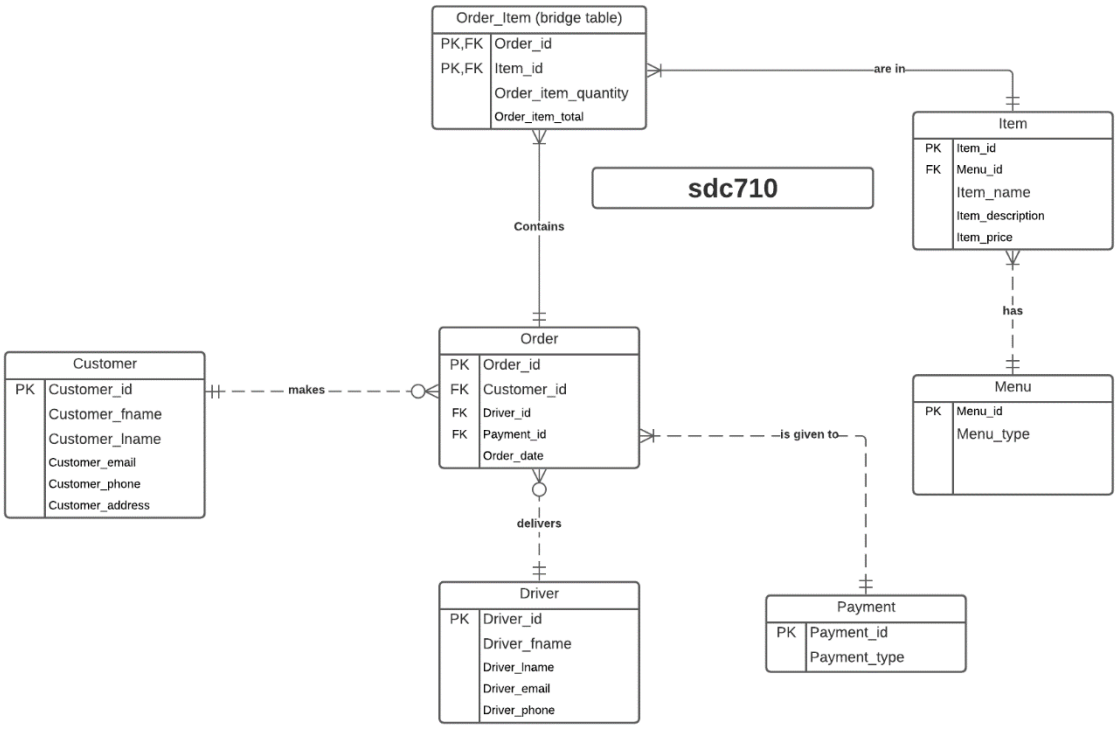
sdc710

Narrative

Asian Taste is a new restaurant that started recently in Montreal. As the name implies, they serve Asian cuisine to customers. Being a new company, they want someone to help them manage their business decisions. You decide to help them. The first thing that Asian Taste need is to implement a database to store all the data that they have gathered. Secondly, using the data, they want someone to be able to generate insights for their business by answering a few questions.

Entity-Relationship Diagram

This is an overview of how the data will be store by Asian Taste.



Customer: Entity that keeps track of information from customers who purchased at Asian Flavours.

Driver: Entity that keeps track of information from drivers that will deliver the food to customers.

Payment: Entity that keeps track of the method of payment. (Debit, credit, cash)

Order: Entity that keeps track of specific information about a customer, his order, his method of payment, his review code etc.

Menu: Entity that provides information about which country the item is from.

Item: All the items/dishes that are made at Asian Taste.

Order_item: Additional information about a specific order with number of items in it and the ordered quantity.

Implementation (PostgreSQL)

Customer

CREATE

```
CREATE TABLE Customer (
Customer_id INTEGER PRIMARY KEY,
Customer_fname VARCHAR(30) NOT NULL,
Customer_lname VARCHAR(30) NOT NULL,
Customer_email VARCHAR(30) NOT NULL,
Customer_phone VARCHAR(20) NOT NULL,
Customer_address VARCHAR(30) NOT NULL
);
```

INSERT

```
INSERT INTO Customer (Customer_ID, Customer_FName, Customer_LName, Customer_email,
Customer_Phone,Customer_address)
VALUES
(1359,'Matt', 'Blouin', 'Mblouin09@td.com','438-655-5454', '34 Gouin'),
(1983,'Kaleen','Bryan', 'Kbryan@yahoo.ca','555-465-4644','939 Meadow Lane'),
(8709,'Dani','Hartman' ,'Mrdani@gmail.com','454-554-8776', '99 Milton Avenue'),
(3273,'Izabella','Duncan','Iduncan@gmail.com','543-999-5431', '12 Mill Close'),
(4052,'Myla','Raymond','MylaRaymond32@hotmail.com','434-674-5531','5600 Mulberry Street'),
(1491,'Marshall','Salazar','Masalazar1992@outlook.com','312-754-1234','45 Maple Avenue'),
(1301,'Harriett','Mansell','Mansell.Harriet@rogers.ca','678-874-1231','3000 Rene-Levesque'),
(9309,'Rikki','Knox','Rikki132@yahoo.ca','656-788-2424','5645 Sherbrooke East'),
(1661,'Leanna','Merritt' ,'Leanna.Merritt@hotmail.com','987-354-0863', '333 De La Montagne'),
(5758, 'Dave' ,'Schmidt', 'Daveschmidt@hotmail.com','643-653-5532','132 Durocher');
```

PostgreSQL

	customer_id [PK] integer	customer_fname character varying (30)	customer_lname character varying (30)	customer_email character varying (30)	customer_phone character varying (20)	customer_address character varying
1	1359	Matt	Blouin	Mblouin09@td.com	438-655-5454	34 Gouin
2	1983	Kaleen	Bryan	Kbryan@yahoo.ca	555-465-4644	939 Meadow Lane
3	8709	Dani	Hartman	Mrdani@gmail.com	454-554-8776	99 Milton Avenue
4	3273	Izabella	Duncan	Iduncan@gmail.com	543-999-5431	12 Mill Close
5	4052	Myla	Raymond	MylaRaymond32@hotmail.c...	434-674-5531	5600 Mulberry Str
6	1491	Marshall	Salazar	Masalazar1992@outlook.com	312-754-1234	45 Maple Avenue
7	1301	Harriett	Mansell	Mansell.Harriet@rogers.ca	678-874-1231	3000 Rene-Levesq
8	9309	Rikki	Knox	Rikki132@yahoo.ca	656-788-2424	5645 Sherbrooke E
9	1661	Leanna	Merritt	Leanna.Merritt@hotmail.com	987-354-0863	333 De La Montag
10	5758	Dave	Schmidt	Daveschmidt@hotmail.com	643-653-5532	132 Durocher

Driver

CREATE

```
CREATE TABLE Driver (
Driver_id INTEGER PRIMARY KEY,
Driver_fname VARCHAR(30) NOT NULL,
Driver_lname VARCHAR(30) NOT NULL,
Driver_email VARCHAR(30) NOT NULL,
Driver_phone VARCHAR(20) NOT NULL
);
```

INSERT

```
INSERT INTO Driver (Driver_ID,Driver_FName, Driver_LName, Driver_Email, Driver_Phone)
VALUES
(327420,'Syman','Torrijos', 'storrijos0@live.com','986-881-3200'),
(602469,'Rosabella','Rankmore','rrankmore1@google.com','816-598-4668'),
(732830,'Brier','Churchyard','bchurchyard2@gravatar.com','972-530-1093'),
(806855,'Antonietta','Faireclough','afaireclough3@concordia.ca','868-236-7183'),
(782324,'Terra','Woollett','twoollett4@nsw.ca','244-191-3734'),
(459399,'Neel','Twinborne', 'ntwinborne5@hotmail.com','938-684-6785'),
(464207,'Abigale','Ranklin','aranklin6@wire.com','393-182-6401'),
(590044,'Correna','Kilmister','ckilmister@bloglovin.com','878-411-3770'),
(768766,'Andros','MacKibbon','amackibbon8@delicious.com','149-252-3689'),
```

(687598,'Garvey','Kimmons','gkimmons9@admin.ch','381-984-7975');

PostgreSQL

	driver_id [PK] integer	driver_fname character varying (30)	driver_lname character varying (30)	driver_email character varying (30)	driver_phone character varying (20)
1	327420	Syman	Torrijos	storrijos0@live.com	986-881-3200
2	602469	Rosabella	Rankmore	rrankmore1@google.com	816-598-4668
3	732830	Brier	Churchyard	bchurchyard2@gravatar.com	972-530-1093
4	806855	Antonietta	Faireclough	afaireclough3@concordia.ca	868-236-7183
5	782324	Terra	Woollett	twoollett4@nsw.ca	244-191-3734
6	459399	Neel	Twinborne	ntwinborne5@hotmail.com	938-684-6785
7	464207	Abigale	Ranklin	aranklin6@wire.com	393-182-6401
8	590044	Correna	Kilmister	ckilmister@bloglovin.com	878-411-3770
9	768766	Andros	MacKibbon	amackibbon8@delicious.com	149-252-3689
10	687598	Garvey	Kimmons	gkimmons9@admin.ch	381-984-7975

Payment

CREATE

```
CREATE TABLE Payment (
Payment_id INTEGER PRIMARY KEY,
Payment_type VARCHAR(10) NOT NULL
);
```

INSERT

```
INSERT INTO Payment (Payment_ID,Payment_Type)
VALUES
(16261030,'Debit'),
(16220712,'Credit'),
(16000811,'Cash');
```

PostgreSQL

	payment_id [PK] integer	payment_type character varying (10)
1	16261030	Debit
2	16220712	Credit
3	16000811	Cash

Orders

CREATE

```
CREATE TABLE Orders (
Order_id SMALLINT PRIMARY KEY,
Customer_id INTEGER NOT NULL,
Driver_id INTEGER NOT NULL,
Payment_id INTEGER NOT NULL,
Order_date DATE NOT NULL,
FOREIGN KEY (Customer_id) REFERENCES Customer (Customer_id),
FOREIGN KEY (Driver_id) REFERENCES Driver (Driver_id),
FOREIGN KEY (Payment_id) REFERENCES Payment (Payment_id)
);
```

INSERT

```
INSERT INTO Orders (Order_ID,Customer_id,Driver_id,Payment_id ,Order_date)
 VALUES
(10,1983,327420,16261030,'2021-06-15'),
(11,1983,602469,16261030,'2021-06-07'),
(12,1983,732830,16261030,'2021-06-30'),
(13,1359,806855,16220712,'2021-06-15'),
(14,3273,782324,16220712,'2021-06-11'),
(15,1359,459399,16220712,'2021-06-04'),
(16,8709,464207,16220712,'2021-06-02'),
(17,4052,590044,16000811,'2021-06-02'),
(18,1301,768766,16000811,'2021-06-02'),
(19,1491,687598,16220712,'2021-06-04'),
(20,9309,687598,16220712,'2021-06-05'),
(21,5758,687598,16220712,'2021-06-02'),
(22,1661,768766,16000811,'2021-06-29'),
(23,1983,327420,16261030,'2021-06-29'),
```

(24,1491,687598,16220712,'2021-06-30');

PostgreSQL

	order_id [PK] smallint	customer_id integer	driver_id integer	payment_id integer	order_date date
1	10	1983	327420	16261030	2021-06-15
2	11	1983	602469	16261030	2021-06-07
3	12	1983	732830	16261030	2021-06-30
4	13	1359	806855	16220712	2021-06-15
5	14	3273	782324	16220712	2021-06-11
6	15	1359	459399	16220712	2021-06-04
7	16	8709	464207	16220712	2021-06-02
8	17	4052	590044	16000811	2021-06-02
9	18	1301	768766	16000811	2021-06-02
10	19	1491	687598	16220712	2021-06-04
11	20	9309	687598	16220712	2021-06-05
12	21	5758	687598	16220712	2021-06-02
13	22	1661	768766	16000811	2021-06-29
14	23	1983	327420	16261030	2021-06-29
15	24	1491	687598	16220712	2021-06-30

Menu

CREATE

```
CREATE TABLE Menu (
Menu_id SMALLINT PRIMARY KEY,
Menu_type VARCHAR (30) NOT NULL
);
```

INSERT

```
INSERT INTO Menu (Menu_Id,Menu_Type)
VALUES
(80,'Korean'),
(81,'Japanese'),
(82,'Chinese'),
(83,'Cambodian'),
(84,'Thai');
```

PostgreSQL

	menu_id [PK] smallint	menu_type character varying (30)
1	80	Korean
2	81	Japanese
3	82	Chinese
4	83	Cambodian
5	84	Thai

Item

CREATE

```
CREATE TABLE Item (
Item_id INTEGER PRIMARY KEY,
Menu_id INTEGER NOT NULL,
Item_name VARCHAR(30) NOT NULL,
Item_description TEXT NOT NULL,
Item_price NUMERIC NOT NULL,
FOREIGN KEY (Menu_id) REFERENCES Menu (Menu_id)
);
```

INSERT

```
INSERT INTO Item (Item_id, Menu_id, Item_name, Item_description, Item_price)
VALUES
(1001,80,'Bibimbap', 'Korean Rice with Mixed Vegeatables', 12.50),
(1002,80,'Bulgogi', 'Korean BBQ Beef',10.50),
(2001,81,'Onigiri', 'Rice Balls',6),
(2002,81,'Soba', 'Buckwheat Noodles',10),
(3001,82,'Sweet and Sour Chicken', 'Crispy Seasoned Chicken',7.50),
(3002,82,'Wonton Soup', 'Chinese Dumpling in a Soup',6.50),
(4002,83,'Khmer Curry', 'Rich, Flavorful Curry',11),
(4003,83,'Fish Amok', 'Curried Fish Steamed in Banana Leaves',8),
(5002,84,'Pad Thai', 'Stir-Fried Rice Noodles ',8.50),
```

(5003,84,'Bánh mì', 'Vietnamese Sandwich',7);

PostgreSQL

	item_id [PK] integer	menu_id integer	item_name character varying (30)	item_description text	item_price numeric
1	1001	80	Bibimbap	Korean Rice with Mixed Vegeatables	12.50
2	1002	80	Bulgogi	Korean BBQ Beef	10.50
3	2001	81	Onigiri	Rice Balls	6
4	2002	81	Soba	Buckwheat Noodles	10
5	3001	82	Sweet and Sour Chicken	Crispy Seasoned Chicken	7.50
6	3002	82	Wonton Soup	Chinese Dumpling in a Soup	6.50
7	4002	83	Khmer Curry	Rich, Flavorful Curry	11
8	4003	83	Fish Amok	Curried Fish Steamed in Banana Leaves	8
9	5002	84	Pad Thai	Stir-Fried Rice Noodles	8.50
10	5003	84	Bánh mì	Vietnamese Sandwich	7

Order_item

CREATE

```
CREATE TABLE Order_item (
Order_id SMALLINT NOT NULL,
Item_id INTEGER NOT NULL,
Order_item_quantity SMALLINT NOT NULL,
Order_item_total NUMERIC NOT NULL,
FOREIGN KEY(Order_id) REFERENCES Orders (Order_id),
FOREIGN KEY(Item_id) REFERENCES Item (Item_id),
PRIMARY KEY(Order_id, Item_id)
);
```

INSERT

```
INSERT INTO Order_Item (Order_id, Item_id, Order_item_quantity, Order_item_total)
VALUES
(10,1001,1,12.50),
(10,1002,2,21),
(11,5003,2, 14),
(12,2001,1, 6),
```

(12,5002,1, 8.50),

(13,2001,2, 12),

(13,3001,1, 7.50),

(14,4002,1, 11),

(15,4003,1, 8),

(16,3002,3, 19.50),

(17,2002,1, 10),

(18,5003,2, 14),

(18,2002,2, 20),

(19,1001,3, 37.50),

(20,3001,1, 7.50),

(20,3002,1, 6.50),

(20,4002,1, 11),

(21,5002,2, 17),

(22,5003,1, 7),

(23,3002,1, 6.50),

(23,4003,1, 8),

(24,2001,4, 24),

(24,1002,3, 31.50);

PostgreSQL

	order_id [PK] smallint	item_id [PK] integer	order_item_quantity smallint	order_item_total numeric
1	10	1001	1	12.50
2	10	1002	2	21
3	11	5003	2	14
4	12	2001	1	6
5	12	5002	1	8.50
6	13	2001	2	12
7	13	3001	1	7.50
8	14	4002	1	11
9	15	4003	1	8
10	16	3002	3	19.50
11	17	2002	1	10
12	18	5003	2	14
13	18	2002	2	20
14	19	1001	3	37.50
15	20	3001	1	7.50
16	20	3002	1	6.50
17	20	4002	1	11
18	21	5002	2	17

Business Decisions

Asian Taste is delighted by the implementation of their database. Now, they want you to answer the following questions to generate insights to help their business.

Customers

In our database, how many customers do we have?

```
SELECT COUNT(DISTINCT(CONCAT(customer_fname, ' ', customer_lname)))

FROM customer
```

	count bigint
1	10

Who is our most profitable customer and how much did he spend?

```
*Join order_item, orders, customer tables

SELECT customer_fname, customer_lname, SUM(order_total) --STEP 3) To find the total amount spent by a customer

FROM

(SELECT sq1.order_id,order_total, customer_id --STEP 2) Subquery 2 to find which customer made the order

FROM

(SELECT order_id, SUM(order_item_total) AS order_total --STEP 1) Subquery 1 to find the total price of an order

FROM order_item

GROUP BY order_id) AS sq1

LEFT JOIN orders ON orders.order_id=sq1.order_id) AS sq2

LEFT JOIN customer ON customer.customer_id=sq2.customer_id

GROUP BY customer_fname, customer_lname

ORDER BY SUM(order_total) DESC

LIMIT 1
```

	customer_fname character varying (30)	customer_lname character varying (30)	sum numeric
1	Marshall	Salazar	93.00

Which customer ordered the most and how many orders did he made?

```
SELECT customer_lname, customer_fname, COUNT(order_id)
FROM orders
LEFT JOIN customer ON orders.customer_id = customer.customer_id
GROUP BY customer_lname, customer_fname
ORDER BY COUNT(order_id) DESC
LIMIT 1
```

	customer_lname character varying (30)	customer_fname character varying (30)	count bigint
1	Bryan	Kaleen	4

What was the total amount spent by the customer who ordered the most?

<u>Step 1. Find the order_id of the customer who ordered the most</u>

```
SELECT customer_fname, customer_lname, orders.order_id
FROM orders
LEFT JOIN customer ON customer.customer_id=orders.customer_id
WHERE customer_fname='Kaleen' AND customer_lname='Bryan'
```

	customer_fname character varying (30)	customer_lname character varying (30)	order_id smallint
1	Kaleen	Bryan	10
2	Kaleen	Bryan	11
3	Kaleen	Bryan	12
4	Kaleen	Bryan	23

<u>Step 2. Sum up all those orders to find the total amount spent</u>

```
SELECT SUM(individual_order_total)
FROM
(SELECT order_id, SUM(order_item_total) as individual_order_total
FROM order_item
WHERE order_id IN (10,11,12,23)
GROUP BY order_id) AS sq1
```

	sum numeric
1	76.50

Item and Menu

Which item was ordered the most (biggest quantity sold)?

```
SELECT item_name, SUM(order_item_quantity)
FROM order_item
LEFT JOIN item ON item.item_id=order_item.item_id
GROUP BY item_name
ORDER BY SUM(order_item_quantity) DESC
LIMIT 1
```

	item_name character varying (30)	sum bigint
1	Onigiri	7

Which item generated us the most revenue?

```
SELECT item_name, SUM(order_item_total)
FROM order_item
LEFT JOIN item ON item.item_id=order_item.item_id
GROUP BY item_name
Order by SUM(order_item_total) DESC
LIMIT 1
```

	item_name character varying (30)	sum numeric
1	Bulgogi	52.50

Which menu had the most orders made?

```
SELECT menu_type, SUM(order_item_quantity) AS Total_quantity_per_menu_type
FROM order_item
LEFT JOIN item ON item.item_id=order_item.item_id
LEFT JOIN Menu ON item.menu_id=menu.menu_id
GROUP BY menu_type
ORDER BY Total_quantity_per_menu_type DESC
LIMIT 1
```

	menu_type character varying (30)	total_quantity_per_menu_type bigint
1	Japanese	10

Which menu generated us the most revenue?

```
SELECT menu_type, SUM(order_item_total) AS Total_sum_per_menu_type
FROM order_item
LEFT JOIN item ON item.item_id=order_item.item_id
LEFT JOIN Menu ON item.menu_id=menu.menu_id
GROUP BY menu_type
ORDER BY Total_sum_per_menu_type DESC
LIMIT 1
```

	menu_type character varying (30)	total_sum_per_menu_type numeric
1	Korean	102.50

Conclusion

Customer

The customer who spent the most is Marshall Salazar and the customer who ordered the most is Kaleen Bryan. Asian Taste should consider developing a customer retention strategy to make sure that they return to the restaurant. The strategy can be offering them a reward program.

Item and Menu

Our most popular item is “onigiri” and our most profitable item is “bulgogi”. Asian Taste should expand the type of “onigiri” and “bulgogi” by adding additional flavors. Our most ordered menu is Japanese, and our most profitable menu is Korean. Asian Taste should consider adding more Japanese and Korean dishes to their menu.