



Database

2024 - second semester

	Name	ID	Role Participated in	Sign
1	Hassan Mohammed Alzourei		(Leader)	

Project Milestone#2

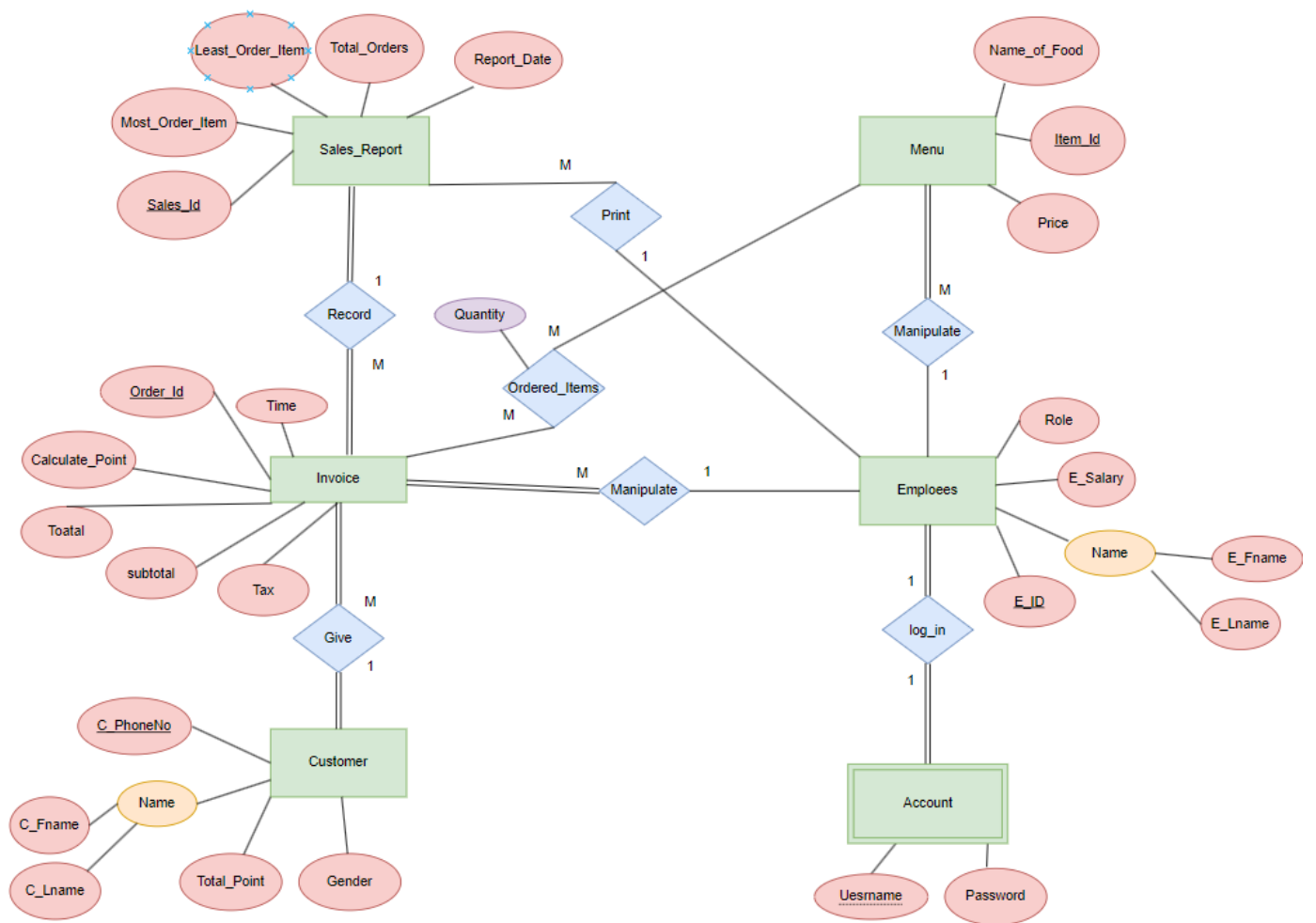
Description

- The restaurant is divided into two parts: one side is managed by the staff taking orders and the other is managed by the manager who manages the staff, the menu content, and can make salary reports.
- The cashier employee takes customer orders and information to complete the order through the system and registers customers who want to earn points to make discounts after a while of orders.
- The customer information will assist us in sending promos and points to them.
- The invoice will have information about the order like the date of order, how many items have been ordered, and information on the customer with points they earned, and so on
- The manager can access sales reports which can also know the most order items, the least order items, and the total orders. The manager can also modify the menu, and it is possible to add items and set a price for each item, or it is possible to delete items.

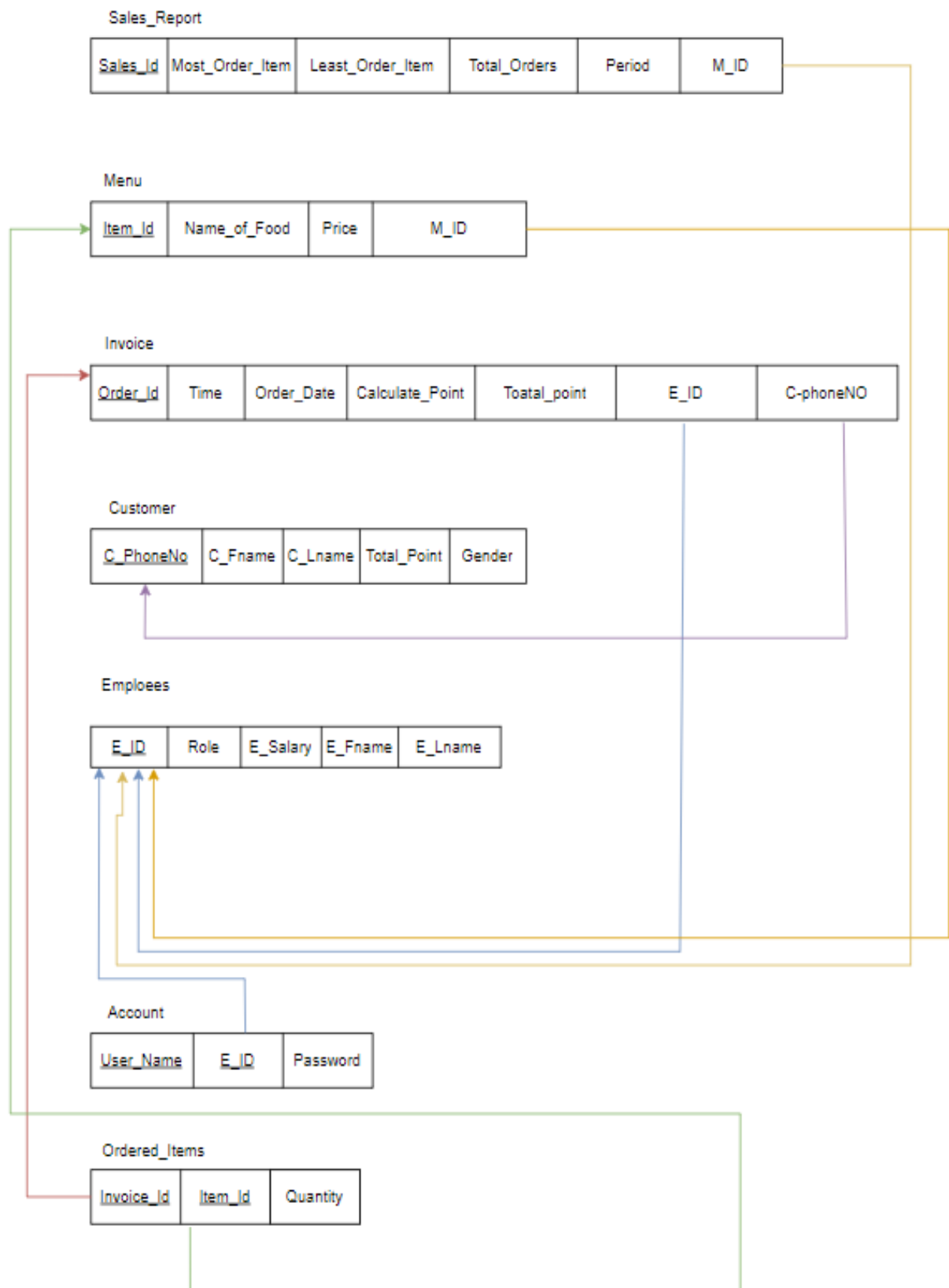
System Constraints:

- Each employee can have one account
- Only one Employee can be the manager
- Manager can print multiple Sales reports
- Employee can create Manipulate Invoices
- Customer phone number is a primary key
- Each menu item has a limit

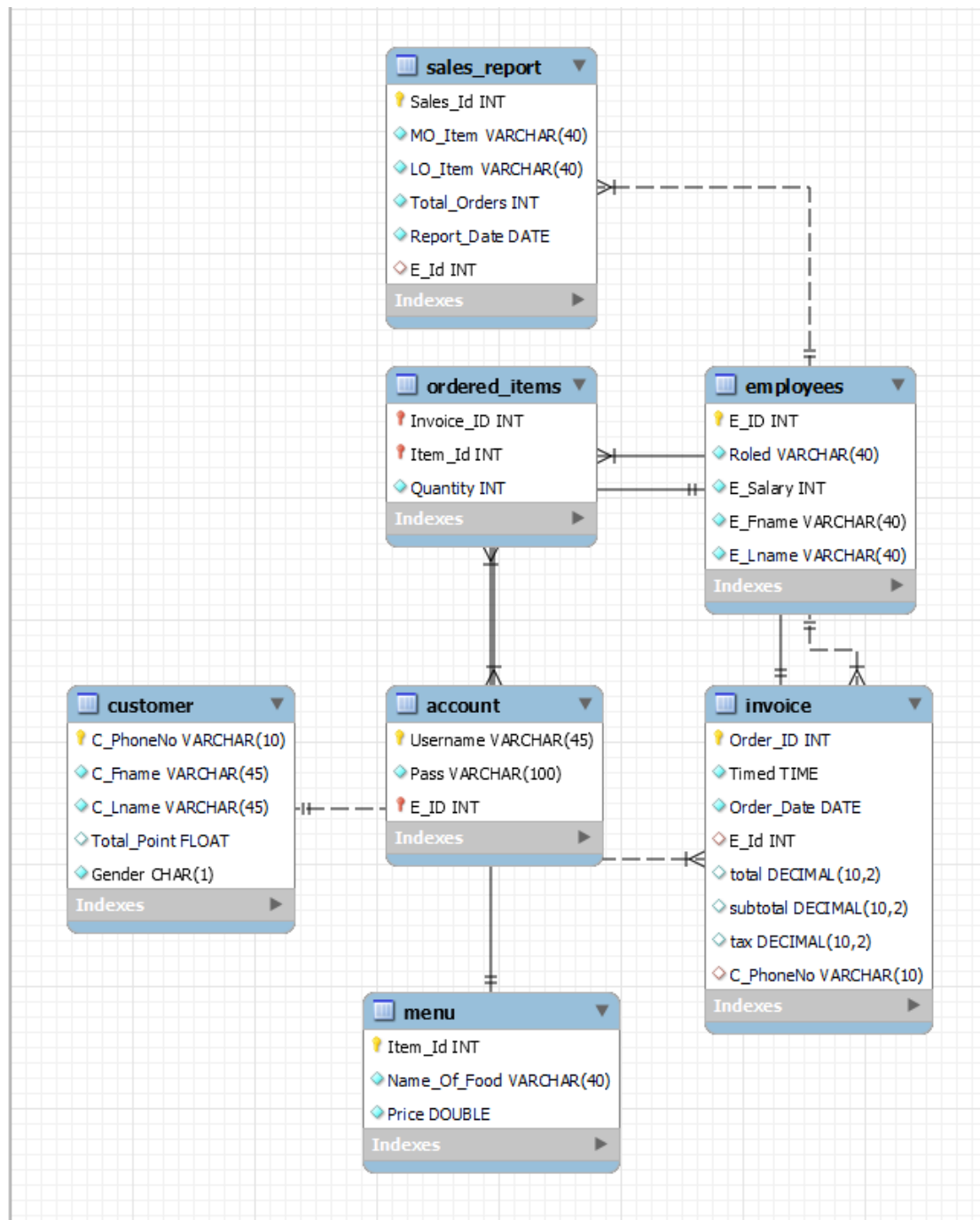
ER Diagram



Relation Schema



Relational Schema Mapping



Employee

E_ID	Role	E_Salary	E_Fname	E_Lname
1000	Manager	12000	Hassan	Al-Zourei
1001	Cashier	7000	Abdulrahman	Al-Mejna
1002	Cashier	7500	Abdullah	Al-Battat
1003	Cashier	7250	Ahmed	Al-Shaikh
1004	Cashier	6500	Ali	Al-Khars
1005	Cashier	6900	Baqer	Al-Haddad
1006	Cashier	2500	Hassan	Mohsen
1007	Cashier	7500	Hassan	zayer
1008	Cashier	5000	Ali	Hassan
1009	Cashier	5000	Ali	mohammed
1010	Cashier	5555	aj	def
1012	Cashier	85000	Hassan	zoury
1013	Cashier	85000	Ali	zoury
1014	Cashier	1555	mod	mod

Account

Username	Pass	E_ID
Abdullah	am12345678	1002
Abdulrahman	DH99!@#123	1001
Ahmed	123456aa	1003
Ali	qwerty123	1004
AliHassan12	AliHassan12	1009
Baqer	abc123123	1005
Hassan	Hassan123456	1000
HMohsen123	Password123	1006
mod12345	mod12345	1014
zayer12345	zayer12345	1007

Customer

C_PhoneNo	C_Fname	C_Lname	Total_Point	Gender
0501232318	Ahmed	Yousef	138	M
0502144737	Abdulrhman	Mohsen	437	M
0512345678	Mohammed	Ahmed	2151	M
0545678901	Noor	Mohammed	180	F
0546420000	Ali	Hassan	1392.6	M
0546885516	Abdullah	Mohammed	120	M
0555926390	Mohammed	Hamad	200	M
0556789012	Yasmine	Khalid	170	F
0567890123	Omar	Saeed	220	M
0578901234	Layla	Hassan	190	F
0589012345	Rida	Nasser	210	M
0590123456	Sara	Amin	230	F

Invoice

Order_ID	Timed	Order_Date	E_Id	total	subtotal	tax	C_PhoneNo
1	17:30:30	2024-05-11	1005	13.80	12.00	1.80	NULL
2	17:36:01	2024-05-11	1005	29.90	26.00	3.90	0502144737
3	17:36:27	2024-05-11	1005	27.60	24.00	3.60	NULL
4	17:40:20	2024-05-11	1004	200.10	174.00	26.10	0512345678
5	23:42:20	2024-05-11	1004	211.60	184.00	27.60	0546420000
6	23:44:10	2024-05-11	1004	221.38	192.50	28.88	0546420000
7	23:51:13	2024-05-11	1009	75.90	66.00	9.90	NULL
8	00:07:10	2024-05-12	1009	346.15	301.00	45.15	0546420000
9	00:07:33	2024-05-12	1009	62.10	54.00	8.10	0546420000
10	00:14:35	2024-05-12	1009	200.10	174.00	26.10	0546420000
11	11:13:36	2024-05-12	1007	82.80	72.00	10.80	NULL
12	11:19:18	2024-05-12	1007	80.50	70.00	10.50	NULL

Sales_Report

Sales_Id	MO_Item	LO_Item	Total_Orders	Report_Date	E_Id
609874619	Chicken Burger	Green Tea	95	2024-03-13	1000
609875293	Chocolate Cake	Chicken Noodles	95	2024-04-01	1000
609875778	Chicken Burger	Green Tea	109	2024-03-07	1000
609876168	Chicken Burger	Green Tea	104	2024-04-01	1000
609876302	Chicken Burger	Green Tea	97	2024-03-22	1000
609876386	Chicken Burger	Rainbow	91	2024-04-01	1000
609877557	Chicken Burger	Green Tea	63	2024-04-02	1000
609878179	Chocolate Cake	Chicken Noodles	114	2024-03-25	1000
609878283	Chocolate Cake	Green Tea	86	2024-04-01	1000
609878571	Chicken Burger	Rainbow	106	2024-04-02	1000
609878572	Chicken Noodles	7up	3	2024-05-11	1000
609878573	Chicken Noodles	7up	4	2024-05-11	1000
609878574	Vegetarian Pizza	7up	7	2024-05-12	1000
609878575	Vegetarian Pizza	Chicken Burger	3	2024-05-12	1000

Menu

Item_Id	Name_Of_Food	Price
1	Chicken Noodles	25
2	Chicken Burger	18
3	Vegetarian Pizza	15
4	Chocolate Cake	50
5	Fruit Cake	60
6	Strawberry Cake	55
7	Rainbow	35
8	Chocolate Coffee	18
9	Cappuccino Coffee	17
10	Cold Coffee	13
11	Green Tea	6
12	Orange Juice	8
13	Coke	4
14	7up	2
15	Water	0.5

Ordered_items

Invoice_ID	Item_Id	Quantity
1	14	3
2	10	2
3	12	3
5	1	1
6	1	3
7	2	2
8	2	2
9	2	3
10	1	2
11	2	2
12	8	3

SQL Query Statements

SQL Query Statements (5 marks)

Write all SQL Queries required in your system to achieve all requirements (screenshot the result for each query)

Insert

- ```
-- Insert:
```
- `insert into Menu values (16, 'Pasta', 32);`
  - `select * from Menu;`

|   | Item_Id | Name_Of_Food      | Price |
|---|---------|-------------------|-------|
| ▶ | 1       | Chicken Noodles   | 25    |
|   | 2       | Chicken Burger    | 18    |
|   | 3       | Vegetarian Pizza  | 15    |
|   | 4       | Chocolate Cake    | 50    |
|   | 5       | Fruit Cake        | 60    |
|   | 6       | Strawberry Cake   | 55    |
|   | 7       | Rainbow           | 35    |
|   | 8       | Chocolate Coffee  | 18    |
|   | 9       | Cappuccino Coffee | 17    |
|   | 10      | Cold Coffee       | 13    |
|   | 11      | Green Tea         | 6     |
|   | 12      | Orange Juice      | 8     |
|   | 13      | Coke              | 4     |
|   | 14      | 7up               | 2     |
|   | 15      | Water             | 0.5   |
|   | 16      | Pasta             | 32    |
| * | NULL    | NULL              | NULL  |

## Delete

- ```
-- Delete:
```
- `delete from menu`
`where item_id = 16;`
 - `select * from Menu;`

	Item_Id	Name_Of_Food	Price
▶	1	Chicken Noodles	25
	2	Chicken Burger	18
	3	Vegetarian Pizza	15
	4	Chocolate Cake	50
	5	Fruit Cake	60
	6	Strawberry Cake	55
	7	Rainbow	35
	8	Chocolate Coffee	18
	9	Cappuccino Coffee	17
	10	Cold Coffee	13
	11	Green Tea	6
	12	Orange Juice	8
	13	Coke	4
	14	7up	2
	15	Water	0.5
*	NULL	NULL	NULL

Update

- ```
-- Update:
```
- `update menu`  
`set Price =50`  
`where Item_Id = 6;`
  - `select * from Menu;`

|   | Item_Id | Name_Of_Food      | Price |
|---|---------|-------------------|-------|
| ▶ | 1       | Chicken Noodles   | 25    |
|   | 2       | Chicken Burger    | 18    |
|   | 3       | Vegetarian Pizza  | 15    |
|   | 4       | Chocolate Cake    | 50    |
|   | 5       | Fruit Cake        | 60    |
|   | 6       | Strawberry Cake   | 50    |
|   | 7       | Rainbow           | 35    |
|   | 8       | Chocolate Coffee  | 18    |
|   | 9       | Cappuccino Coffee | 17    |
|   | 10      | Cold Coffee       | 13    |
|   | 11      | Green Tea         | 6     |
|   | 12      | Orange Juice      | 8     |
|   | 13      | Coke              | 4     |
|   | 14      | 7up               | 2     |
|   | 15      | Water             | 0.5   |
| * | NULL    | NULL              | NULL  |

## Like and Not Like

```

306 • select Name_Of_Food as FoodWithAAtEnd
307 from Menu
308 where Name_Of_Food like '%a';

```

|   | FoodWithAAtEnd   |
|---|------------------|
| ▶ | Vegetarian Pizza |
|   | Green Tea        |

```

312 • select Name_Of_Food as AllWithoutQ
313 from Menu
314 where Name_Of_Food not like '%q%';
315

```

|   | AllWithoutQ       |
|---|-------------------|
| ▶ | Chicken Noodles   |
|   | Chicken Burger    |
|   | Vegetarian Pizza  |
|   | Chocolate Cake    |
|   | Fruit Cake        |
|   | Strawberry Cake   |
|   | Rainbow           |
|   | Chocolate Coffee  |
|   | Cappuccino Coffee |
|   | Cold Coffee       |
|   | Green Tea         |
|   | Orange Juice      |
|   | Coke              |
|   | 7up               |
|   | Water             |

## Between

- `select Price ,Name_Of_Food as high_cost  
from Menu  
where Price Between 40 and 100;`

|   | Price | high_cost       |
|---|-------|-----------------|
| ▶ | 50    | Chocolate Cake  |
|   | 60    | Fruit Cake      |
|   | 50    | Strawberry Cake |

## In

- `select*  
from customer  
where Total_Point in (100,200,300,400,500);`

|   | C_PhoneNo  | C_Fname  | C_Lname | Total_Point | Gender |
|---|------------|----------|---------|-------------|--------|
| ▶ | 0555926390 | Mohammed | Hamad   | 200         | M      |
| * | NULL       | NULL     | NULL    | NULL        | NULL   |

## Order by

- ```

318 • select Menu.Name_Of_Food , Menu.price as LowToHigh
319      from Menu
320      order by Price asc ;

```

	Name_Of_Food	LowToHigh
▶	Water	0.5
	7up	2
	Coke	4
	Green Tea	6
	Orange Juice	8
	Cold Coffee	13
	Vegetarian Pizza	15
	Cappuccino Coffee	17
	Chicken Burger	18
	Chocolate Coffee	18
	Chicken Noodles	25
	Rainbow	35
	Chocolate Cake	50
	Strawberry Cake	50
	Fruit Cake	60

Is null

```

380 • select C_PhoneNo,C_Fname, C_Lname
381      from customer
382      where C_Fname is null;

```

	C_PhoneNo	C_Fname	C_Lname
▶	0555926390	NULL	Hamad
	0589012345	NULL	Nasser
*	NULL	NULL	NULL

Intersect

NOTE// MySQL does not support Intersect directly .

```

• SELECT
    CONCAT(SR1.MO_Item, ' - ', SR2.LO_Item) AS Best_State,
    SUM(SR1.Total_Orders + SR2.Total_Orders) AS Total_Sales
FROM
    Sales_Report AS SR1
JOIN
    Sales_Report AS SR2 ON SR1.MO_Item <> SR2.MO_Item AND SR1.LO_Item <> SR2.LO_Item
GROUP BY
    Best_State
ORDER BY
    Total_Sales DESC
LIMIT 3;

```

	Best_State	Total_Sales
▶	Chicken Burger - Chicken Noodles	2793
	Chocolate Cake - Green Tea	1981
	Chocolate Cake - Rainbow	1181

Except

NOTE// MySQL does not support Except directly .

```
-- NOTE// In MySQL, the Except keyword is not directly supported :
SELECT
    CONCAT(SR1.MO_Item, ' - ', SR1.LO_Item) AS Best_State,
    SUM(SR1.Total_Orders) AS Total_Sales
FROM
    Sales_Report AS SR1
LEFT JOIN
    Sales_Report AS SR2 ON SR1.MO_Item = SR2.MO_Item AND SR1.LO_Item = SR2.LO_Item AND SR1.Sales_Id != SR2.Sales_Id
WHERE
    SR2.Sales_Id IS NULL
GROUP BY
    Best_State
ORDER BY
    Total_Sales DESC
LIMIT 1;
```

	Best_State	Total_Sales
►	Chocolate Cake - Green Tea	86

Union

- ```
-- Union:
• select C_PhoneNo ,Total_Point
 from customer
 union
 select E_ID, Roled
 from employees ;
```

|   | C_PhoneNo  | Total_Point        |
|---|------------|--------------------|
| ► | 0501232318 | 138                |
|   | 0502144737 | 437                |
|   | 0512345678 | 2151               |
|   | 0545678901 | 180                |
|   | 0546420000 | 1392.5999755859375 |
|   | 0546885516 | 120                |
|   | 0555926390 | 200                |
|   | 0556789012 | 170                |
|   | 0567890123 | 220                |
|   | 0578901234 | 190                |
|   | 0589012345 | 210                |
|   | 0590123456 | 230                |
|   | 1000       | Manager            |
|   | 1001       | Cashier            |
|   | 1002       | Cashier            |
|   | 1003       | Cashier            |
|   | 1004       | Cashier            |
|   | 1005       | Cashier            |
|   | 1006       | Cashier            |
|   | 1007       | Cashier            |
|   | 1008       | Cashier            |
|   | 1009       | Cashier            |
|   | 1010       | Cashier            |
|   | 1012       | Cashier            |
|   | 1013       | Cashier            |
|   | 1014       | Cashier            |

# Aggregate Functions

```
381 • SELECT MAX(price)
382 FROM Menu;
```

|   | MAX(price) |
|---|------------|
| ▶ | 60         |

```
384 • SELECT min(price)
385 FROM Menu;
```

|   | min(price) |
|---|------------|
| ▶ | 0.5        |

```
• select count(C_PhoneNo)
 from customer;
```

|   | count(c_Fname) |
|---|----------------|
| ▶ | 12             |

```
• select avg(e_salary)
 from employees;
```

|   | avg(e_salary) |
|---|---------------|
| ▶ | 17447.1429    |

```
360 • select sum(Price)
361 from Menu;
```

|   | sum(Price) |
|---|------------|
| ▶ | 321.5      |



# Aggregate Functions + Group By + Having

```
397 -- Aggregate Functions + Group By + Having:
398 • select c_Lname, c_Fname
399 from customer
400 group by c_Lname, c_Fname
401 having avg(Total_Point) < 200
402 order by c_Lname ;
```

|   | c_Lname  | c_Fname  |
|---|----------|----------|
| ▶ | Hassan   | Layla    |
|   | Khalid   | Yasmine  |
|   | Mohammed | Abdullah |
|   | Mohammed | Noor     |
|   | Yousef   | Ahmed    |

## NATURAL JOIN

```
• SELECT *
 FROM employees
 NATURAL JOIN invoice ;
```

|   | E_ID | Roled   | E_Salary | E_Fname | E_Lname   | Order_ID | Timed    | Order_Date | total  | subtotal | tax   | C_PhoneNo  |
|---|------|---------|----------|---------|-----------|----------|----------|------------|--------|----------|-------|------------|
| ▶ | 1005 | Cashier | 6900     | Baqer   | Al-Haddad | 1        | 17:30:30 | 2024-05-11 | 13.80  | 12.00    | 1.80  | NULL       |
|   | 1005 | Cashier | 6900     | Baqer   | Al-Haddad | 2        | 17:36:01 | 2024-05-11 | 29.90  | 26.00    | 3.90  | 0502144737 |
|   | 1005 | Cashier | 6900     | Baqer   | Al-Haddad | 3        | 17:36:27 | 2024-05-11 | 27.60  | 24.00    | 3.60  | NULL       |
|   | 1004 | Cashier | 6500     | Ali     | Al-Khars  | 4        | 17:40:20 | 2024-05-11 | 200.10 | 174.00   | 26.10 | 0512345678 |
|   | 1004 | Cashier | 6500     | Ali     | Al-Khars  | 5        | 23:42:20 | 2024-05-11 | 211.60 | 184.00   | 27.60 | 0546420000 |
|   | 1004 | Cashier | 6500     | Ali     | Al-Khars  | 6        | 23:44:10 | 2024-05-11 | 221.38 | 192.50   | 28.88 | 0546420000 |
|   | 1009 | Cashier | 5000     | Ali     | mohammed  | 7        | 23:51:13 | 2024-05-11 | 75.90  | 66.00    | 9.90  | NULL       |
|   | 1009 | Cashier | 5000     | Ali     | mohammed  | 8        | 00:07:10 | 2024-05-12 | 346.15 | 301.00   | 45.15 | 0546420000 |
|   | 1009 | Cashier | 5000     | Ali     | mohammed  | 9        | 00:07:33 | 2024-05-12 | 62.10  | 54.00    | 8.10  | 0546420000 |
|   | 1009 | Cashier | 5000     | Ali     | mohammed  | 10       | 00:14:35 | 2024-05-12 | 200.10 | 174.00   | 26.10 | 0546420000 |
|   | 1007 | Cashier | 7500     | Hassan  | zayer     | 11       | 11:13:36 | 2024-05-12 | 82.80  | 72.00    | 10.80 | NULL       |
|   | 1007 | Cashier | 7500     | Hassan  | zayer     | 12       | 11:19:18 | 2024-05-12 | 80.50  | 70.00    | 10.50 | NULL       |

## Full OUTER JOIN

NOTE// MySQL does not support Full OUTER JOIN directly .

```
-- FULL OUTER JOIN :
-- NOTE// MySQL does not support FULL OUTER JOIN directly .
-- However, you can simulate a full outer join using a combination of
-- LEFT OUTER JOIN, RIGHT OUTER JOIN, and UNION. Here's how you can achieve a full outer join in MySQL:
• SELECT *
 FROM invoice
 LEFT OUTER JOIN customer ON invoice.C_PhoneNo = customer.C_PhoneNo
 UNION
 SELECT *
 FROM invoice
 RIGHT OUTER JOIN customer ON invoice.C_PhoneNo = customer.C_PhoneNo
 WHERE invoice.C_PhoneNo IS NULL;
```

|   | Order_ID | Timed    | Order_Date | E_Id | total  | subtotal | tax   | C_PhoneNo  | C_PhoneNo  | C_Fname    | C_Lname  | Total_Point | Gender |
|---|----------|----------|------------|------|--------|----------|-------|------------|------------|------------|----------|-------------|--------|
| ▶ | 1        | 17:30:30 | 2024-05-11 | 1005 | 13.80  | 12.00    | 1.80  | NULL       | NULL       | NULL       | NULL     | NULL        | NULL   |
|   | 2        | 17:36:01 | 2024-05-11 | 1005 | 29.90  | 26.00    | 3.90  | 0502144737 | 0502144737 | Abdulrhman | Mohsen   | 437         | M      |
|   | 3        | 17:36:27 | 2024-05-11 | 1005 | 27.60  | 24.00    | 3.60  | NULL       | NULL       | NULL       | NULL     | NULL        | NULL   |
|   | 4        | 17:40:20 | 2024-05-11 | 1004 | 200.10 | 174.00   | 26.10 | 0512345678 | 0512345678 | Mohammed   | Ahmed    | 2151        | M      |
|   | 5        | 23:42:20 | 2024-05-11 | 1004 | 211.60 | 184.00   | 27.60 | 0546420000 | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
|   | 6        | 23:44:10 | 2024-05-11 | 1004 | 221.38 | 192.50   | 28.88 | 0546420000 | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
|   | 7        | 23:51:13 | 2024-05-11 | 1009 | 75.90  | 66.00    | 9.90  | NULL       | NULL       | NULL       | NULL     | NULL        | NULL   |
|   | 8        | 00:07:10 | 2024-05-12 | 1009 | 346.15 | 301.00   | 45.15 | 0546420000 | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
|   | 9        | 00:07:33 | 2024-05-12 | 1009 | 62.10  | 54.00    | 8.10  | 0546420000 | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
|   | 10       | 00:14:35 | 2024-05-12 | 1009 | 200.10 | 174.00   | 26.10 | 0546420000 | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
|   | 11       | 11:13:36 | 2024-05-12 | 1007 | 82.80  | 72.00    | 10.80 | NULL       | NULL       | NULL       | NULL     | NULL        | NULL   |
|   | 12       | 11:19:18 | 2024-05-12 | 1007 | 80.50  | 70.00    | 10.50 | NULL       | NULL       | NULL       | NULL     | NULL        | NULL   |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0501232318 | Ahmed      | Yousef   | 138         | M      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0545678901 | Noor       | Moham... | 180         | F      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0546885516 | Abdullah   | Moham... | 120         | M      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0555926390 | NULL       | Hamad    | 200         | M      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0556789012 | Yasmine    | Khalid   | 170         | F      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0567890123 | Omar       | Saeed    | 220         | M      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0578901234 | Layla      | Hassan   | 190         | F      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0589012345 | NULL       | Nasser   | 210         | M      |
|   | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       | 0590123456 | Sara       | Amin     | 230         | F      |

## Exist

```
329 • select * from invoice
330 where exists
331 (select* from employees where invoice.E_Id = employees.E_ID);
```

|   | Order_ID | Timed    | Order_Date | E_Id | total  | subtotal | tax   | C_PhoneNo  |
|---|----------|----------|------------|------|--------|----------|-------|------------|
| ▶ | 1        | 17:30:30 | 2024-05-11 | 1005 | 13.80  | 12.00    | 1.80  | NULL       |
|   | 2        | 17:36:01 | 2024-05-11 | 1005 | 29.90  | 26.00    | 3.90  | 0502144737 |
|   | 3        | 17:36:27 | 2024-05-11 | 1005 | 27.60  | 24.00    | 3.60  | NULL       |
|   | 4        | 17:40:20 | 2024-05-11 | 1004 | 200.10 | 174.00   | 26.10 | 0512345678 |
|   | 5        | 23:42:20 | 2024-05-11 | 1004 | 211.60 | 184.00   | 27.60 | 0546420000 |
|   | 6        | 23:44:10 | 2024-05-11 | 1004 | 221.38 | 192.50   | 28.88 | 0546420000 |
|   | 7        | 23:51:13 | 2024-05-11 | 1009 | 75.90  | 66.00    | 9.90  | NULL       |
|   | 8        | 00:07:10 | 2024-05-12 | 1009 | 346.15 | 301.00   | 45.15 | 0546420000 |
|   | 9        | 00:07:33 | 2024-05-12 | 1009 | 62.10  | 54.00    | 8.10  | 0546420000 |
|   | 10       | 00:14:35 | 2024-05-12 | 1009 | 200.10 | 174.00   | 26.10 | 0546420000 |
|   |          | 11:13:36 | 2024-05-12 | 1007 | 82.80  | 72.00    | 10.80 | NULL       |
|   |          | 11:19:18 | 2024-05-12 | 1007 | 80.50  | 70.00    | 10.50 | NULL       |
| • | NULL     | NULL     | NULL       | NULL | NULL   | NULL     | NULL  | NULL       |

## Nested Query

```
440 -- Nested Query:
441 • select E_ID,E_Salary,E_Fname,E_Lname
442 from employees
443 where E_Salary <
444 (select avg(E_Salary) from employees);
```

|   | E_ID | E_Salary | E_Fname     | E_Lname   |
|---|------|----------|-------------|-----------|
| ▶ | 1000 | 12000    | Hassan      | Al-Zourei |
|   | 1001 | 7000     | Abdulrahman | Al-Mejna  |
|   | 1002 | 7500     | Abdullah    | Al-Battat |
|   | 1003 | 7250     | Ahmed       | Al-Shaikh |
|   | 1004 | 6500     | Ali         | Al-Khars  |
|   | 1005 | 6900     | Baqer       | Al-Haddad |
|   | 1006 | 2500     | Hassan      | Mohsen    |
|   | 1007 | 7500     | Hassan      | zayer     |
|   | 1008 | 5000     | Ali         | Hassan    |
|   | 1009 | 5000     | Ali         | mohammed  |
|   | 1010 | 5555     | aj          | def       |
|   | 1014 | 1555     | mod         | mod       |
| * | NULL | NULL     | NULL        | NULL      |

## Trigger

```
-- Trigger :
delimiter //

• CREATE TRIGGER changepoint
 BEFORE UPDATE ON customer
 FOR EACH ROW
 BEGIN
 IF NEW.Total_Point BETWEEN 100 AND 120 THEN
 SET NEW.Total_Point = NEW.Total_Point + 20;
 END IF;
 END//

delimiter ;
```

|   | C_PhoneNo  | C_Fname    | C_Lname  | Total_Point | Gender |
|---|------------|------------|----------|-------------|--------|
|   | 0501232318 | Ahmed      | Yousef   | 138         | M      |
|   | 0502144737 | Abdulrhman | Mohsen   | 437         | M      |
|   | 0512345678 | Mohammed   | Ahmed    | 2151        | M      |
|   | 0545678901 | Noor       | Mohammed | 180         | F      |
|   | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
| ▶ | 0546885516 | Abdullah   | Mohammed | 90          | M      |
|   | 0555926390 | Mohammed   | Hamad    | 200         | M      |
|   | 0556789012 | Yasmine    | Khalid   | 170         | F      |
|   | 0567890123 | Omar       | Saeed    | 220         | M      |
|   | 0578901234 | Layla      | Hassan   | 190         | F      |
|   | 0589012345 | Rida       | Nasser   | 140         | M      |
|   | 0590123456 | Sara       | Amin     | 230         | F      |
| * | NULL       | NULL       | NULL     | NULL        | NULL   |

```
UPDATE `restaurant`.`customer` SET `Total_Point` = '100' WHERE (`C_PhoneNo` = '0546885516');
```

|   | C_PhoneNo  | C_Fname    | C_Lname  | Total_Point | Gender |
|---|------------|------------|----------|-------------|--------|
|   | 0501232318 | Ahmed      | Yousef   | 138         | M      |
|   | 0502144737 | Abdulrhman | Mohsen   | 437         | M      |
|   | 0512345678 | Mohammed   | Ahmed    | 2151        | M      |
|   | 0545678901 | Noor       | Mohammed | 180         | F      |
|   | 0546420000 | Ali        | Hassan   | 1392.6      | M      |
| ▶ | 0546885516 | Abdullah   | Mohammed | 120         | M      |
|   | 0555926390 | Mohammed   | Hamad    | 200         | M      |
|   | 0556789012 | Yasmine    | Khalid   | 170         | F      |
|   | 0567890123 | Omar       | Saeed    | 220         | M      |
|   | 0578901234 | Layla      | Hassan   | 190         | F      |
|   | 0589012345 | Rida       | Nasser   | 140         | M      |
|   | 0590123456 | Sara       | Amin     | 230         | F      |
| * | NULL       | NULL       | NULL     | NULL        | NULL   |

## View

```
353 • create view item_list as
354 select Name_Of_Food , price
355 from Menu ;
356 • SELECT * FROM restaurant project.item list;
```

▼ Views

- ▼ item\_list
  - ◆ Name\_Of\_Food
  - ◆ price

|   | Name_Of_Food      | price |
|---|-------------------|-------|
| ▶ | Chicken Noodles   | 25    |
|   | Chicken Burger    | 18    |
|   | Vegetarian Pizza  | 15    |
|   | Chocolate Cake    | 50    |
|   | Fruit Cake        | 60    |
|   | Strawberry Cake   | 50    |
|   | Rainbow           | 35    |
|   | Chocolate Coffee  | 18    |
|   | Cappuccino Coffee | 17    |
|   | Cold Coffee       | 13    |
|   | Green Tea         | 6     |
|   | Orange Juice      | 8     |
|   | Coke              | 4     |
|   | 7up               | 2     |
|   | Water             | 0.5   |

## CREATE PROCEDURE

```
-- CREATE PROCEDURE
```

```
DELIMITER //
```

```
CREATE PROCEDURE GetEmployeeOrders()
```

```
 BEGIN
```

```
 SELECT e.E_ID, e.E_Fname, e.E_Lname, i.Order_ID, i.Order_Date
```

```
 FROM Employees e
```




```
 INNER JOIN Invoice i ON e.E_ID = i.E_Id;
```

```
 END;
```

```
//
```

```
DELIMITER ;
```

- `CALL GetEmployeeOrders();`

 Stored Procedures  
 GetEmployeeOrders  
 Functions

|   | E_ID | E_Fname | E_Lname   | Order_ID | Order_Date |
|---|------|---------|-----------|----------|------------|
| ▶ | 1005 | Baqer   | Al-Haddad | 1        | 2024-05-11 |
|   | 1005 | Baqer   | Al-Haddad | 2        | 2024-05-11 |
|   | 1005 | Baqer   | Al-Haddad | 3        | 2024-05-11 |
|   | 1004 | Ali     | Al-Khars  | 4        | 2024-05-11 |
|   | 1004 | Ali     | Al-Khars  | 5        | 2024-05-11 |
|   | 1004 | Ali     | Al-Khars  | 6        | 2024-05-11 |
|   | 1009 | Ali     | mohammed  | 7        | 2024-05-11 |
|   | 1009 | Ali     | mohammed  | 8        | 2024-05-12 |
|   | 1009 | Ali     | mohammed  | 9        | 2024-05-12 |
|   | 1009 | Ali     | mohammed  | 10       | 2024-05-12 |
|   | 1007 | Hassan  | zayer     | 11       | 2024-05-12 |
|   | 1007 | Hassan  | zayer     | 12       | 2024-05-12 |

## Function

```

532 DELIMITER //
533
534 • CREATE FUNCTION salary_bonus(salary float ,total_orders INT)
535 RETURNS FLOAT deterministic
536 BEGIN
537 DECLARE total FLOAT;
538
539 IF total_orders > 99 THEN
540 SET total =salary * 0.05;
541 ELSE
542 SET total = 0;
543 END IF;
544
545 RETURN total ;
546 END;
547 //
548 DELIMITER ;

```

```

550 • SELECT salary_bonus(1000, 100);

```

|   |                            |
|---|----------------------------|
|   | salary_bonus(1000,<br>100) |
| ▶ | 50                         |