資料庫管理 HW03

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1. (a) Left join all advisors(e) and their advisees(s), if someone has no advisee, then s would be NULL.

```sql
select e.id, e.name from employee as e
left join employee s on e.id=s.supervisor_id
where s.supervisor_id is null;
```

(b) Find the latest store id of each employee before 2025-01-05 and left join to the employee table.

```sql
select e.id as employee_id, h.store_id
from employee e
left join employee_store_history h
on e.id = h.employee_id
and h.start_date_time=(
    select max(h2.start_date_time)
    from employee_store_history h2
    where h2.employee_id = e.id
        and h2.start_date_time <= '2025-01-05'
    );
```

(c) Using `limit 1` to obtain the first store id and `limit 1 offset 1` to obtain the second store id (after skipping the first one), then join them to produce the final result.

```sql
select e.id as employee_id,
    (select h1.store_id from employee_store_history h1 where h1.employee_id=e.id order by
    ↪  h1.start_date_time limit 1) as first_store_id,
    (select h2.store_id from employee_store_history h2 where h2.employee_id=e.id order by
    ↪  h2.start_date_time limit 1 offset 1) as second_store_id
from employee e;
```

(d) Calculating the total quantity purchased for each product, then ordering by total quantity and product_id, using `limit 2 offset 3` to find the 4th and 5th products. Finally, joining with purchase_detail and purchase tables to get the required information.

```sql
with total_qty as(
    select pd.product_id as product_id, sum(pd.qty) as total_qty, count(*) as purchase_count
    from purchase_detail pd
```

```
    group by pd.product_id
),
target_product as(
    select product_id
    from total_qty
    order by total_qty desc, product_id asc
    limit 2 offset 3
)
select p.id as product_id, p.name as product_name, pu.store_id as store_id, count(*) as
↪  purchase_count, sum(pd.qty) as total_qty
from target_product tp
join product p on tp.product_id = p.id
join purchase_detail pd on pd.product_id = p.id
join purchase pu on pd.purchase_no = pu.purchase_no
group by p.id, p.name, pu.store_id
order by p.id, pu.store_id;
```