

16337341(朱志儒)数据库系统作业 2

4.12 使用外连接:

```
SELECT employee_name
FROM employee NATURAL LEFT OUTER JOIN manages
WHERE manager_name IS NULL;
```

不使用外连接:

```
SELECT employee_name
FROM employee
WHERE employee_name NOT IN (SELECT employee_name
    FROM employee NATURAL JOIN manages
    WHERE manager_name IS NOT NULL);
```

4.14

```
CREATE VIEW tot_credits(year, num_credits) AS
SELECT year, SUM(credits)
FROM student NATURAL JOIN takes NATURAL JOIN course
GROUP BY year;
```

4.16

a.

```
CREATE ASSERTION name_constraint CHECK
    (NOT EXISTS (SELECT *
        FROM address
        WHERE name NOT IN ((
            SELECT name
            FROM salaried_worker)
        UNION
        (SELECT name
            FROM hourly_worker)))));
```

b. 为使这种形式的约束生效, 系统不仅在 address 中插入或修改元组时必须检测该条件, 而且在 salaried_worker 或 hourly_worker 关系改变时也必须检测该条件。

4.18 因为拥有所有权限的 A 把关系 r 上的查询权限以及授予该权限的权限授予

了 public，此时 B 又把该权限授予 A，所以 A、B、public 都有查询权限以及授予该权限的权限，此时形成回路。但如果管理员收回 A 的所有权限，那么 B、public 都将失去查询权限以及授予该权限的权限。

5.12 Java 程序功能：查找雇员名字为“dog”的经理。

5.16

```
WITH dept_count(d_name, d_count) AS
  (SELECT dept_name, COUNT(ID)
   FROM instructor
   GROUP BY dept_name)
SELECT dept_name, budget
FROM department
WHERE dept_name = dept_count.d_name AND dept_count.d_count > 12;
```

5.19

```
WITH RECURSIVE ppart(part_id, subpart_id) AS (
  SELECT part_id, subpart_id
  FROM subpart
  UNION
  SELECT ppart.part_id, subpart.subpart_id
  FROM ppart, subpart
  WHERE ppart.subpart_id = subpart.part_id
)
SELECT subpart_id
FROM ppart
WHERE part_id = 'P-100';
```

5.28

```
WITH max_balance(value) AS
  (SELECT MAX(balance)
   FROM account)
SELECT COUNT(balance) OVER (PARTITION BY RANGE(balance) (
  PARTITION P0 VALUES LESS THAN(max_balance.value * 1 / 3),
  PARTITION P1 VALUES LESS THAN(max_balance.value * 2 / 3),
```

```
    PARTITION P2 VALUES LESS THAN(max_balance.value)
))
FROM account;
```