



# Mahidol University

## **Online Retailer System Database Report**

**By**

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**Present to**

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A Report Submitted in Partial Fulfillment of  
the Requirements for

ITCS 241 Database Management System

Faculty of Information and Communication Technology

Mahidol University

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## Relational Schema

We select 10 entities to change

Step 1: Relation R for regular entity

BRANCH	
PK	<u>BRANCH_ID</u>
	BRANCH_NAME BRANCH_PHONE

PRODUCT	
PK	<u>PRODUCT_ID</u>
	NAME_OF_PRODUCT MEMBER_POINT PRICE

CUSTOMER	
PK	<u>USER_ID</u>
	USERNAME TITLE FIRSTNAME LASTNAME PHONE EMAIL DATE_OF_BIRTH PICTURE_PROFILE MODIFIED_DATE

ORDER	
PK	<u>ORDER_ID</u>
	PAYMENT ORDER_NOTE TOTAL_UNIT DATE

INFORMATION_OF_PRODUCT	
PK	<u>INFORMATION_NO</u>
	HOW_TO_USE WARNING COMPONENT PRODUCER LOGO BARCODE

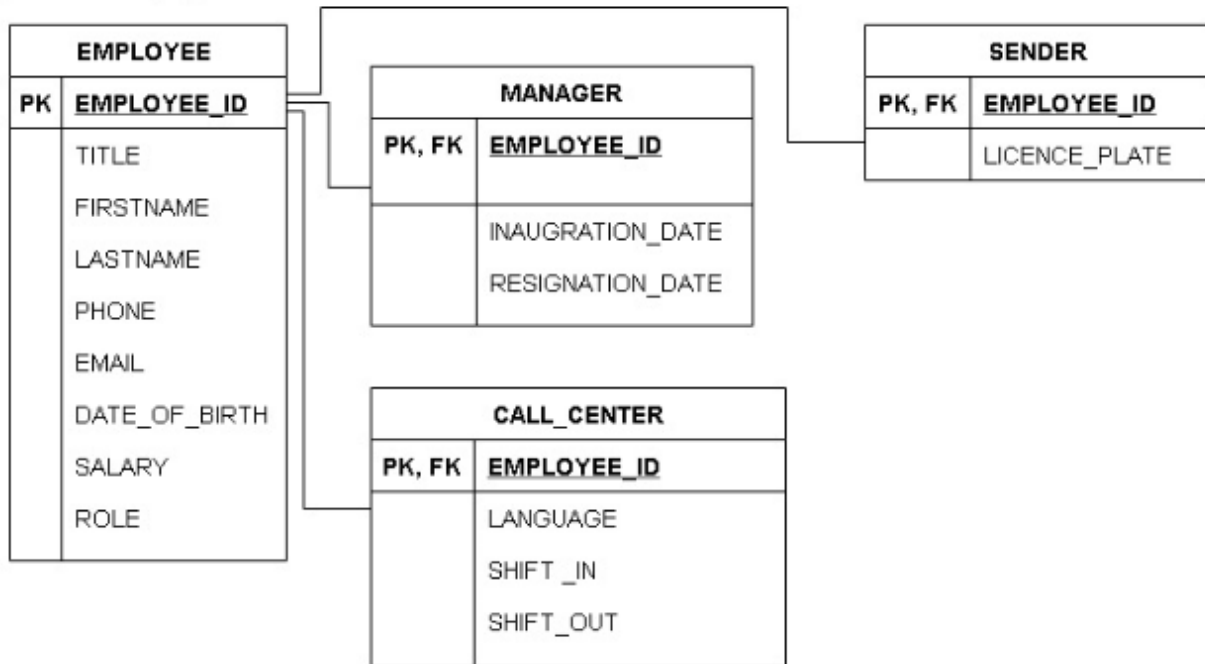
Step 2: Relation R for each weak entity

We do not have this step because we do not have a weak entity.

### Step 3: Transforming Specialization

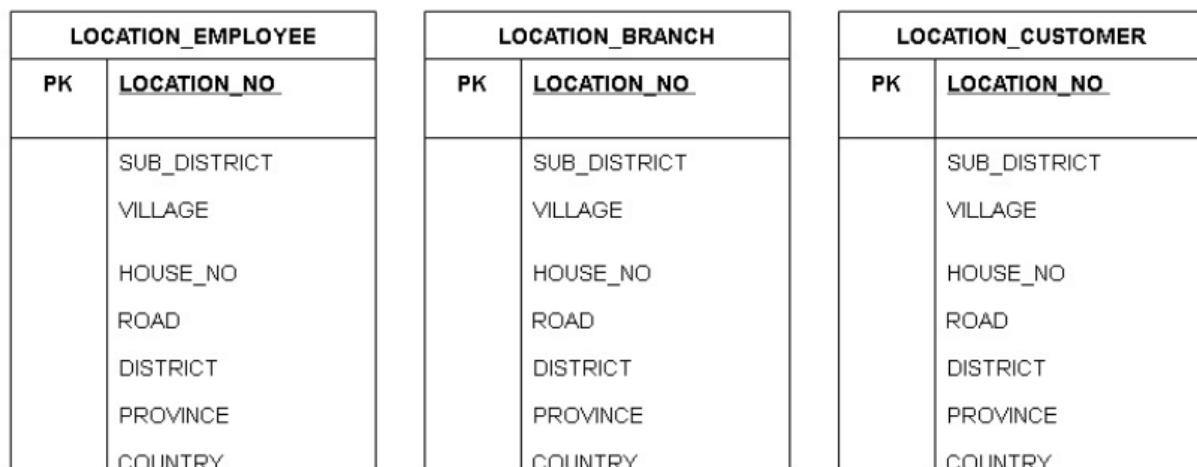
#### 3A) Multiple Relations

##### EMPLOYEE (3A)

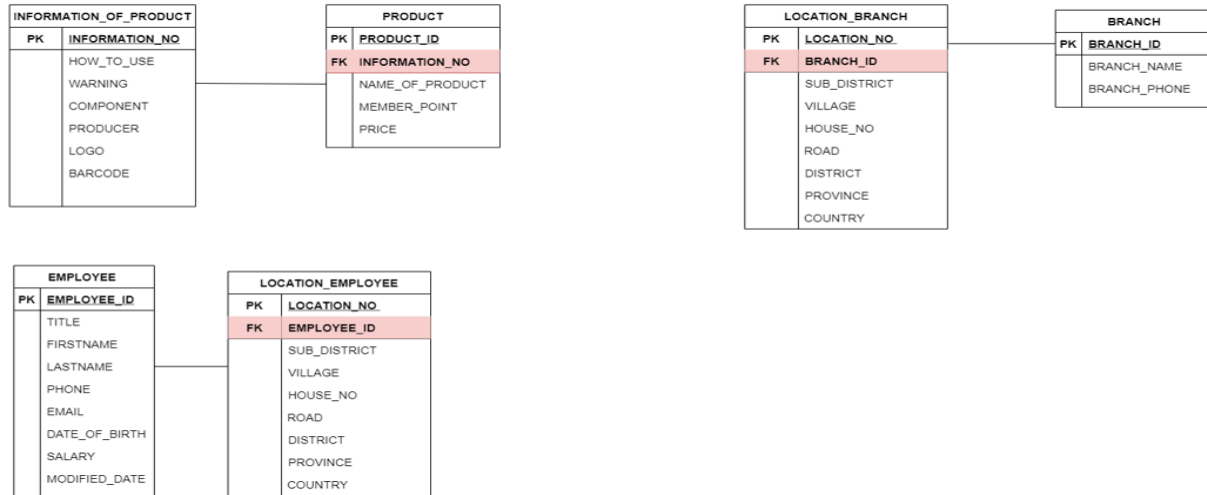


#### 3B) Multiple Relations

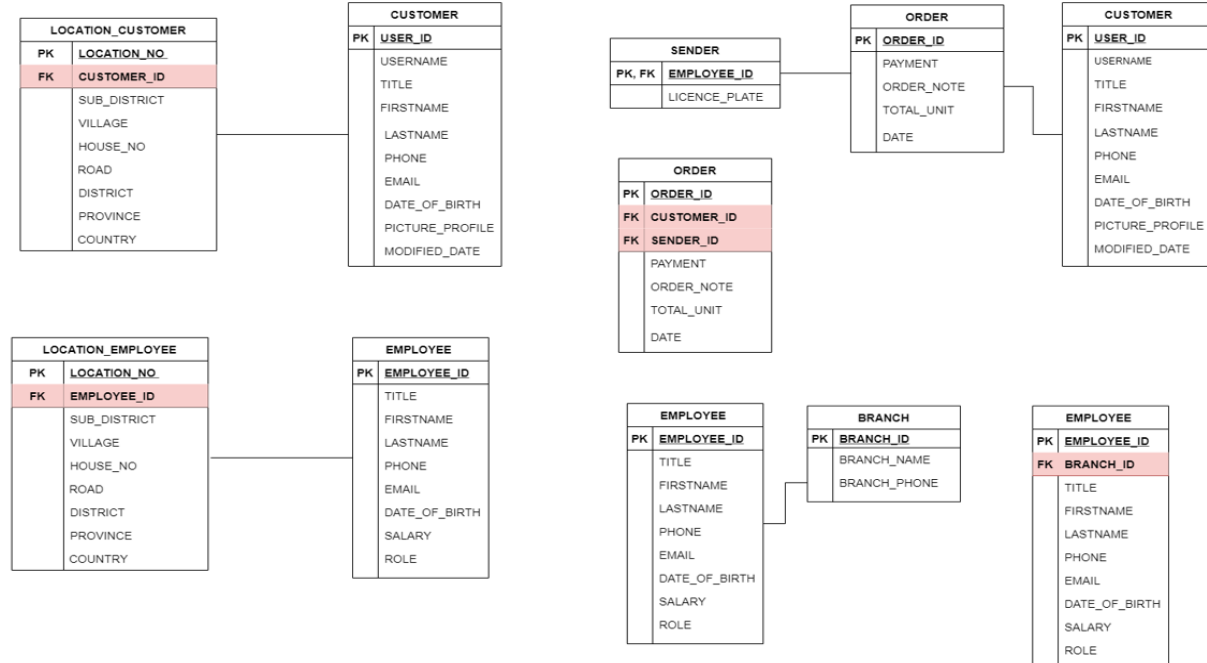
##### LOCATION(3B)



## Step 4: Binary 1:1 Relationship Type R

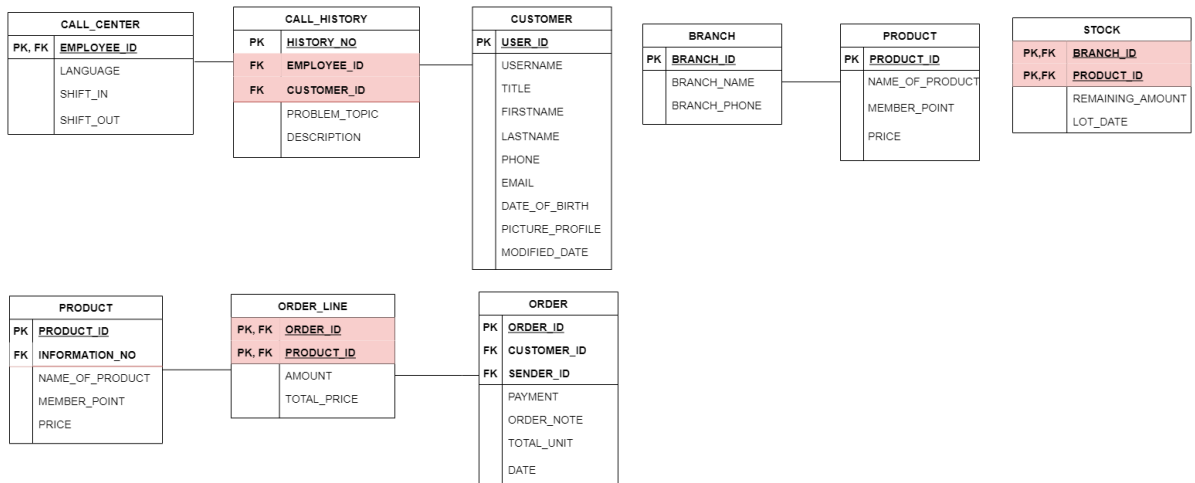


## Step 5: Binary 1:N Relationship Type R



## Step 6: Binary M:N Relationship Type R

STEP 6



## Step 7: Multi-Valued Attribute

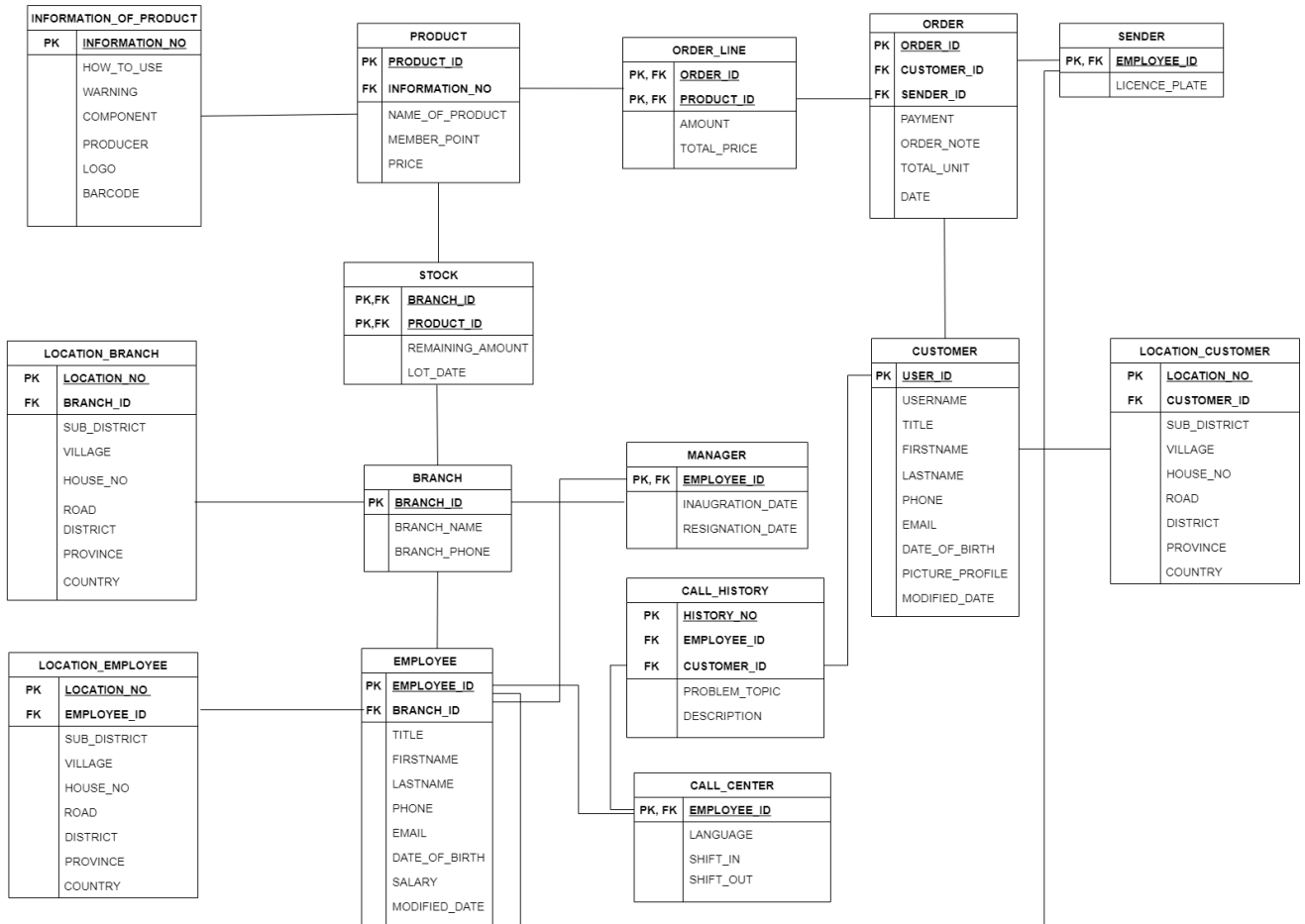
We do not have this step because we do not have multi-valued attributes.

## Step 8: N-ary Relationship

We do not have this step because we do not have a N-ary relationship.

# Final Relational Schema

Final Relational Schema



## Data Dictionary

Table Name	Attribute Name	Contents	Type	Format	Nullable	Range	Key	FK Referenced Table
Branch	Branch_ID	Branch's ID	varchar(20)	Xxxxx			PK	
	Branch_Name	Branch's Name	varchar(50)	Xxxxxx				
	Branch_Phone	Branch's Phone number	char(10)	xxxxxxxxxx				
Customer	Customer_ID	Customer's ID	varchar(20)	Xxxxxx			PK	
	Username	Customer's username	varchar(50)	Xxxxxx				
	Title	Customer's title	varchar(5)	Xxxxx		Miss,Mrs,Mr		
	Firstname	Customer's firstname	varchar(50)	Xxxxxx				
	Lastname	Customer's lastname	varchar(50)	Xxxxxx				
	Phone	Customer's phone number	char(10)	xxxxxxxxxx				
	Email	Customer's email	varchar(50)	Xxxxxx	Y			
	Date_Of_Birth	Customer's birthday	date	yyyy-mm-dd				
	Picture_Profile	Customer's picture	varchar(100)	Xxxxxxxxxxx	Y			
	Modified_Date	Customer's modified date	date	yyyy-mm-dd				
Call_Center	Employee_ID	Employee's ID	varchar(20)	Xxxxxx			PK,FK	Employee_ID [Employee]
	Language_Skill	Language that call center can	varchar(50)	Xxxxxx	Y			
	Shift_In	Time to work	time	xx:xx:xx				
	Shift_Out	Time off work	time	xx:xx:xx				
Employee	Employee_ID	Employee's ID	varchar(20)	Xxxxxxx			PK	
	Branch_ID	Branch's ID	varchar(20)	Xxxxxx				Branch_ID [Branch]
	Title	Employee's title	varchar(5)	Xxxxx		Miss,Mrs,Mr		
	Firstname	Employee's firstname	varchar(50)	Xxxxxx				
	Lastname	Employee's lastname	varchar(50)	Xxxxxx				
	Phone	Employee's phone number	char(10)	xxxxxxxxxx				
	Email	Employee's email	varchar(50)	Xxxxxx				
	Date_Of_Birth	Employee's birthday	date	yyyy-mm-dd				
	Salary	Employee's salary	int	x	Y			
	Modified_Date	Employee's date of modified	date	yyyy-mm-dd				
Information_Of_Product	Information_No	Information's number	int	x			PK	
	How_To_Use	How to use product	varchar(200)	Xxxxxx	Y			
	Warning	Warning of product	varchar(200)	Xxxxxx				
	Component_Product	Component of product	varchar(200)	Xxxxxx				
	Producer	Producer of product	varchar(50)	Xxxxxx				
	Logo	Logo of product	varchar(100)	Xxxxxxxxxxx				
	Barcode	Barcode of product	varchar(100)	Xxxxxxxxxxx				
Location_Branch	Branch_ID	Branch's ID	varchar(20)	Xxxxxx			FK	Branch_ID [Branch]

	Location_No	Location's number	varchar(20)	Xxxxxx			PK	
	Road	Location's road	varchar(50)	Xxxxxx	Y			
	Sub_District	Location's sud district	varchar(50)	Xxxxxx				
	District	Location's district	varchar(50)	Xxxxxx				
	Province	Location's province	varchar(50)	Xxxxxx				
	Post_Code	Location's post code	char(5)	xxxxx				
Location_Customer	Customer_ID	Customer's ID	varchar(20)	Xxxxxx			FK	Customer_ID [Customer]
	Location_No	Location of customer's number	varchar(20)	Xxxxxx			PK	
	House_No	Location's house no	varchar(50)	Xxxxxx				
	Village	Location's village	varchar(50)	Xxxxxx				
	Road	Location's road	varchar(50)	Xxxxxx	Y			
	Sub_District	Location's sud district	varchar(50)	Xxxxxx				
	District	Location's district	varchar(50)	Xxxxxx				
	Province	Location's province	varchar(50)	Xxxxxx				
	Post_Code	Location's post code	char(5)	xxxxx				
Location_Employee	Employee_ID	Employee's ID	int	x			FK	Employee_ID [Employee]
	Location_No	Location of employee's number	int	x			PK	
	Road	Location's road	varchar(50)	Xxxxxx	Y			
	Sub_District	Location's sud district	varchar(50)	Xxxxxx				
	District	Location's district	varchar(50)	Xxxxxx				
	Province	Location's province	varchar(50)	Xxxxxx				
	Post_Code	Location's post code	char(5)	xxxxx				
Manager	Employee_ID	Employee's ID	varchar(20)	Xxxxxx			PK,FK	Employee_ID [Employee]
	Inaguration_Date	Employee's inaguration date	date	yyyy-mm-dd				
	Resignation_Date	Employee's resignation date	date	yyyy-mm-dd				
Order_Goods	Order_ID	Order's ID	varchar(50)	x			PK	
	Payment	Order's payment	varchar(200)	Xxxxxx				
	Order_Note	Note of order	varchar(100)	Xxxxxx	Y			
	Order_Date	Order's date	date	yyyy-mm-dd				
Order_Line	Order_ID	Order's ID	varchar(50)	Xxxxxx			PK,FK	Order_ID [Order]
	Product_ID	Product's ID	varchar(20)	Xxxxxx			PK,FK	Product_ID [Product]
	Amount	Number of product that we buy	int	x				
	Total_Price	Total price of amount of stock	decimal(5,2)	12345.00				
Product	Product_ID	Product's ID	varchar(20)	Xxxxxx			PK	
	Name_Of_Product	Product's name	varchar(50)	Xxxxxx				
	Member_Point	Point of the member	int	x				



	Price	Price of product (Baht)	decimal(5,2)	12345.00				
	Information_No	Information's number	int	x			FK	Information_No [Information_Of_Product]
Sender	Licence_Plate	Licence plate of sender	varchar(10)	Xxxxxxxxxx				
	Employee_ID	Employee's ID	varchar(20)	Xxxxxx			PK,FK	Employee_ID [Employee]
Stock	Branch_ID	Branch's ID	varchar(20)	Xxxxxx			PK,FK	Branch_ID [Branch]
	Product_ID	Product's ID	varchar(20)	Xxxxxx			PK,FK	Product_ID [Product]
	Remaining_Amount	Amount of stock that we have	int	x				
	Lot_Date	Date of stock that come into w date	yyyy-mm-dd				PK	
Call_History	History_No	Order of a call	int	x			PK	
	Employee_ID	Employee's ID	varchar(20)	Xxxxxx			FK	Employee_ID [Employee]
	Customer_ID	Customer's ID	varchar(20)	Xxxxxx			FK	Customer_ID [Customer]
	Problem_Topic	Speaking topic	varchar(50)	Xxxxxx				
	Call_Description	Problem's description	varchar(200)	Xxxxxx				

## Samples data

### 1. Branch

Branch_ID	Branch_Name	Branch_Phone
00781	Pratuchai Phrae	0921177044
01520	Piriyalai	0949933032
04081	Buathong Parkville	0886269852
04570	Chaloem Phrakiat 48	0886270780
04853	Bang Luang	0886297131
10165	Ton Mai Khlong 15	0886271354
14319	Aiyatha Market	0886289451

### 2. Call center

Employee_ID	Language_Skill	Shift_In	Shift_Out
0633002	Chinese	06:30:00	17:00:00
0633071		17:00:00	06:30:00
0633095	Chinese	17:00:00	06:30:00
0633124	English	06:30:00	17:00:00
0633152	Chinese	06:30:00	17:00:00
0633159	Japanese	06:30:00	17:00:00

### 3. Customer

Customer_ID	Username	Title	Firstname	Lastname	Phone	Email	Date_Of_Birth	Picture_Profile	Modified_Date
115342	nitnoi97	Mr	Nititas	Noipalee	0954213674	nititas@gmail.com	1997-10-23	<a href="https://github.com/server/picture_profile/1153...">https://github.com/server/picture_profile/1153...</a>	2020-07-05
116324	naruponcho	Mr	Narupon	Chokechatree	0845679856	narupon@yahoo.com	1990-02-18	<a href="https://github.com/server/picture_profile/1163...">https://github.com/server/picture_profile/1163...</a>	2020-03-23
120031	ballsupachok	Mr	Supachok	Chaichongmee	0836457251	supachok.chai@hotmail.com	2000-07-11	<a href="https://github.com/server/picture_profile/1200...">https://github.com/server/picture_profile/1200...</a>	2020-10-05
125031	0985473210	Mr	Nattapat	Sirilmpuran	0985473210	nattapat@outlook.co.th	1986-09-05	<a href="https://github.com/server/picture_profile/1250...">https://github.com/server/picture_profile/1250...</a>	2020-04-04
132011	chanakul2002	Miss	Chanakul	Chaliawklang	0812257320	chanakul2002@hotmail.com	2002-05-25	<a href="https://github.com/server/picture_profile/1320...">https://github.com/server/picture_profile/1320...</a>	2020-02-01
137510	bamchotirot89	Mrs	Chotirot	Klinthong	0894718632	chotirot@gmail.com	2002-05-25	<a href="https://github.com/server/picture_profile/1375...">https://github.com/server/picture_profile/1375...</a>	2021-06-18

### 4. Call History

History_No	Employee_ID	Customer_ID	Problem_Topic	Call_Description
1	0633743	125031	Refund	Give a refund to customer
2	0633794	137510	Return	Return the products
3	0633917	132011	App error	Cannot access to 7-Eleven application
4	0633133	143002	Return	Return the products
5	0633196	178001	Slow delivery	The sender always sends late
6	0633964	179520	Refund	Give a refund to customer
7	0649731	132011	App error	Cannot access to 7-Eleven application
8	0649171	143002	Return	Return the products

## 5. Employee

Employee_ID	Branch_ID	Title	Firstname	Lastname	Phone	Email	Date_Of_Birth	Salary	Modified_Date
0633002	15113	Mrs	Kanokwan	Veeraphan	0656456550	kanokvee@gmail.com	1999-12-25	25000	2021-11-02
0633071	04081	Miss	Sasithorn	Phukan	0855422476	sasithorn.p@hotmail.com	2000-06-01	20000	2019-01-17
0633095	10165	Mr	Natakorn	Chomphoobut	0981455905	natakorn.c@gmail.com	1998-10-15	27000	2017-03-07
0633096	14319	Mrs	Ratha	Sirima	0897425623	ratha.s@hotmail.com	2001-01-01	21000	2021-11-05
0633107	04570	Mr	Chirawat	Boonchai	0932245466	boon12@gmail.com	1997-09-01	20000	2019-10-31
0633112	15113	Mr	Jirat	Burat	0956523472	jirat95@gmail.com	1995-01-09	30000	2017-12-01
0633117	04570	Mrs	Tashita	Poya	0872354986	t_poya@hotmail.com	2000-09-09	22500	2020-11-09
0633124	15113	Miss	Rattana	Dungphimai	0983716255	ratana97@gmail.com	1997-12-04	18000	2020-04-18

## 6. Information of Product

Information_No	How_To_Use	Warning	Component_Product	Producer	Logo	Barcode
361494	Keep in refrigerator	This product was processed ingredients contain...	Potato, Rice bran oil, Seasoning	Lay	<a href="https://github.com/server/logo/361494.png">https://github.com/server/logo/361494.png</a>	<a href="https://github.com/server/barcode/361494">https://github.com/server/barcode/361494</a>
361714	Keep in refrigerator	This product was processed ingredients contain...	Flour, Strawberry, Sugar, Egg, Wheat	EZYO	<a href="https://github.com/server/logo/361714.png">https://github.com/server/logo/361714.png</a>	<a href="https://github.com/server/barcode/361714">https://github.com/server/barcode/361714</a>
361716	Please warm nugget in microwave	This product was processed ingredients contain...	Chicken, Whole wheat flour, Egg	EZYO	<a href="https://github.com/server/logo/361716.png">https://github.com/server/logo/361716.png</a>	<a href="https://github.com/server/barcode/361716">https://github.com/server/barcode/361716</a>
361946	Keep in refrigerator	This product was processed ingredients contain...	Flour, Butter, Sugar, Egg, Wheat	Bow Delicious	<a href="https://github.com/server/logo/361946.png">https://github.com/server/logo/361946.png</a>	<a href="https://github.com/server/barcode/361946">https://github.com/server/barcode/361946</a>
362212	-	-	Water	Singha	<a href="https://github.com/server/logo/362212.png">https://github.com/server/logo/362212.png</a>	<a href="https://github.com/server/barcode/362212">https://github.com/server/barcode/362212</a>
364647	Keep in refrigerator	This product was processed ingredients contain...	Milk	EZYO	<a href="https://github.com/server/logo/364647.png">https://github.com/server/logo/364647.png</a>	<a href="https://github.com/server/barcode/364647">https://github.com/server/barcode/364647</a>
364974	Keep in refrigerator	This product was processed ingredients contain...	Cocoa butter, Milk, Cocoa mass, Nut	Nestle	<a href="https://github.com/server/logo/364974.png">https://github.com/server/logo/364974.png</a>	<a href="https://github.com/server/barcode/364974">https://github.com/server/barcode/364974</a>

## 7. Location Branch

Branch_ID	Location_No	Road	Sub_District	District	Province	Post_Code
15113	00001	Ramkhamhaeng 2	Dokmai	Prawet	Bangkok	10250
04570	00002	Sukhaphibal 1	Dokmai	Prawet	Bangkok	10260
04081	00003	Bang Bua Thong	Phimonrat	Bangbuathong	Nonthaburi	11110
14319	00004	Khlong Luang Muang Mai	Khlong Song	Khlong Luang	Pathumthani	12120
10165	00005	Nakhon Nayok	Khlong Yai	Ong Karak	Nakhon Nayok	26120
04853	00006	Highway 3351	Bang Luang	Bang Lane	Nakhon Pathom	73190

## 8. Location Customer

Customer_ID	Location_No	House_No	Village	Road	Sub_District	District	Province	Post_Code
115342	00011	71/2	Phrueksa Village	Daothong	Mahasawat	Phuttamonthon	Nakhon Pathom	73170
116324	00012	61/67	Suralai Housing	Bang Kruai - Sai Noi	Bang Yai	Bang Yai	Nonthaburi	11140
120031	00013	21/1	Ban Rim Suan	Yothathikan	Bang Rak Noi	Meuang	Nonthaburi	11000
125031	00014	12/456	Kaeo Villa	Phuttha Monthon Sai 1	Bang Duan	Phasi Chareon	Bangkok	10160
137510	00015	61/264	Butsaba Village	Phuttha Monthon Sai 2	Sala Thammasop	Thawi	Bangkok	10170
132011	00016	56/23	Kawinthip Village	Borommaratchachonnani	Song Khanong	Sam Phran	Nakhon Pathom	73120

## 9. Location Employee

Employee_ID	Location_No	Road	Sub_District	District	Province	Post_Code
0633002	10021	Sukhaphibal 2	Bang Phli Yai	Bang Phli	Samut Prakan	10540
0633107	10022	Sukhumvit	Phra Khanong	Khlong Toei	Bangkok	10110
0633189	10023	Nakhon Chaisi	Thanon Nakhon Chai Si	Dusit	Bangkok	73120
0633152	10024	Yaowarat	Samphanthawong	Samphanthawong	Bangkok	10100
0633166	10025		Nong Khang Phlu	Nong Khaem	Bangkok	10160
0633257	10026	Rama 3	Bang Phong Phang	Yan Nawa	Bangkok	10120
0633124	10027	Chalermkhet	Pomprap	Pomprap	Bangkok	10100
0633145	10028	Yantrakit Koso	Nai wang	Mueang	Phare	54000
0633071	10029	Ratchauthit	Nai Wiang	Mueang Phrae	Phrae	54000

## 10.Manager

Employee_ID	Inaguration_Date	Resignation_Date
0633107	2020-12-27	2019-01-31
0633145	2021-11-10	2021-03-01
0633152	2021-06-09	2021-03-21
0633189	2021-02-08	2020-12-24
0633191	2020-08-11	2019-10-05
0633196	2021-07-06	2021-11-20
0633257	2021-03-11	2020-02-08
0633964	2021-03-04	2021-09-20
0649171	2020-01-08	2021-09-03
0649731	2020-09-10	2021-04-07

## 11.Order Goods

Order_ID	Payment	Order_Note	Order_Date
00781847625139549	True money	Please give me a ketchup	2021-11-26
01520121456875498	Cash	Please give me a plastic fork	2021-08-14
04081484416516518	Cash	Please call me when you arrive	2019-02-14
04081529620518484	Cash	Warm in microwave	2019-03-26
04081829129288499	Cash	Please give me a plastic spoon	2021-04-11
04081928485969127	True money	Please give me a ketchup	2021-06-19
04081956250205486	Cash	Please give me a mayonnaise	2021-03-02
04081974265189595	Cash	-	2021-08-30

## 12.Order Line

Order_ID	Product_ID	Amount	Total_Price
00781847625139549	8851362649514	2	60.00
00781847625139549	8894194134907	1	25.00
01520121456875498	8864596562626	2	50.00
01520121456875498	8865296563147	1	30.00
04081484416516518	8851351151253	1	30.00
04081484416516518	8851362649514	3	90.00
04081484416516518	8869461941947	3	75.00
04081484416516518	8891491947194	2	60.00
04081529620518484	8891491947194	1	30.00
04081829129288499	8851362649514	3	90.00
04081829129288499	8891491947194	1	30.00

### 13. Product

Product_ID	Name_Of_Product	Member_Point	Price	Information_No
8816169530314	Yogurt	2	15.00	364647
8850999321004	Sing Drinking Water	1	9.00	362212
8851351151253	Chicken nuggets	4	35.00	361716
8851362649514	Fluffy pancake	3	30.00	361946
8864596562626	Eclair	3	25.00	365959
8865296563147	Strawberry Mochi	3	30.00	368489
8869461941947	Brown sugar soy milk	3	25.00	369944
8891491947194	Pancake with strawberry sause	3	30.00	361714

### 14. Sender

Employee_ID	Licence_Plate
0633095	สสส 797
0633096	อพท 99
0633112	สตร 168
0633117	อพว 1
0633142	กกก 147
0633159	ทบพ 03
0633187	ยบพ 245
0633191	ลมน 7

### 15. Stock

Branch_ID	Product_ID	Remaining_Amount	Lot_Date
00781	8816169530314	44	2021-11-23
00781	8851351151253	116	2021-06-02
00781	8851362649514	364	2021-03-21
00781	8864596562626	312	2020-10-30
00781	8869461941947	8	2021-03-26
00781	8894194134907	231	2020-08-03
00781	8897461413658	77	2020-12-31
01520	8816169530314	196	2021-11-10

## 16. Call History

Employee_ID	Customer_ID	Problem_Topic	Call_Description
0633133	143002	Return	Return the products
0633196	178001	Slow delivery	The sender always sends late
0633743	125031	Refund	Give a refund to customer
0633794	137510	Return	Return the products
0633917	132011	App error	Cannot access to 7-Eleven application
0633964	179520	Refund	Give a refund to customer

## Basic SQL

- 1) Show lists the total number of male customers who have the word “Mr” in the title.

```
SELECT customer_id, firstname, lastname  
FROM customer  
WHERE title = 'Mr';
```

	customer_id	firstname	lastname
►	115342	Nititas	Noipalee
	116324	Narupon	Chokechatree
	120031	Supachok	Chaichongmee
	125031	Nattapat	Sirilimprapan
	143002	Pontapan	Polyiam
	179520	Ariya	Malai

- 2) Show the id, first name, and last name of employees who have salaries more than 20,000 Baht.

```
SELECT employee_id, firstname, lastname  
FROM employee  
WHERE Salary > 20000;
```

	employee_id	firstname	lastname
►	0633002	Kanokwan	Veeraphan
	0633095	Natakorn	Chomphoobut
	0633096	0633095	Sirima
	0633112	Jirat	Burat
	0633117	Tashita	Poya
	0633142	Pimmada	Jantara
	0633145	Alisara	Nonsiri
	0633152	Marisa	Supasorn
	0633166	Somchai	Panyatip
	0633191	Pakorn	Malai

- 3) Demonstrate all provinces which are the customer's address and total number of the customers of those specific provinces sorted by province name alphabetically.

```
SELECT province, COUNT(customer_id) AS 'total number of customer'
FROM location_customer
GROUP BY province
ORDER BY province;
```

	province	total number of customer
▶	Bangkok	2
	Nakhon Pathom	2
	Nonthaburi	2

- 4) Count the number of orders that have a total price more than 100 Baht and sort by total price in ascending order.

```
SELECT order_id, SUM(total_price) AS total_amount
FROM order_line
GROUP BY order_id
HAVING total_amount > 100
ORDER BY total_amount;
```

	order_id	total_amount
▶	14319506128956227	115.00
	04081974265189595	135.00
	04570260505128495	140.00
	04570841005194849	150.00
	15113592647484586	160.00
	04081829129288499	180.00
	04853105051849288	180.00
	10165585248484863	190.00
	04570205185963628	195.00
	15113529484051258	205.00
	04570285185487416	210.00
	14319205051859534	215.00
	15113125128518959	215.00
	04570548478485010	220.00
	10165595928740299	235.00
	04081484416516518	255.00
	15113898150687895	270.00



5) List all the problems that are related to the application.

```
SELECT *  
FROM call_history  
WHERE problem_topic LIKE '%App%';
```

History_No	Employee_ID	Customer_ID	Problem_Topic	Call_Description
3	0633917	132011	App error	Cannot access to 7-Eleven application
7	0649731	132011	App error	Cannot access to 7-Eleven application
11	0633794	137510	App error	Cannot change an email
12	0649731	179520	App error	Payment process error
14	0633964	143002	App error	Payment process error
19	0633964	137510	App error	Cannot access to 7-Eleven application
28	0633794	179520	App error	Payment process error

6) Find the average salary of employees in a 7-11 company.

```
SELECT AVG(salary) AS 'average salary'  
FROM employee;
```

	average salary
▶	23176.4706

7) Find the top 3 best selling products in the 7-11 company.

```
SELECT product_id, SUM(amount) AS 'Amount'  
FROM order_line  
GROUP BY product_id  
ORDER BY SUM(amount) DESC  
LIMIT 3;
```

	product_id	Amount
▶	8851362649514	30
	8894194134907	25
	8851351151253	23

8) List the total amount and total price of the products in each order id and sort by the total amount ascendingly.

```
SELECT order_id, SUM(amount) AS 'Total unit', SUM(total_price) AS 'Summation of total price'
FROM order_line
GROUP BY order_id
ORDER BY SUM(amount) ASC;
```

	order_id	Total unit	Summation of total price
▶	04081529620518484	1	30.00
	04081928485969127	1	30.00
	04570565231315151	1	35.00
	14319958447051955	1	30.00
	04853519848597367	2	50.00
	14319261848959634	2	60.00
	15113595205184599	2	60.00
	04081956250205486	3	85.00
	04853059845225269	3	95.00
	10165520205174856	3	90.00
	14319101847858625	3	85.00
	14319292829292484	3	90.00
	15113211023847536	3	90.00
	04081974265189595	4	135.00
	14319506128956227	4	115.00
	04570260505128495	5	140.00
	15113592647484586	5	160.00
	04081829129288499	6	180.00
	04570841005194849	6	150.00
	04853105051849288	6	180.00
	10165585248484863	6	190.00
	15113529484051258	6	205.00
	04570205185963628	7	195.00
	04570285185487416	7	210.00
	04570548478485010	7	220.00
	14319205051859534	7	215.00
	15113125128518959	7	215.00
	10165595928740299	8	235.00
	04081484416516518	9	255.00
	15113898150687895	9	270.00

- 9) Find the product ID of the least amount of remaining items in Branch\_ID 04570.

```
SELECT branch_id, product_id, MIN(remaining_amount) AS 'amount'
FROM stock
WHERE branch_id = "04570";
```

	branch_id	product_id	amount
▶	04570	8851351151253	98

- 10) List all the branches with a new lot of product coming between 1 Nov 2021 to 15 Nov 2021.

```
SELECT *
FROM stock
WHERE lot_date BETWEEN '2021-11-01' AND '2021-11-15';
```

	Branch_ID	Product_ID	Remaining_Amount	Lot_Date
▶	04853	8894194134907	46	2021-11-09
	10165	8851351151253	73	2021-11-10
	10165	8869461941947	113	2021-11-14
	10165	8894194134907	5	2021-11-06
	10165	8897461413658	73	2021-11-10
•	NULL	NULL	NULL	NULL

- 11) Show the top three employees (ID, first name, last name, and salary) with the highest salary.

```
SELECT employee_id, firstname, lastname, salary
FROM employee
order by salary desc
limit 3;
```

	employee_id	firstname	lastname	salary
▶	0633145	Alisara	Nonsiri	35000
	0633166	Somchai	Panyatip	32000
	0633112	Jirat	Burat	30000

- 12) Count the number of each payment type and list it in descending order.

```
SELECT payment, COUNT(payment) AS "Total # of payment"
FROM order_goods
GROUP BY payment
ORDER BY COUNT(payment) DESC;
```

	payment	Total # of payment
▶	Cash	13
	True money	13
	Card	4

- 13) Find the order that has the most total price.

```
SELECT order_id, SUM(total_price) as total_price
FROM order_line
group by order_id
order by total_price desc
limit 1;
```

	order_id	total_price
▶	15113898150687895	270.00

- 14) Show the ID, first name, last name of all employees who have the word “Mrs” in the title.

```
SELECT employee_id, firstname, lastname  
FROM employee  
WHERE title = 'Mrs';
```

	employee_id	firstname	lastname
▶	0633002	Kanokwan	Veeraphan
	0633096	Ratha	Sirima
	0633117	Tashita	Poya
	0633145	Alisara	Nonsiri
	0633167	Nisachon	Thawieng
	0633189	Nitchamon	Chamsi

- 15) List Location\_No, Road, and Post\_code of all location customers where the province is in Bangkok.

```
SELECT location_no, road, post_code  
FROM location_customer  
WHERE Province = 'Bangkok';
```

	location_no	road	post_code
▶	01223	Phuttha Monthon Sai 1	10160
	02310	Phuttha Monthon Sai 2	10170

- 16) Show the average age of the customers who use the 7-11 Delivery application.

```
SELECT AVG(YEAR(CURDATE()) - YEAR(date_of_birth)) as 'Average age of the users'  
FROM customer;
```

	Average age of the users
▶	24.8000

- 17) Count the number of customers that have locations in Nonthaburi.

```
SELECT count(distinct customer_id) as 'Number of customer in Nonthaburi'  
FROM location_customer  
WHERE province = 'Nonthaburi';
```

	Number of customer in Nonthaburi
▶	2

- 18) List all ages of the customers and list them in descending order.

```
SELECT firstname, lastname, YEAR(CURDATE()) - YEAR(date_of_birth) as age  
FROM customer  
ORDER BY age asc;
```

	firstname	lastname	age
▶	Chanakul	Chaliawklang	19
	Chotirot	Klinthong	19
	Pontapan	Polyiam	20
	Supachok	Chaichongmee	21
	Nitchamon	Aworn	21
	Nititas	Noipalee	24
	Ariya	Malai	27
	Narupon	Chokechatree	31
	Wathanya	Tabanhan	31
	Nattapat	Sirilimprapan	35

- 19) List Location\_No, Branch\_ID, Sub-District, and Post\_code of all location branches where the district is in Prawet.

```
SELECT location_no, Branch_ID, Sub_District, post_code  
FROM location_branch  
WHERE District = 'Prawet';
```

	location_no	Branch_ID	Sub_District	post_code
▶	00032	15113	Dokmai	10250
	00102	04570	Dokmai	10260

- 20) List the top 2 employees (ID, first name, last name, E-mail) who have the letter “S” in their first name.

```
SELECT employee_id, firstname, lastname, email
FROM employee
WHERE firstname like '%S%'
LIMIT 2;
```

	employee_id	firstname	lastname	email
►	0633071	Sasithorn	Phukan	sasithorn.p@hotmail.com
	0633117	Tashita	Poya	t_poya@hotmail.com

## Advance SQL

- 21) List all the total stock of the products in each branch (branch name, branch ID) and sort by the total stock descendingly.

```
SELECT b.branch_id, branch_name, SUM(remaining_amount) AS "Total stock"
FROM branch b
JOIN stock s ON b.branch_id = s.branch_id
GROUP BY branch_name
ORDER BY SUM(remaining_amount) DESC;
```

	branch_id	branch_name	Total stock
►	15113	Niran Ville 4 (Ram2)	1516
	01520	Piriyalai	1385
	10165	Ton Mai Khlong 15	1280
	00781	Pratuchai Phrae	1152
	15640	VillaNova (Bang Phli-Tamru)	1081
	04081	Buathong Parkville	964
	04570	Chaloem Phrakiat 48	907
	14319	Aiyatha Market	720
	04853	Bang Luang	593
	16493	Nilubon	516

- 22) List all manager names, inauguration date, resignation date of each branch.

```
SELECT CONCAT(firstname, " ", lastname) AS manager_name, branch_name, inagugration_date, resignation_date
FROM employee e
INNER JOIN manager m ON e.employee_id = m.employee_id
INNER JOIN branch b ON e.branch_id = b.branch_id;
```

	manager_name	branch_name	inagugration_date	resignation_date
►	Chirawat Boonchai	Chaloem Phrakiat 48	2020-12-27	2019-01-31
	Alisara Nonsiri	Chaloem Phrakiat 48	2021-11-10	2021-03-01
	Marisa Supasorn	Aiyatha Market	2021-06-09	2021-03-21
	Nitchamon Chamsi	Buathong Parkville	2021-02-08	2020-12-24
	Pakorn Malai	Bang Luang	2020-08-11	2019-10-05
	Sasima Srijanya	VillaNova (Bang Phli-Tamru)	2021-07-06	2021-11-20
	Saranya Meechai	Bang Luang	2021-03-11	2020-02-08
	Wimonrat Teerawongpairoj	Nilubon	2021-03-04	2021-09-20
	Watana Teerawongpairoj	Pratuchai Phrae	2020-01-08	2021-09-03
	Juthamas Srijanya	VillaNova (Bang Phli-Tamru)	2020-09-10	2021-04-07



- 23) List all products and its information (product\_name, member\_point, price, how\_to\_use, warning, producer).

```
SELECT name_of_product, member_point, price, how_to_use, warning, producer
FROM product AS p INNER JOIN information_of_product AS ip ON p.information_no = ip.information_no;
```

	name_of_product	member_point	price	how_to_use	warning	producer
►	Yogurt	2	15.00	Keep in reffridgerator	This product was processed ingredients containi...	EZYGO
	Sing Drinking Water	1	9.00	-	-	Singha
	Chicken nuggets	4	35.00	Please warm nugget in microwave	This product was processed ingredients containi...	EZYGO
	Fluffy pancake	3	30.00	Keep in reffridgerator	This product was processed ingredients containi...	Bow Delicious
	Eclair	3	25.00	Keep in reffridgerator	This product was processed ingredients containi...	EZYGO
	Strawberry Mochi	3	30.00	Keep in reffridgerator	This product was processed ingredients containi...	EZYGO
	Brown sugar soy milk	3	25.00	Keep in reffridgerator	Best if consumed within 1 day after opening.	Tofusan
	Pancake with strawberry sause	3	30.00	Keep in reffridgerator	This product was processed ingredients containi...	EZYGO
	Kit kat	3	25.00	Keep in reffridgerator	This product was processed ingredients containi...	Nestle
	Lay big grab	3	30.00	NOTE	This product was processed ingredients containi...	Lay

- 24) List the username and name (first name and last name) of the customer who calls the call center asking for a refund and sort by customer name ascendingly.

```
SELECT Username AS "customer username", CONCAT(Firstname, " ", Lastname) AS "customer name"
FROM customer cus
JOIN call_history c ON cus.customer_id = c.customer_id
WHERE Problem_Topic = "refund"
ORDER BY Firstname;
```

customer username	customer name
AriyaZa	Ariya Malai
naruponcho	Narupon Chokechatree
naruponcho	Narupon Chokechatree
0985473210	Nattapat Sirilimprapan
0985473210	Nattapat Sirilimprapan
pon11701	Pontapan Polyiam
tabanhan9563	Wathanya Tabanhan

- 25) Show all product name, amount, total price and order date in each order sorted by order id and date ascending.

```
SELECT ol.order_id, name_of_product, amount, total_price, order_date
FROM order_line AS ol
INNER JOIN order_goods AS og ON ol.order_id = og.order_id
INNER JOIN product AS p ON ol.product_id = p.product_id
ORDER BY ol.order_id, order_date ASC;
```

	order_id	name_of_product	amount	total_price	order_date
▶	00781847625139549	Kit kat	1	25.00	2021-11-26
	00781847625139549	Fluffy pancake	2	60.00	2021-11-26
	01520121456875498	Strawberry Mochi	1	30.00	2021-08-14
	01520121456875498	Eclair	2	50.00	2021-08-14
	04081484416516518	Chicken nuggets	1	30.00	2019-02-14
	04081484416516518	Brown sugar soy milk	3	75.00	2019-02-14
	04081484416516518	Pancake with strawberry sause	2	60.00	2019-02-14
	04081484416516518	Fluffy pancake	3	90.00	2019-02-14
	04081529620518484	Pancake with strawberry sause	1	30.00	2019-03-26
	04081829129288499	Kit kat	2	60.00	2021-04-11
	04081829129288499	Fluffy pancake	3	90.00	2021-04-11
	04081829129288499	Pancake with strawberry sause	1	30.00	2021-04-11
	04081928485969127	Pancake with strawberry sause	1	30.00	2021-06-19
	04081956250205486	Kit kat	1	25.00	2021-03-02
	04081956250205486	Lay big grab	2	60.00	2021-03-02
	04081974265189595	Fluffy pancake	3	105.00	2021-08-30
	04081974265189595	Pancake with strawberry sause	1	30.00	2021-08-30
	04570205185963628	Kit kat	1	30.00	2021-12-04
	04570205185963628	Brown sugar soy milk	3	75.00	2021-12-04
	04570205185963628	Fluffy pancake	3	90.00	2021-12-04
	04570260505128495	Brown sugar soy milk	2	50.00	2020-12-31
	04570260505128495	Lay big grab	3	90.00	2020-12-31
	04570285185487416	Brown sugar soy milk	2	60.00	2021-03-13
	04570285185487416	Kit kat	2	60.00	2021-03-13
	04570285185487416	Lay big grab	3	90.00	2021-03-13
	04570548478485010	Chicken nuggets	2	70.00	2020-10-30
	04570841005194849	Brown sugar soy milk	3	75.00	2019-10-31
	04570841005194849	Kit kat	3	75.00	2019-10-31
	04853059845225269	Lay big grab	2	60.00	2019-01-01
	04853059845225269	Chicken nuggets	1	35.00	2019-01-01
	04853105051849288	Kit kat	3	75.00	2021-10-13
	04853105051849288	Chicken nuggets	3	105.00	2021-10-13
	04853519848597367	Kit kat	2	50.00	2019-05-05
	10165520205174856	Pancake with strawberry sause	3	90.00	2019-03-03
	10165585248484863	Fluffy pancake	2	70.00	2019-07-19
	10165585248484863	Pancake with strawberry sause	3	90.00	2019-07-19
	10165585248484863	Kit kat	1	30.00	2019-07-19
	10165595928740299	Fluffy pancake	3	90.00	2019-07-09
	10165595928740299	Pancake with strawberry sause	2	60.00	2019-07-09
	10165595928740299	Brown sugar soy milk	1	25.00	2019-07-09
	10165595928740299	Chicken nuggets	2	60.00	2019-07-09
	14319101847858625	Brown sugar soy milk	2	50.00	2019-01-10
	14319101847858625	Chicken nuggets	1	35.00	2019-01-10
	14319205051859534	Kit kat	2	50.00	2020-07-02
	14319205051859534	Chicken nuggets	3	105.00	2020-07-02
	14319205051859534	Fluffy pancake	2	60.00	2020-07-02
	14319261848959634	Fluffy pancake	2	60.00	2021-12-08
	14319292829292484	Pancake with strawberry sause	2	60.00	2020-12-13
	14319292829292484	Lay big grab	1	30.00	2020-12-13
	14319506128956227	Brown sugar soy milk	1	25.00	2020-11-21
	14319506128956227	Fluffy pancake	3	90.00	2020-11-21

14319958447051955	Pancake with strawberry sause	1	30.00	2020-02-24
15113125128518959	Pancake with strawberry sause	1	30.00	2021-05-30
15113125128518959	Chicken nuggets	1	35.00	2021-05-30
15113125128518959	Brown sugar soy milk	2	60.00	2021-05-30
15113125128518959	Kit kat	3	90.00	2021-05-30
15113211023847536	Lay big grab	3	90.00	2020-02-01
15113529484051258	Chicken nuggets	3	105.00	2020-05-18
15113529484051258	Fluffy pancake	2	70.00	2020-05-18
15113529484051258	Lay big grab	1	30.00	2020-05-18
15113592647484586	Chicken nuggets	2	70.00	2021-07-26
15113592647484586	Fluffy pancake	1	30.00	2021-07-26
15113592647484586	Kit kat	2	60.00	2021-07-26
15113595205184599	Pancake with strawberry sause	2	60.00	2019-11-28
15113898150687895	Pancake with strawberry sause	2	60.00	2020-06-17
15113898150687895	Kit kat	3	90.00	2020-06-17
15113898150687895	Fluffy pancake	1	30.00	2020-06-17
15113898150687895	Chicken nuggets	3	90.00	2020-06-17
15640453278415623	Pancake with strawberry sause	1	30.00	2020-07-18
15640453278415623	Yogurt	2	30.00	2020-07-18
15640453278415623	Chicken nuggets	1	35.00	2020-07-18
16493126972653192	Sing Drinking Water	3	27.00	2021-10-17

- 26) List all names (first name and last name) of customers and employees whose first name begins with letter “N” and order by lastname ascendingly.

```

SELECT firstname, lastname
FROM customer
WHERE firstname LIKE "N%"
UNION
SELECT firstname, lastname
FROM employee
WHERE firstname LIKE "N%"
ORDER BY lastname;

```

	firstname	lastname
►	Nitchamon	Aworn
	Nitchamon	Chamsi
	Narupon	Chokechatree
	Natakorn	Chomphoobut
	Nititas	Noipalee
	Nattapat	Sirilimprapan
	Nisachon	Thawieng

- 27) List all names (firstname and lastname) of customers and the location where customers live at Nakhon Pathom.

```
SELECT CONCAT(Firstname, " ", Lastname) AS name, House_No AS "House No", village, Road, Sub_District, District, Province, Post_Code AS Postcode
FROM customer c
JOIN location_customer l ON c.Customer_ID = l.Customer_ID
WHERE province = "Nakhon Pathom";
```

	name	House No	village	Road	Sub_District	District	Province	Postcode
▶	Nittas Noipalee	71/2	Phrueksa Village	Daothong	Mahasawat	Phuttamonthon	Nakhon Pathom	73170
	Chanakul Chaliawklang	56/23	Kawinthip Village	Borommaratchachonnani	Song Khanong	Sam Phran	Nakhon Pathom	73120

- 28) List all names (firstname and lastname) of employees who work at branch “Khlong Luang Muang Mai”.

```
SELECT CONCAT(firstname, " ", lastname) AS "employee name"
FROM employee e
JOIN branch b ON b.branch_id = e.branch_id
JOIN location_branch l ON b.branch_id = l.branch_id
WHERE road = "Khlong Luang Muang Mai";
```

	employee name
▶	Ratha Sirima
	Marisa Supasorn
	Nisachon Thawieng

- 29) List all orders that are paid by cash and have amounts more than 250 Baht.

```
SELECT *, SUM(total_price)
FROM order_goods g
JOIN order_line l ON g.order_id = l.order_id
WHERE payment = "Cash"
GROUP BY g.order_id
HAVING SUM(total_price) > 250;
```

	Order_ID	Payment	Order_Note	Order_Date	Order_ID	Product_ID	Amount	Total_Price	SUM(total_price)
▶	04081484416516518	Cash	Please call me when you arrive	2019-02-14	04081484416516518	8851351151253	1	30.00	255.00

30) Show all names of branches and location of branches.

```
SELECT branch_name, road, sub_district, district, province, post_code
from branch as b inner join location_branch as lb on b.branch_id = lb.branch_id;
```

branch_name	road	sub_district	district	province	post_code
Pratuchai Phrae	Kum Pang San	Kum Pang San	Kum Pang San	Nakhon Pathom	73000
Piriyalai	Ratchapruek	Bang Lamard	Taling Chan	Bangkok	10170
Buathong Parkville	Bang Bua Thong	Phimonrat	Bangbuathong	Nonthaburi	11110
Chaloem Phrakiat 48	Sukhaphibal 1	Dokmai	Prawet	Bangkok	10260
Bang Luang	Highway 3351	Bang Luang	Bang Lane	Nakhon Pathom	73190
Ton Mai Khlong 15	Nakhon Nayok	Khlong Yai	Ong Karak	Nakhon Nayok	26120
Aiyatha Market	Khlong Luang Muang Mai	Khlong Song	Khlong Luang	Pathumthani	12120
Niran Ville 4 (Ram2)	Ramkhamhaeng 2	Dokmai	Prawet	Bangkok	10250
VillaNova (Bang Phli-Tamru)	Paya Wong	Pra Prathom Jedee	Nakhon Pathom	Nakhon Pathom	73000
Nilubon	Ratchapruek	Taling Chan	Taling Chan	Bangkok	10170

31) List all order id which is payment with cash and total price more than 70 Bath.

```
SELECT og.order_id, SUM(total_price) AS amount
FROM order_goods og
LEFT OUTER JOIN order_line oi ON oi.order_id = og.order_id
WHERE og.payment = "Cash"
GROUP BY og.order_id
HAVING SUM(total_price) > 70;
```

order_id	amount
01520121456875498	80.00
04081484416516518	255.00
04081829129288499	180.00
04081956250205486	85.00
04081974265189595	135.00
04570260505128495	140.00
04570285185487416	210.00
04570548478485010	220.00
04853059845225269	95.00
04853105051849288	180.00
10165520205174856	90.00
10165585248484863	190.00
14319101847858625	85.00
15113211023847536	90.00
15640453278415623	95.00

32) Show employee name who rides a motorbike to send an order.

```
SELECT CONCAT(firstname, " ", lastname) AS "employee name"  
FROM employee e  
JOIN sender s ON e.employee_id = s.employee_id;
```

employee name
Natakorn Chomphoobut
Ratha Sirima
Jirat Burat
Tashita Poya
Pimmada Jantara
Kontawat Wisetpaitoon
Chanon Siribumrung
Pakorn Malai
Titaya Wisetpaitoon
Vichai Chaipasit

33) List of the number of products and companies sold.

```
SELECT iof.producer, SUM(oi.amount) AS "number of sales"  
FROM order_line oi  
JOIN product pro ON oi.product_id = pro.product_id  
JOIN information_of_product iof ON pro.information_no = iof.information_no  
GROUP BY producer  
ORDER BY SUM(oi.amount) DESC;
```

producer	number of sales
EZYGO	52
Bow Delicious	32
Nestle	26
Tofusan	19
Lay	18
Singha	3

- 34) List branch\_name, employee name (first name and last name), and salary of a manager who has a salary more than 23,000 Baht.

```
SELECT branch_name, CONCAT(firstname, " ", lastname) AS "employee name", salary
FROM branch b
JOIN employee e ON b.branch_id = e.branch_id
JOIN manager m ON e.employee_id = m.employee_id
WHERE salary > 23000;
```

branch_name	employee name	salary
Chaloem Phrakiat 48	Alisara Nonsiri	35000
Aiyatha Market	Marisa Supasorn	25000
Bang Luang	Pakorn Malai	25000
VillaNova (Bang Phli-Tamru)	Sasima Srijanya	32000
Nilubon	Wimonrat Teerawongpairaj	25000
Pratuchai Phrae	Watana Teerawongpairaj	35000
VillaNova (Bang Phli-Tamru)	Juthamas Srijanya	28000

- 35) List all employees id and names who can speak Chinese and location where they work.

```
SELECT e.employee_id, firstname, lastname, CONCAT(road, " ", sub_district, " ", province, " ", post_code) as work_location
FROM employee AS e
INNER JOIN call_center AS c ON e.employee_id = c.employee_id
INNER JOIN location_branch AS lb ON e.branch_id = lb.branch_id
WHERE c.language_skill = "Chinese";
```

employee_id	firstname	lastname	work_location
0633002	Kanokwan	Veeraphan	Ramkhamhaeng 2, Dokmai, Bangkok, 10250
0633095	Natakorn	Chomphoobut	Nakhon Nayok, Khlong Yai, Nakhon Nayok, 26120
0633152	Marisa	Supasorn	Khlong Luang Muang Mai, Khlong Song, Pathum...
0633894	Vichai	Chaipasit	Paya Wong, Pra Prathom Jedee, Nakhon Patho...



- 36) Show all branch id, manager names of the branch, and the total number of employees of each branch sorted by branch\_id.

```
SELECT
    e.branch_id,
    CONCAT(e.firstname, " ", e.lastname) AS manager_name,
    COUNT(e2.employee_id) AS total_employee
FROM employee AS e
INNER JOIN manager AS m ON e.employee_id = m.employee_id
INNER JOIN employee AS e2 ON e.branch_id = e2.branch_id
GROUP BY e.branch_id
ORDER BY e.branch_id;
```

branch_id	manager_name	total_employee
00781	Watana Teerawongpairoj	3
04081	Nitchamon Chamsi	2
04570	Chirawat Boonchai	6
04853	Pakorn Malai	6
14319	Marisa Supasorn	3
15640	Sasima Srijanya	12
16493	Wimonrat Teerawongpairoj	1

- 37) List all names, IDs, date\_of\_birth of employees and customers who were born on Wednesday. Sort by their date of birth ascendingly.

```
SELECT employee_id, firstname, lastname, Date_Of_Birth
FROM employee
WHERE DAYOFWEEK(Date_Of_Birth) = 4
UNION
SELECT customer_id, firstname, lastname, Date_Of_Birth
FROM customer
WHERE DAYOFWEEK(Date_Of_Birth) = 4
ORDER BY Date_Of_Birth;
```

employee_id	firstname	lastname	Date_Of_Birth
0633894	Vichai	Chaipasit	1944-04-19
0633964	Wimonrat	Teerawongpairoj	1965-05-05
204710	Nitchamon	Aworn	2000-04-12
0633167	Nisachon	Thawieng	2001-03-28
143002	Pontapan	Polyiam	2001-11-07



- 38) Find the range of salary of employees ([Min, Max]) of each branch and sort by branch ID ascendingly.

```
SELECT b.branch_id, CONCAT("[",MIN(salary),",",MAX(salary),"]") AS salary_range
FROM branch b
JOIN employee e ON b.branch_id = e.branch_id
GROUP BY branch_id
ORDER BY branch_id;
```

branch_id	salary_range
00781	[23000,35000]
01520	[27000,30000]
04081	[15000,20000]
04570	[20000,35000]
04853	[15000,25000]
10165	[27000,32000]
14319	[18000,25000]
15113	[18000,30000]
15640	[24000,40000]
16493	[25000,25000]

- 39) List all the employees except the employees who are managers.

```
SELECT *
FROM employee
WHERE employee_id NOT IN (SELECT employee_id FROM manager);
```

Employee_ID	Branch_ID	Title	Firstname	Lastname	Phone	Email	Date_Of_Birth	Salary	Modified_Date
0633002	15113	Mrs	Kanokwan	Veeraphan	0656456550	kanokvee@gmail.com	1999-12-25	25000	2021-11-02
0633071	04081	Miss	Sasithorn	Phukan	0855422476	sasithorn.p@hotmail.com	2000-06-01	20000	2019-01-17
0633095	10165	Mr	Natakorn	Chomphoobut	0981455905	natakorn.c@gmail.com	1998-10-15	27000	2017-03-07
0633096	14319	Mrs	Ratha	Sirima	0897425623	ratha.s@hotmail.com	2001-01-01	21000	2021-11-05
0633112	15113	Mr	Jirat	Burat	0956523472	jirat95@gmail.com	1995-01-09	30000	2017-12-01
0633117	04570	Mrs	Tashita	Poya	0872354986	t_poya@hotmail.com	2000-09-09	22500	2020-11-09
0633124	15113	Miss	Rattana	Dungphimai	0983716255	ratana97@gmail.com	1997-12-04	18000	2020-04-18
0633133	01520	Miss	Pitchaya	Teerawongpairoj	0819266322	pitchaya.tee@hotmail.com	2001-12-07	30000	2021-11-20
0633142	10165	Miss	Pimmada	Jantara	0923565423	pj2001@hotmail.com	2001-05-15	28000	2021-06-07
0633159	01520	Mr	Kontawat	Wisetpaitoon	0947585809	kontawat.wis@gmail.com	2002-04-22	30000	2021-11-20
0633166	10165	Mr	Somchai	Panyatip	0929159141	somchai.p@gmail.com	1990-07-13	32000	2017-07-01
0633167	14319	Mrs	Nisachon	Thawieng	0892839079	nisa_chon@hotmail.com	2001-03-28	18000	2021-02-09
0633187	04853	Mr	Chanon	Siribumrung	0984561474	cha.siri@gmail.com	1997-02-14	17500	2019-08-19
0633479	01520	Miss	Titaya	Wisetpaitoon	0863759336	tangmona@gmail.com	2006-04-15	27000	2020-11-19
0633743	00781	Mr	Danaidech	Achsamai	0929312311	danaidech.asi@gmail.com	2000-02-05	35000	2010-12-01
0633794	15640	Miss	Wutichai	Wisetpaitoon	0815834322	wutichai.wis@gmail.com	1972-09-16	30000	2018-02-05
0633894	15640	Mr	Vichai	Chaipasit	0923311132	vichai.chi@hotmail.com	1944-04-19	30000	2021-12-27
0633917	15640	Miss	Pratum	Chaiparsit	0947700055	partum.chi@hotmail.com	1949-12-23	40000	2021-03-09
0649173	15640	Miss	Chayanid	Teerawongpairoj	0815734662	chayanid@hotmail.com	1993-11-26	24000	2020-09-30
0694739	00781	Mr	Sorawit	Teerawongpairoj	0819266321	sorawit@yahoo.com	2000-07-27	23000	2021-09-17

- 40) Find all addresses of both customer and employee where the province is Bangkok.

```
SELECT employee_id, road, sub_district, district, province, post_code
FROM location_employee
WHERE province = "Bangkok"
UNION
SELECT customer_id, road, sub_district, district, province, post_code
FROM location_customer
WHERE province = "Bangkok";
```

employee_id	road	sub_district	district	province	post_code
0633107	Sukhumvit	Phra Khanong	Khlong Toei	Bangkok	10110
0633189	Nakhon Chaisi	Thanon Nakhon Chai Si	Dusit	Bangkok	73120
0633152	Yaowarat	Samphanthawong	Samphanthawong	Bangkok	10100
0633166		Nong Khang Phlu	Nong Khaem	Bangkok	10160
0633257	Rama 3	Bang Phong Phang	Yan Nawa	Bangkok	10120
0633124	Chalermkhet	Pomprap	Pomprap	Bangkok	10100
0633095		Prawet	Prawet	Bangkok	10250
0633794		Saphan Sung	Saphan Sung	Bangkok	10240
0633133	Krung Thep Kritha	Saphan Sung	Saphan Sung	Bangkok	10240
0633196	Rama 3	Bang Phong Phang	Yan Nawa	Bangkok	10120
125031	Phuttha Monthon...	Bang Duan	Phasi Chareon	Bangkok	10160
137510	Phuttha Monthon...	Sala Thammasop	Thawi	Bangkok	10170
143002	Ratchaphruek	Taling Chan	Taling Chan	Bangkok	10170
178001	Ratchaphruek	Taling Chan	Taling Chan	Bangkok	10170
204710	Ratchaphruek	Taling Chan	Taling Chan	Bangkok	10170

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