Relational Database Project - Restaurant

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A Database System for a Restaurant Chain

Description and Requirements

❖ The database created for the purpose of this project is a small restaurant chain with three branches.
❖ We started the process by first identifying our database requirements.
  ➢ What a restaurant chain would need to store in a database, such as staff and customer information, item inventory, and sales records.

❖ We created a series of tables/relational schema that capture aspects of a restaurant chain, from the staff to supplies, to the inventory, etc. We then added the necessary attributes to each table, identifying any primary or foreign keys.

❖ We created the database using Oracle + SQL Developer

Relational Database Instance

Staff

Fname	Minital	Lname	SSN	EmpNum	Salary	Birthday	Position	location	Date of employment
Mary	D	Ann	2238	5681	800.00	1987-07-12	Manager	Dearborn	2018-05-02
Loid	F	Forger	3367	1298	900.00	1982-04-21	Manager	Ann Arbor	2015-02-15
Noe	V	Archiviste	4425	7032	1000.00	1990-06-05	Manager	Detroit	2017-09-01
Elena	K	Lee	2356	4466	500.00	1995-04-11	Waiter	Dearborn	2019-08-18
Felix	Y	Pace	1122	0325	900.00	2000-09-15	Cook	Ann Arbor	2020-03-15
Sophie	H	Parker	7887	8976	300.00	1992-05-01	Waiter	Detroit	2022-02-13

Waiters

EmpNum	location	TableNum
1920	Ann Arbor	12
1988	Ann Arbor	6
1972	Ann Arbor	11
1928	Ann Arbor	8
4466	Dearborn	1
1092	Dearborn	3
3982	Dearborn	5
8976	Detroit	4
1997	Detroit	7
1993	Detroit	8

Inventory

Name	count_Detroit	count_Dearborn	count_AnnArbor	itemID
water	788	663	500	221
chicken	304	203	506	301
tofu	100	293	99	203
heavy cream	200	202	170	100
parmesan cheese	86	56	69	109
beef	203	405	304	129
butter	404	444	450	293
soda	2040	1299	1596	300
rice	50	39	55	299
pita bread	505	300	204	315
pickles	90	79	59	506
onions	405	304	292	455
oil	302	209	399	555
garlic	201	306	292	111
pasta	1034	1029	1849	309
lemons	220	394	201	330

Orders

OrderID	OrderDate	CustomerID	Status	Total
8789	06-22-2022	34	Complete	0.99
9876	03-04-2022	23	In progress	92.02
0987	06-04-2022	12	Complete	30.00
2345	03-21-2022	45	canceled	12.57
9087	01-04-2022	67	In progress	180.30
7654	12-03-2022	89	Complete	25.00
3456	06-11-2022	33	Complete	25.55
0123	03-04-2022	55	In progress	7.99
7800	12-05-2022	77	Complete	100.00
5678	11-03-2022	98	In progress	36.90

Customer

CustomerID	Fname	Minit	Lname	R_Num #	orderID
34	John	J	Smith	321	8789
23	bang	C	han	123	9876
12	mika	S	end	456	0987
45	Alice	B	johnson	789	2345
67	David	L	Kim	555	9087
89	Emily	K	Lee	222	7654
33	Jack	T	Chen	445	3456
55	Finnick	H	Odair	667	0123
77	Kaz	S	Brekker	688	7800
98	Inej	J	Ghafa	336	5678

Manager

Emp#	location
5681	Dearborn
1298	Ann Arbor
7032	Detroit

Menu

ItemID	Name	Vegan	price	Inven_status
221	water	yes	0.99	In-stock
849	Alfredo	no	12.99	out-of-stock
758	Tofu stir fry	yes	12.99	in-stock
853	Shawarma	no	8.99	In-stock
563	Butter chicken	no	13.99	In-Stock
213	Soda	yes	2.99	In-Stock

Daily_sales

Rest_Num	Location	saleDate	daily_total
343	Ann Arbor	2022-06-22	5600.00
765	Dearborn	2022-06-22	4000.00
082	Detroit	2022-06-22	3800.00

Locations

location	R_phone	RestaurantNum
Ann Arbor	(734) 753-1920	343
Dearborn	(313) 504-2202	765
Detroit	(313) 920-4039	082

Reservation

Reservation Num	partySize	Time	location	reserve_date	rest_table
321	1	1:00 pm	Ann Arbor	2022-06-22	12
123	8	3:00pm	Ann Arbor	2022-04-03	6
456	1	2:00pm	Ann Arbor	2022-06-04	11
789	4	7:00pm	Ann Arbor	2022-03-21	8
555	5	3:00pm	Dearborn	2022-04-01	1
222	2	5:30pm	Dearborn	2022-04-12	3
445	1	6:00pm	Dearborn	2022-04-06	5
667	7	8:45pm	Detroit	2022-04-03	4
688	8	3:00pm	Detroit	2022-05-12	7
336	4	7:00pm	Detroit	2022-03-11	8

Rest_Tables

Num	Availability	location
12	Not available	Ann Arbor
6	available	Ann Arbor
11	Not available	Ann Arbor
8	available	Ann Arbor
1	Not available	Dearborn
3	Not available	Dearborn
5	Not available	Dearborn
4	Not available	Detroit
7	Not available	Detroit
9	Not available	Detroit
13	Available	Detroit

Phone

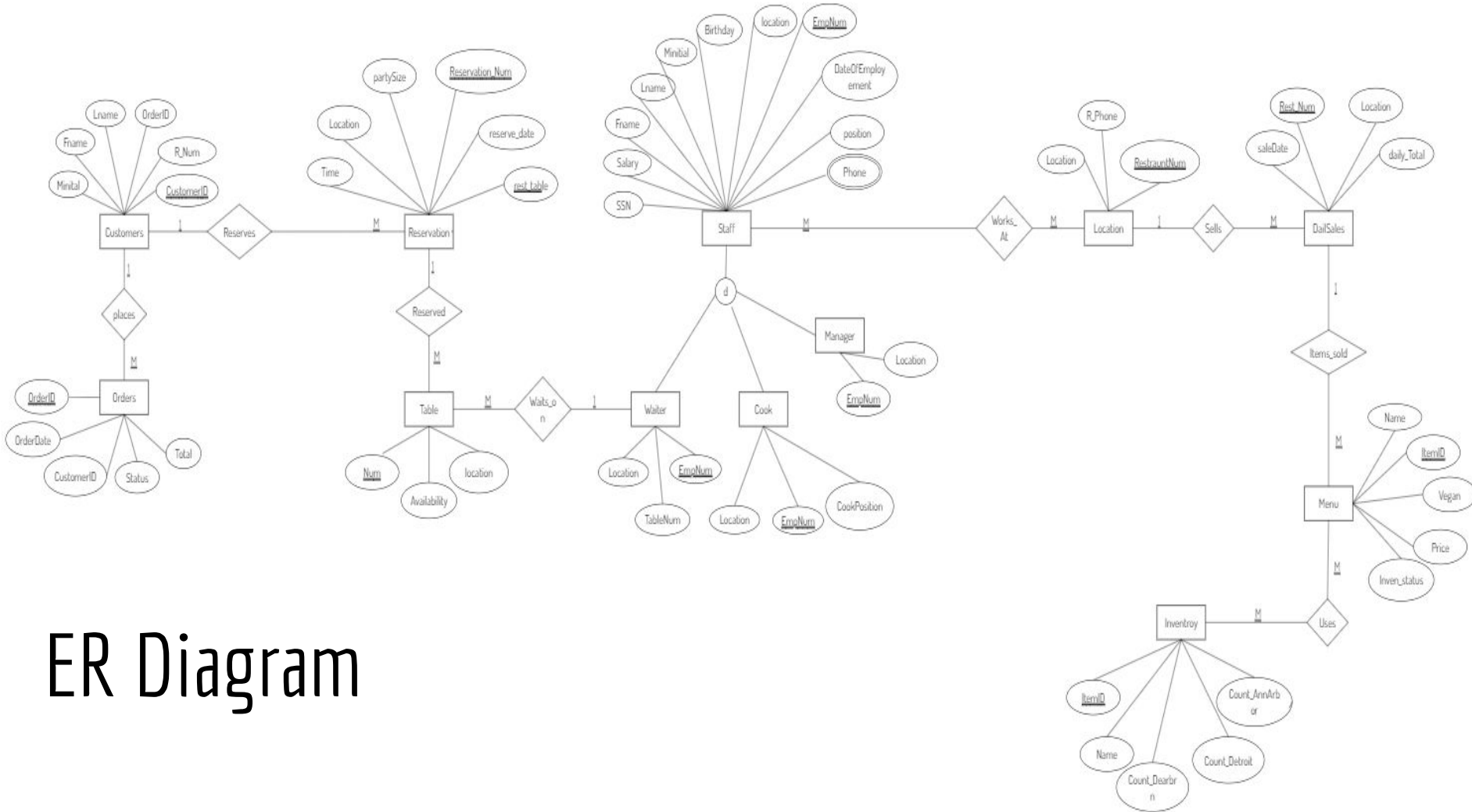| emp#	PhoneNum
5681	313-206-1645
1298	734-228-0258
7032	248-228-1952
4466	313-336-4179
0325	734-249-6853
8976	248-232-9978
1111	734-260-1537

Relational Database Schema

- Customer(<u>customerID,</u> Fname, MInitial, LName,R_Num,OrderID)
- Staff(Fname, MInitial, LName,SSN,<u>EmpNum</u>,Salary, Birthdate, Position, Location, Dateofemployment)
    - Waiters(<u>EmpNum</u>,Location, TableNum)
    - Cooks(EmpNum, location, CookPosition)
    - Manager (<u>EmpNum</u>, Location)
- Inventory(Name, Count_Dearborn, Count_Dearborn, Count_AnnArbor, <u>ItemI</u>D)
- Tables(<u>Num</u>, Availability, location)
- Locations(location, R_phone, <u>RestaurantNum</u>)
- Reservations(<u>RestaurantNum</u>, PartySize, Time, Location, reserve_date, rest_table)
- Menu(ItemId, Name, Vegan, Price, Inven_Status)
- Daily_sales(<u>Rest_</u>Num, location, saleDate, daily_total)
- Orders(<u>OrderID</u>, OrderDate, CustomerID, Status, Total)
- phone(<u>EmpNum</u>, PhoneNum)

Relational Database Schema

- Customer RESERVES Reservation (1:M)
- Staff WORKS_AT Location (M:M)
- Menu USES Inventory (M:M)
- Waiter WAITS_ON Table (1:M)
- Location SELLS DailySales (1:M)
- Customer PLACES Orders (1:M)
- Reservation RESERVED Table (1:M)
- Daily_Sales ITEMS_SOLD Menu (1:M)

CustomerID	Fname	Minit	Lname	R_Num #	orderID
34	John	J	Smith	321	8789
23	bang	C	han	123	9876
12	mika	S	end	456	0987
45	Alice	B	johnson	789	2345
67	David	L	Kim	555	9087
89	Emily	K	Lee	222	7654
33	Jack	T	Chen	445	3456
55	Finnick	H	Odair	667	0123
77	Kaz	S	Brekker	688	7800
98	Inej	J	Ghafa	336	5678

ER Diagram

SQL Statements and Results

1. Fetching the first and last names of staff members at the Ann Arbor location.
    SELECT Fname, Lname
    FROM Staff
    WHERE location = 'Ann Arbor'

FNAME	LNAME
Felix	Pace
Howl	Pret
William	Moriarty
Yuta	Okkotsu
Gege	Akutami
Mustafa	Ali
Yuqi	Idle

SQL Statements and Results

2. Retrieve the orderId, order data, and total for the customer Kaz Brekker.

     SELECT Orders.OrderID, OrderDate, Orders.Total
     FROM Orders, Customer
     WHERE Customer.OrderID = Orders.OrderID AND Customer.Fname = 'Kaz' AND Customer.Lname = 'Brekker'

```
ORDERID ORDERDATE      TOTAL
------- ---------- ----------
   7800 12-05-2022        100
```

SQL Statements and Results

3. For each customer, retrieve the party size, table, and location.

SELECT partySize, rest_table, location
FROM Customer, Reservation
WHERE Customer.R_Num = Reservation.Reservation_Num
GROUP BY partySize, rest_table, location

```
PARTYSIZE REST_TABLE LOCATION
--------- ---------- -------------
        8          7 Detroit
        8          6 Ann Arbor
        4          8 Detroit
        1         11 Ann Arbor
        2          3 Dearborn
        1         12 Ann Arbor
        1          5 Dearborn
        5          1 Dearborn
        7          4 Detroit
        4          8 Ann Arbor
```

SQL Statements and Results

4. Insert a new menu item <154, 'Cheese cake, 'yes', 4.99, 'In-Stock'>

    INSERT INTO Menu VALUES(154, 'Cheese cake', 'yes', 4.99, 'In-Stock');

	ITEMID	NAME	VEGAN	PRICE	INVEN_STATUS
1	154	Cheese cake	yes	5	In-Stock
2	221	Water	yes	1	In-Stock
3	849	Alfredo	no	13	Out-Of-Stock
4	758	Tofu Stir Fry	yes	13	In-Stock
5	853	Shawarma	no	9	In-Stock
6	213	Soda	yes	3	In-Stock
7	563	Butter Chicken	no	14	In-Stock