数据库实验报告 1

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实验1 数据查询和更新

1. 找出所有客户、代理商和商品都在同一城市的三元组（cid, aid, pid）。

```
select cid, aid, pid
from agents,
     customers,
     products
where agents.city = customers.city
  and customers.city = products.city;
```

2. 找出所有客户、代理商和商品不都在同一城市（可能有两个在同一城市）的三元组（cid, aid, pid）。

```
select cid, aid, pid
from agents,
     customers,
     products
where agents.city != customers.city
   or customers.city != products.city;
```

3. 找出所有在同一城市的代理商的aid对。

```
select first.aid, second.aid
from agents first,
     agents second
where first.city = second.city
  and first.aid != second.aid;
```

4. 找出同时订购了商品p01和p07的客户的cid值。（若找出客户的cname呢？）

```
select orders.cid, cname
from orders,
     customers
where orders.pid = 'p01'
    intersect
select orders.cid, cname
from orders,
     customers
where orders.pid = 'p07';
```

5. 统计各个产品的销售总量。

```sql
select pid, sum(qty)
from orders
group by pid;
```

6. 当某个代理商所订购的某样产品的总量超过1000时，打印出所有满足条件的产品和代理商的ID以及这个总量。

```sql
select pid, aid, sum(qty)
from orders
group by pid, aid
having sum(qty) > 1000;
```

7. 找出订购了产品p05的顾客的名字。

```sql
select distinct cname
from customers,
     orders
where orders.pid = 'p05'
  and customers.cid = orders.cid;
```

8. 检索满足以下条件的顾客-代理商的姓名对（cname,aname）,其中的顾客cname通过代理商aname订了货。

```sql
select cname, aname
from orders,
     customers,
     agents
where customers.cid = orders.cid
  and agents.aid = orders.aid;
```

9. 找出至少被两个顾客订购的产品的pid值。

```sql
select distinct pid
from orders
where pid in (select pid from orders group by pid having count(pid) > 1)
```

10. 在customers表中插入一个新行。

```sql
insert into customers(cid, cname, city)
values ('c007', 'WinDix', 'Dallas');
```

11. 检索customers表中discnt值为空的行。

```sql
select*
from customers
where discnt is null
```

12. 检索客户以及他们订购商品的详细信息。（用外联接）

```sql
select customers.cid,
       cname,
       city,
       discnt,
       ordno,
       month,
       aid,
       pid,
       qty,
       dollars
from customers
         left outer join orders on (customers.cid = orders.cid)
```

13. 检索有关住在Duluth或Dallas的代理商的所有信息。（要求使用IN谓词实现）

```sql
select*
from agents
where city in ('Duluth', 'Dallas')
```

14. 找出通过住在Duluth或Dallas的代理商订货的所有顾客的姓名和折扣率。（要求使用IN谓词实现）

```sql
select cname, discnt
from customers,
     orders
where customers.cid = orders.cid
  and orders.aid in (select aid
                     from agents
                     where city in ('Duluth', 'Dallas'))
```

15. 求所有满足以下条件的顾客的cid值：该顾客的discnt的值小于任一住在Duluth的顾客的discnt值。

```sql
select cid
from customers
where discnt < any (select discnt
                    from customers
                    where city = 'Duluth')
```

16. 检索没有通过代理商a05订货的所有顾客的名字。
    提示：可以使用not in 或 <>all方式实现。

```sql
select cname
from customers,
     orders
where customers.cid = orders.cid
  and aid <> 'a05'
```

17. 检索一个包含顾客所在的或者代理商所在的城市的名称。（使用UNION实现）

```sql
select city
from customers
union
select city
from agents
```

18. 在orders表中插入一个新行。

```
insert into orders(ordno, month, cid, aid, pid)
values (1107, 'aug', 'c006', 'a04', 'p01');
```

19. 创建一个名为swcusts的表，它包含住在西南部的所有顾客，并向该表中插入所有来自Dallas或Austin的顾客。

```
insert into swcusts
select *
from customers
where city in ('Dallas', 'Austin');
```

20. 将所有住在New York的代理商的佣金率提高10%。

```
update agents
set per=per * 1.1
where city = 'New York'
```

21. 删除所有住在New York的代理商。

```
delete
from agents
where city = 'New York'
```

22. 创建一个agentorders视图，它扩展了表orders的行，包括订货的代理商的详细信息。

```
create view agentorders
as
select ordno,
       month,
       cid,
       orders.aid,
       pid,
       qty,
       dollars,
       aname,
       city,
       per
from orders,
     agents
where orders.aid = agents.aid;
```

23. 利用agentorders视图查询代理商Brown的所有订单信息

```
select ordno, motn, cid, pid, qty, dollars
from agentorders
where aname = 'Brown';
```

24. 创建cacities视图，该视图列出表customers和表agents中所有配对的城市，其中该顾客通过该代理商订购了商品。

```
create view cacities(cid.cname, city, discnt, aid, aname, per)
```

```
as
select customers.cid,
       cname,
       customers.city,
       discnt,
       agents.aid,
       aname,
       per
from agents,
     customers,
     orders
where agent.aid = orders.aid
  and customers.cid = orders.cid
  and agents.city = customers.city
```

25. 创建custs视图

```
create view custs as
select *
from customers
where discnt <= 15.0
with check option;
```

26. 对custs视图进行更新操作。

```
update custs set discnt=discnt+4;
```