数据库原理CH4作业

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P179-4.18

For the database of Figure 4.12, write a query to find the ID of each employee with no manager. Note that an employee may simply have no manager listed or may have a null manager. Write your query using an outer join and then write it again using no outer join at all.

```
select ID
from employee
left outer join manages
where manager_id is null;
```

```
select ID
from employee
where ID not in
(select ID
from manages
manager_id is not null);
```

P179-4.20

Show how to define a view tot_credits (year, num_credits), giving the total number of credits taken in each year.

```
create view tot_credits(year,num_credits) as
select year,sum(credits)
from takes natural join course
group by year;
```

P179-4.24

Suppose user A, who has all authorization privileges on a relation r, grants select on relation r to public with grant option. Suppose user B then grants select on r to A. Does this cause a cycle in the authorization graph? Explain why.

```
会导致环，A->public->B->A
```