUNT(customer.customer_name) AS customerCount,
COUNT(showroom.showroom_name) AS showroomCount FROM customer JOIN orders ON
(orders.customer_id = customer.customer_id AND orders.order_name = 'earring') JOIN
showroom ON (orders.showroom_id = showroom.showroom_id AND orders.order_name =

18. list the total number of showrooms that have orders with order name necklace Ans.)

select count(showroom.showroom_name) as showroomCount from showroom inner join
orders on orders.showroom_id = showroom.showroom_id where orders.order_name =
'necklace';



19. list all the orders whose customers live in a specific area address.

Ans.)

select orders.order_name from orders inner join customer on orders.customer_id = customer.customer_id where customer.address = '3789 Lakewood Junction';

```
fall2021db44=> select orders.order_name from orders inner join customer on orders.customer_id = customer.customer_id where customer.address = '3789 Lakewood Junction';
order_name

Chain
(1 row)
```

20. List all the making charges, gold prices, silver prices whose total is greater than 5000 .

select billamount.crafting_charges, billamount.gold_price, billamount.silver_price from billamount where billamount.total bill > 5000;

A listing of 5 rows from each of your tables:

select * from customer limit 5;

select * from orders limit 5;

select * from manufacturer limit 5;

select * from billamount limit 5;

select * from company limit 5;

```
[all2021db44=> select * from customer limit 5;
customer_id | customer_name | address
                                                                                      phone
              | 2 | Cherilynn Stempe | 74 Acker Crossing | 4377091858
| 3 | Frannie Pevsner | 1 Claremont Court | 3263889003
| 4 | Nikola Simek | 61 Mallory Plaza | 9687672840
| 5 | Jobina Gouda | 69 Russell Court | 8178649261
| 6 | Aldin Haw | 3789 Lakewood Junction | 5395232415
fall2021db44=> select * from orders limit 5;
 order_id | customer_id | manu_id | showroom_id |
                                                            3001 | Chain
3002 | Notothylas
3003 | Spreading Navarretia
3004 | Pterostegia
3005 | necklace
                                        2001 |
       1001 |
                                         2003 |
2004 |
      1004 I
                           manu_name
                                                                     manu_address
                                                                                               | manu_phone
    2001 | Gislason Inc
2002 | Weissnat Group
2003 | Hessel Group
2004 | Hyatt-Rempel
                                                           | 30 Calypso Plaza
| 43085 Maywood Point | 4591120978
| 51610 Annamark Terrace | 7106088931
     2005 | Emmerich, Grimes and Langworth | 17 Stoughton Alley
 bill_id | order_id | tax_amount | crafting_charges | gold_price | silver_price | total bill
                    1001 |
1002 |
     4002 |
     4005 I
fall2021db44=> select * from company limit 5;
 company_id | company_name
             1 | SEATTLE JEWLS
             2 | PHOENIX JEWLS
3 | NEWYORK JEWLS
             4 | PORTLAND JEWLS
5 | FLORIDA JEWLS
 all2021db44=> select * from showroom limit 5;
 showroom_id | showroom_name | showroom_address | company_id
          fal12021db44=>
```

References:

https://www.kaggle.com/

https://www.mockaroo.com/mock_apis

https://www.mockaroo.com/