

# 数据库理论作业(第四章)

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## 4.12

解：

使用外连接的查询：

```
select employee_name
from employee natural left outer join manages
where manager name is null
```

不使用外连接的查询：

```
select employee_name
from employee
where employee_name in (
select employee_name from manages
where manager_name is null
)
```

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## 4.14

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

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## 4.18

答：会。因为A将查询权限和授予查询权限的权限授予public后，public将会授权给B，最后B又将其授权回A，这样便在授权图中形成了一个环：A -> public，public -> B，B -> A。