

## 4.7

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```
create table employee
(employee_name varchar(15),
street varchar(20),
city varchar(20),
primary key (employee_name));
```

```
create table works
(employee_name varchar(15),
company_name varchar(20),
salary int,
primary key (employee_name),
foreign key employee_name references employee(employee_name),
foreign key company_name references company(company_name));
```

```
create table company
(company_name varchar(20),
city varchar(20),
primary key (company_name));
```

```
create table manages
(employee_name varchar(15),
manager_name varchar(15),
primary key (employee_name),
foreign key employee_name references employee(employee_name),
foreign key manager_name references employee(employee_name));
```

## 4.9

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**All the tuples containing subordinate employees** of the manager in that deleted tuple could be deleted. At first, the tuples containing the subordinate of the manager in that deleted tuple are deleted. Then the process goes on and more subordinates are deleted until all the subordinates are deleted.

## 4.12

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**With outer join:**

```
select employee_name
from employee natural left outer join manages
where manager_name is null;
```

**Without outer join:**

[illegible]