

**Business domain study and database design (Phase 2)**

(ITCS 241 Database Management Systems)

***Pet shop***

*(Pet Lovers Centre Thailand)*

**Instructor**

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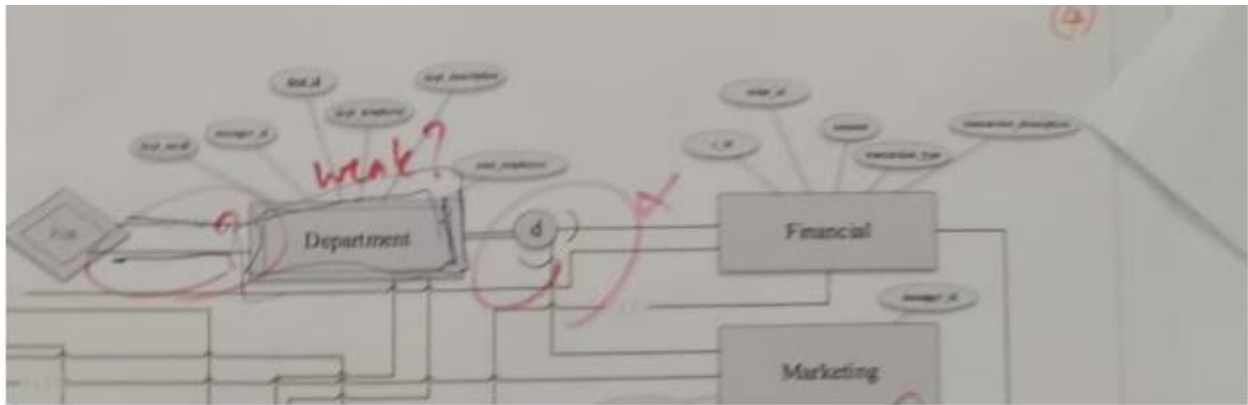
Mr. Teerasit     Wongpa     6088224

**Faculty of Information and Communication Technology**

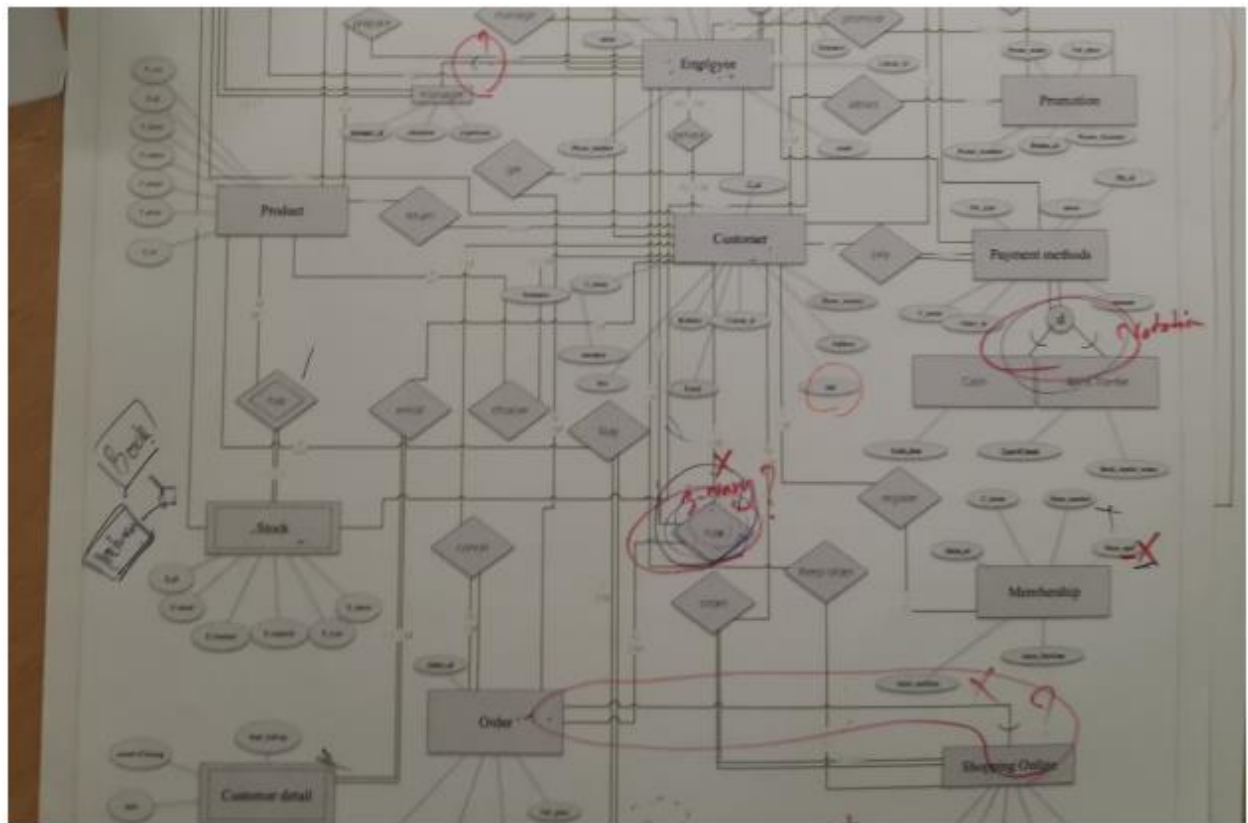
**Mahidol University**

## List of comment & error from project phase 1

Our group have a lot of mistake from project phase 1, first of all is the ER diagram, the mistake was the disjoint overlapping total partial in specialization hierarchy of Department entity. From the past, we had disjoint between financial and Marketing. Change both to a strong entity.

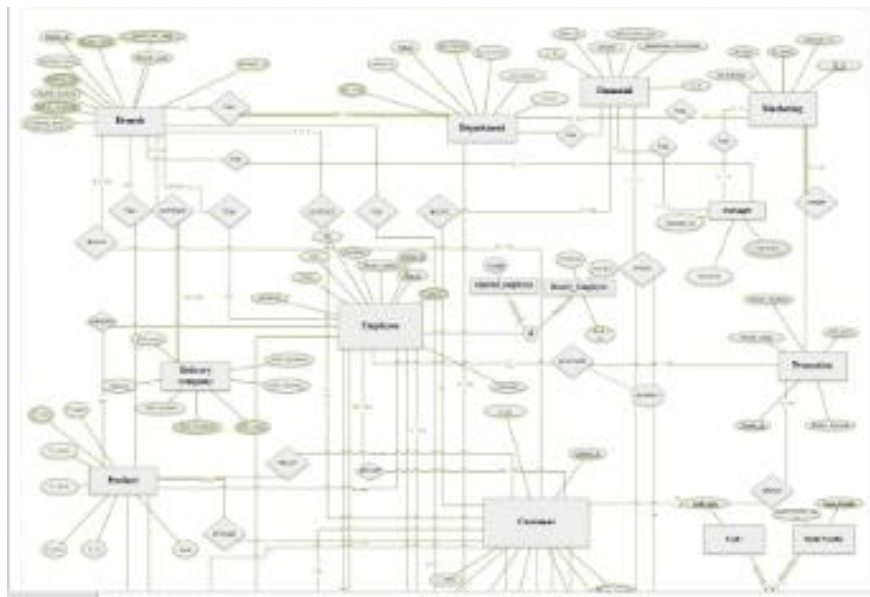
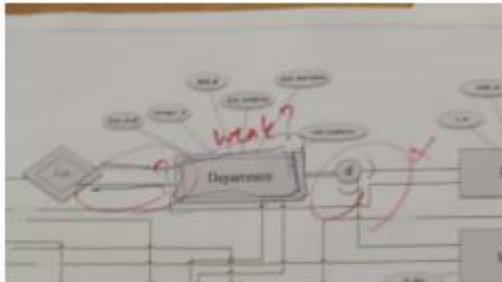


And also, the same case below, in Employee and Order entity, we changed them to strong entities.



Moreover, we add notations to the hierarchy and redraw the new ER diagram to make it easier to see than the old version. Such as the double lines.

Our group had a problem with weak entity, in this case Customer detail and Department cannot become a weak entity. In this case, we changed them to strong entities. And also, the mistake in relation is also spread in term of more connections, and that they both cannot relate to each other.



The second thing in our error from the project phase 1, is the relation schema, we had a little mistake, or error in this part is due to the fact that it came from an update ER diagram

### Relation Schema

Branch									
Branch_id	Branch_name	Branch_location	Branch_tele	Branch_email	Branch_fax	working_hour	working_day	Manager_id	Manager_name

Department						
Dept_id	Dept_telephone	Dept_email	Dept_description	Total_employee	location	Manager_id

Financial					
F_id	Order_id	C_id	Amount	Transaction_type	Transaction_description

Marketing				
M_id	M_name	M_plan	M_duration	Manager_id

Delivery Company						
DM_id	DM_name	DM_openday	DM_openhours	DM_telephone	DM_location	DM_email

Payment Method							
Pm_id	C_name	Order_id	Amount	status	cash_date	type of bank	bank_transfer_status

Employee											
Em_id	citizen_id	firstname	surname	sex	birthday	email	phone_number	wage	check-in	check-out	All_hour

Customer								
C_id	citizen_id	firstname	Birthday	Sex	Birthday	Phone_number	Email	Address

Customer				
Mem_id	c_name	mem_number	Mem_firstdate	Mem_enddate

This of all we gathered from the error, mistakes that had been pointed out in project phase 1 on pet-shop team.

## Functional Dependency

### Table: Branch

Branch\_id  $\rightarrow$  (Branch\_name ,Branch\_location ,Branch\_telephone ,Branch\_email ,Branch\_fax, working\_hour,  
Working\_day, Manager\_id)  
Manager\_id  $\rightarrow$  ( Manager\_name)  
Branch\_name  $\rightarrow$  (Branch\_location,working\_hour,working\_day)

### Table: Department

Dept\_id, Manager\_id  $\rightarrow$  (Dept\_telephone, Dept\_email, Dept\_description, Total\_employee, location)

### Table: Financial

F\_id  $\rightarrow$  (Order\_id, Amount, Transaction\_type, Transction\_description)  
Order\_id, C\_id  $\rightarrow$  (Amount)

### Table: Marketing

M\_id  $\rightarrow$  (M\_name, M\_plan, M\_duration, Manager\_id)

### Table: Delivery Company

DM\_id  $\rightarrow$  (DM\_name, DM\_openday, DM\_openhours, DM\_telephone, DM\_location, DM\_email)

### Table: Payment Method

Pm\_id, C\_Name  $\rightarrow$  (cash\_date, type of bank, bank\_transfer\_status)  
Order\_id  $\rightarrow$  (Amount, status)

### Table: Employee

Em\_id  $\rightarrow$  (email, phone\_number, wage, check-in, check-out, All\_hour)  
Citizen\_id  $\rightarrow$  (firstname, surname, sex, birthday)

### Table: Customer

C\_id  $\rightarrow$  ( Phone\_number, email)  
Citizen\_id  $\rightarrow$  (firstname, surname, sex, birthday, Address)

### Table: Membership

Mem\_id  $\rightarrow$  (mem\_number)  
C\_name  $\rightarrow$  (Mem\_first, Mem\_enddate)

### Table: Promotion

Pro\_id → (Promo\_member, Promo-discount, Promo\_status, Net\_price)

### Table: Customer\_detail

C\_detail\_id → (Start\_selling, Amount of buying, Debt, Mem\_status)

### Table: Product

P\_id → (P\_type, , P\_detail, P\_price,)

S\_id →(P\_name)

### Table: Stock

S\_id → (S\_name, S\_location, S\_capacity, S\_type, S\_status)

### Table: Order

Order\_id → (Order\_date, Order\_last, Net\_price, Order\_status)

### Table: Shopping Online

SO\_id → (C\_id, C\_name, Order\_id,)

PM\_id →(pay\_status)

### Table: Shelf

SO\_id → (C\_name, Shelf\_startday, Shelf\_endday)

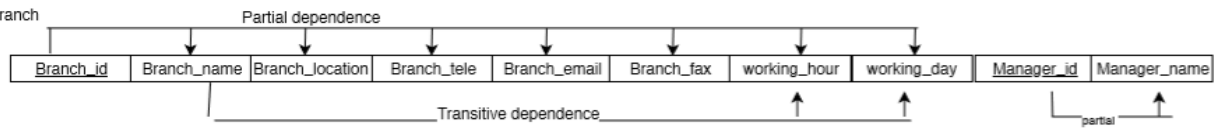
P\_id →(P\_name,P\_type)

### Table: Manager

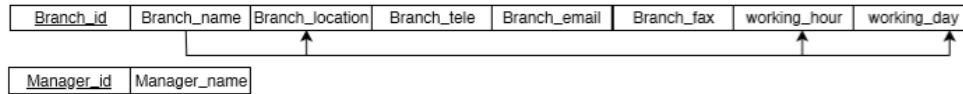
Manager\_id → (Education, Experience, workplace, work\_hours)

## Proof of database normalization

Table : Branch



2NF



3NF

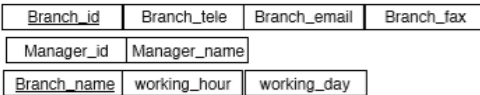
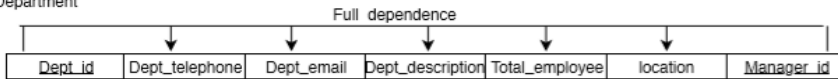


Table : Department



1NF

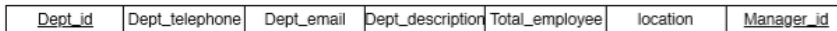
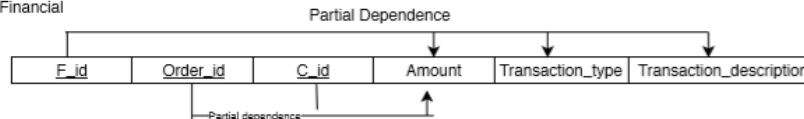


Table : Financial



2NF

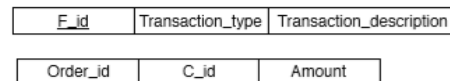


Table: Marketing



1NF

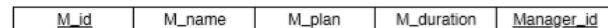


Table: Delivery Company



1NF

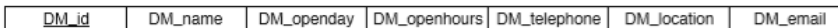
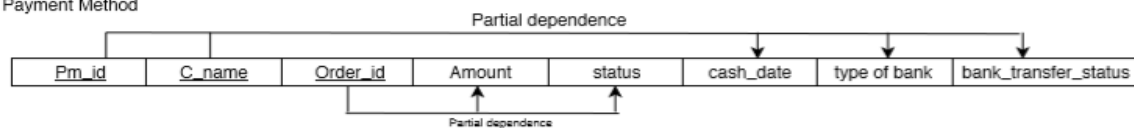


Table : Payment Method



NF2

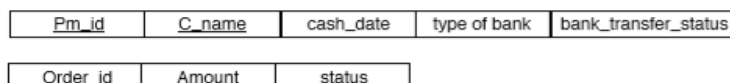
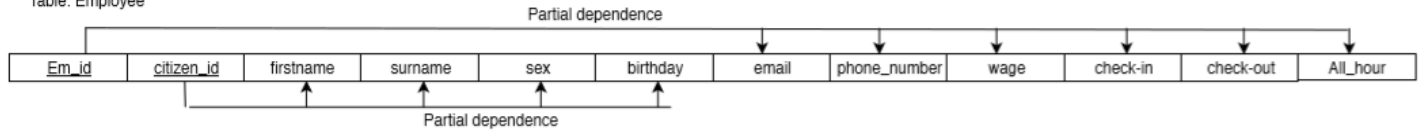


Table: Employee



2NF

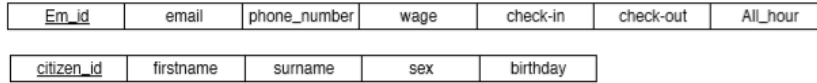
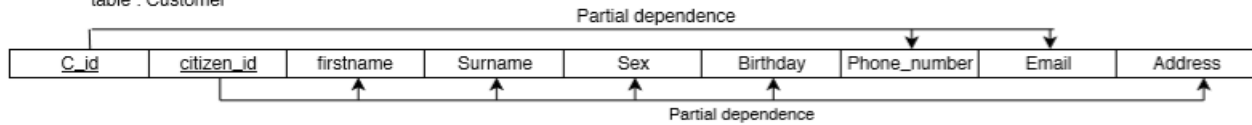


table : Customer



2NF

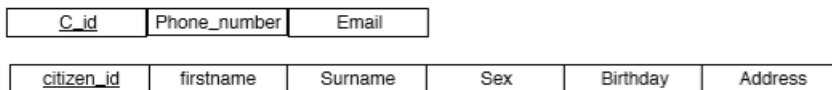
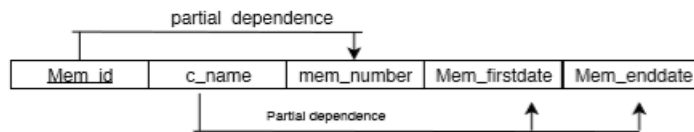


table: Membership



2NF

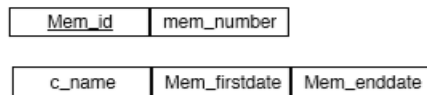


table: Promotion



1NF

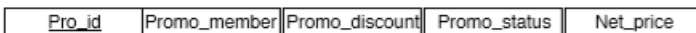


table: Customer\_detail



1NF

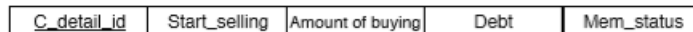
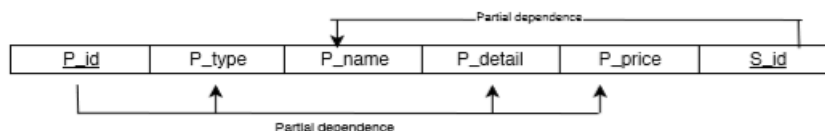


table : product



2NF

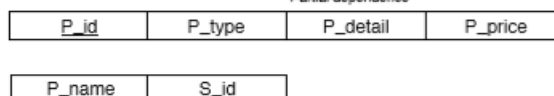
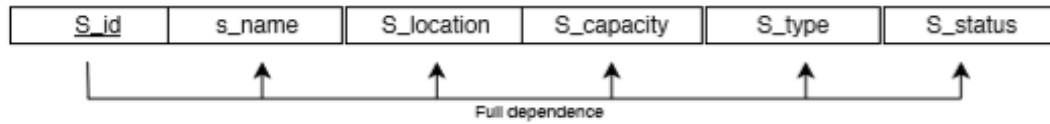




table: Stock



1NF

<u>S_id</u>	s_name	S_location	S_capacity	S_type	S_status
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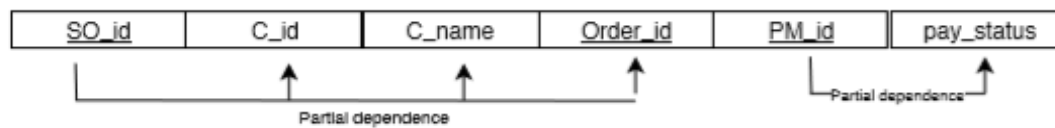
table: Order



1NF

<u>Order_id</u>	Order_date	Order_last	Net_price	Order_status
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Table: Shopping Online

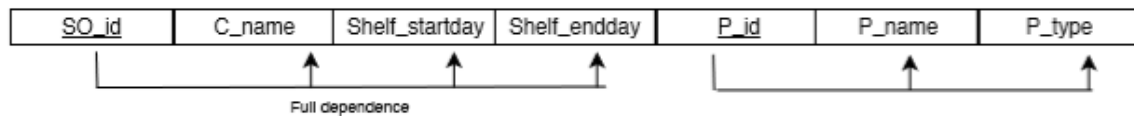


2NF

<u>SO_id</u>	C_id	C_name	Order_id
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<u>PM_id</u>	pay_status
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Table: Shelf

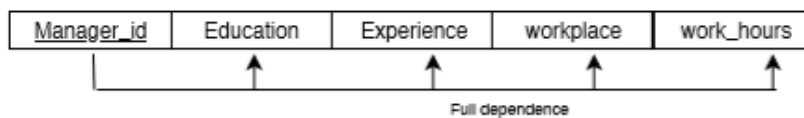


2NF

<u>SO_id</u>	C_name	Shelf_startday	Shelf_endday
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<u>P_id</u>	P_name	P_type
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Table : Manager



1NF

<u>Manager_id</u>	Education	Experience	workplace	work_hours
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