构建音乐商店NetMusicShop，并实现复杂查询

1、查找收藏歌曲在2首及以上的用户及其收藏的歌曲数

```
3 ●    SELECT Users.UserRealName ,COUNT(Collections.UserName) AS '收藏的歌曲数'
4      FROM users,collections
5      WHERE users.username=collections.username
6      GROUP BY collections.username
7      HAVING count(collections.username)>=2;
```
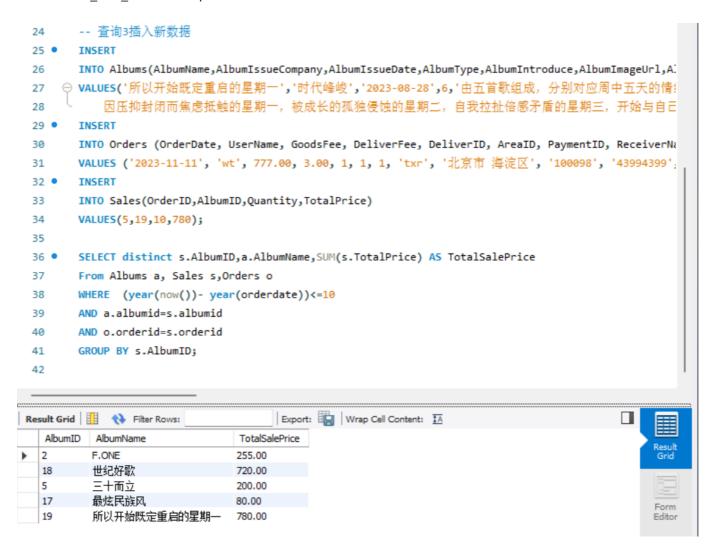
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

UserRealName	收藏的歌曲数
王彤	2
王亦宏	5

2、查找所包含的歌曲数大于等于10首的专辑，显示专辑名和所包含的歌曲数

```
9 ●    SELECT AlbumName,count(songs.AlbumID) AS '包含歌曲数'
10     FROM Albums,songs
11     WHERE albums.albumid=songs.albumid
12     GROUP BY albumname
13     HAVING count(songs.AlbumID)>=10;
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

AlbumName	包含歌曲数
F.ONE	10

3、查找最近10年来（now（））的专辑销售情况，列出专辑ID、专辑名称、总销售额，按总销售从高到低排名。

```sql
24      -- 查询3插入新数据
25  ●   INSERT
26      INTO Albums(AlbumName,AlbumIssueCompany,AlbumIssueDate,AlbumType,AlbumIntroduce,AlbumImageUrl,A1
27  ⊖   VALUES('所以开始既定重启的星期一','时代峰峻','2023-08-28',6,'由五首歌组成，分别对应周中五天的情
28          因压抑封闭而焦虑抵触的星期一，被成长的孤独侵蚀的星期二，自我拉扯倍感矛盾的星期三，开始与自己
29  ●   INSERT
30      INTO Orders (OrderDate, UserName, GoodsFee, DeliverFee, DeliverID, AreaID, PaymentID, ReceiverNa
31      VALUES ('2023-11-11', 'wt', 777.00, 3.00, 1, 1, 1, 'txr', '北京市 海淀区', '100098', '43994399'
32  ●   INSERT
33      INTO Sales(OrderID,AlbumID,Quantity,TotalPrice)
34      VALUES(5,19,10,780);
35
36  ●   SELECT distinct s.AlbumID,a.AlbumName,SUM(s.TotalPrice) AS TotalSalePrice
37      From Albums a, Sales s,Orders o
38      WHERE  (year(now())- year(orderdate))<=10
39      AND a.albumid=s.albumid
40      AND o.orderid=s.orderid
41      GROUP BY s.AlbumID;
42
```

AlbumID	AlbumName	TotalSalePrice
2	F.ONE	255.00
18	世纪好歌	720.00
5	三十而立	200.00
17	最炫民族风	80.00
19	所以开始既定重启的星期一	780.00

4、查询没有被收藏过的歌曲

```sql
43      -- 查询4
44  ●   SELECT *
45      FROM Songs
46      WHERE SongID NOT IN
47  ⊖   (SELECT SongID
48      FROM Collections);
49
```

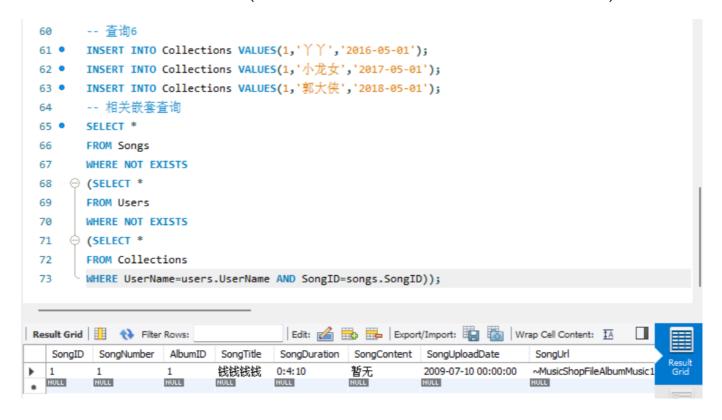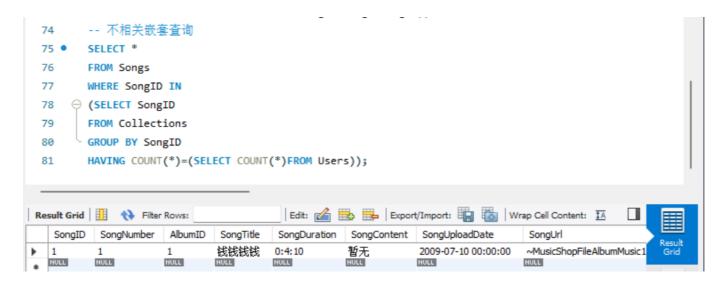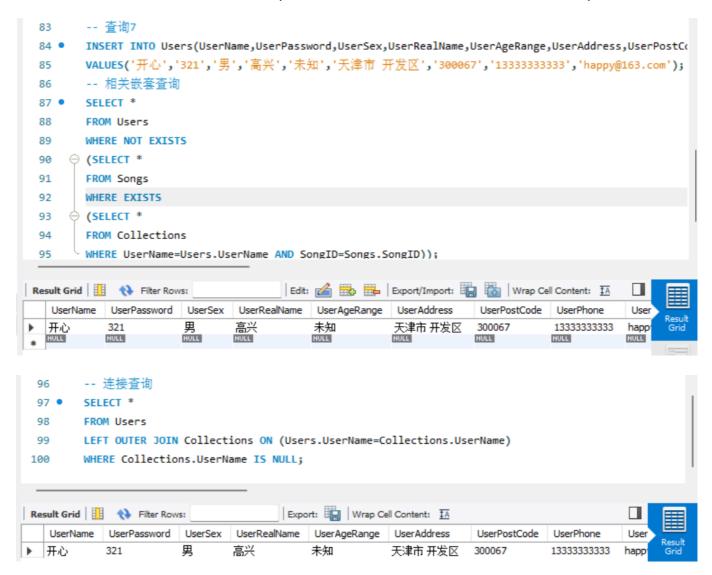| SongID	SongNumber	AlbumID	SongTitle	SongDuration	SongContent	SongUploadDate	SongUrl
6	1	2	1到10=我和你	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
7	2	2	想知道现在你好不好	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
8	3	2	起风	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
9	4	2	灰色的彩虹	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
10	5	2	傻的可以	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
11	6	2	对不起	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
12	7	2	别再生了	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
13	8	2	没把握	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
14	9	2	爱的盲点	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
15	10	2	微笑说再见	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFile
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5、在购买了歌手刘欢专辑的客户中查询一次购买数量最多的客户的用户名

```
43        -- 查询5
44 ●      INSERT
45        INTO Albums(AlbumName,AlbumIssueCompany,AlbumIssueDate,AlbumType,AlbumIntroduce,AlbumImageUrl,A
46        VALUES('经典20年','上海新索音乐','2004-08-23',6,'本专辑精心挑选了15首刘欢历年被广为传唱的经典代
47 ●      INSERT
48        INTO Orders (OrderDate, UserName, GoodsFee, DeliverFee, DeliverID, AreaID, PaymentID, ReceiverNa
49        VALUES ('2022-08-23', 'YY', 180, 3.00, 1, 1, 1, 'ny', '北京市 朝阳区', '100024', '99439943',
50 ●      INSERT
51        INTO Sales(OrderID,AlbumID,Quantity,TotalPrice)
52        VALUES(6,20,3,183);
53
54 ●      SELECT UserName
55        FROM orders,sales,albums
56        WHERE orders.OrderID=sales.OrderID AND albums.AlbumID=sales.AlbumID AND albums.AlbumSinger="刘欢
57        GROUP BY UserName
58        HAVING MAX(Quantity);
```

	UserName
▶	YY

6、查找被所有用户收藏的歌曲（两种实现方式：相关嵌套查询、不相关嵌套查询）

```
60        -- 查询6
61 ●      INSERT INTO Collections VALUES(1,'YY','2016-05-01');
62 ●      INSERT INTO Collections VALUES(1,'小龙女','2017-05-01');
63 ●      INSERT INTO Collections VALUES(1,'郭大侠','2018-05-01');
64        -- 相关嵌套查询
65 ●      SELECT *
66        FROM Songs
67        WHERE NOT EXISTS
68 ⊖     (SELECT *
69        FROM Users
70        WHERE NOT EXISTS
71 ⊖     (SELECT *
72        FROM Collections
73        WHERE UserName=users.UserName AND SongID=songs.SongID));
```

	SongID	SongNumber	AlbumID	SongTitle	SongDuration	SongContent	SongUploadDate	SongUrl
▶	1	1	1	钱钱钱钱	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFileAlbumMusic1
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
74        -- 不相关嵌套查询
75 •     SELECT *
76        FROM Songs
77        WHERE SongID IN
78     ⊖ (SELECT SongID
79       │ FROM Collections
80       └ GROUP BY SongID
81        HAVING COUNT(*)=(SELECT COUNT(*)FROM Users));
```

SongID	SongNumber	AlbumID	SongTitle	SongDuration	SongContent	SongUploadDate	SongUrl
1	1	1	钱钱钱钱	0:4:10	暂无	2009-07-10 00:00:00	~MusicShopFileAlbumMusic1
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

7、查找一首歌曲都没有收藏的用户（两种实现方式：相关嵌套查询、连接查询）

```
83        -- 查询7
84 •     INSERT INTO Users(UserName,UserPassword,UserSex,UserRealName,UserAgeRange,UserAddress,UserPostCo
85        VALUES('开心','321','男','高兴','未知','天津市 开发区','300067','13333333333','happy@163.com');
86        -- 相关嵌套查询
87 •     SELECT *
88        FROM Users
89        WHERE NOT EXISTS
90     ⊖ (SELECT *
91        FROM Songs
92        WHERE EXISTS
93     ⊖ (SELECT *
94        FROM Collections
95       └ WHERE UserName=Users.UserName AND SongID=Songs.SongID));
```

UserName	UserPassword	UserSex	UserRealName	UserAgeRange	UserAddress	UserPostCode	UserPhone	User
开心	321	男	高兴	未知	天津市 开发区	300067	13333333333	happy
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
96        -- 连接查询
97 •     SELECT *
98        FROM Users
99        LEFT OUTER JOIN Collections ON (Users.UserName=Collections.UserName)
100       WHERE Collections.UserName IS NULL;
```

UserName	UserPassword	UserSex	UserRealName	UserAgeRange	UserAddress	UserPostCode	UserPhone	User
开心	321	男	高兴	未知	天津市 开发区	300067	13333333333	happ

*附sql代码

```
USE netmusicshop;

-- 查询1
```

```sql
SELECT Users.UserRealName ,COUNT(Collections.UserName) AS '收藏的歌曲数'
FROM users,collections
WHERE users.username=collections.username
GROUP BY collections.username
HAVING count(collections.username)>=2;


-- 查询2
SELECT AlbumName,count(songs.AlbumID) AS '包含歌曲数'
FROM Albums,songs
WHERE albums.albumid=songs.albumid
GROUP BY albumname
HAVING count(songs.AlbumID)>=10;


-- 查询3
INSERT
INTO
Albums(AlbumName,AlbumIssueCompany,AlbumIssueDate,AlbumType,AlbumIntroduce,AlbumImageUrl,AlbumSinger,AlbumLanguage,AlbumMarketPrice,AlbumMemberPrice,AlbumIsRecommend)
VALUES('所以开始既定重启的星期一','时代峰峻','2023-08-28',6,'由五首歌组成，分别对应周中五天的情绪。
    因压抑封闭而焦虑抵触的星期一，被成长的孤独侵蚀的星期二，自我拉扯倍感矛盾的星期三，开始与自己和解的星期四，充满期待的星期五。',NULL,'马嘉祺','汉语普通话',99,77,1);

INSERT
INTO Orders (OrderDate, UserName, GoodsFee, DeliverFee, DeliverID, AreaID,
PaymentID, ReceiverName, ReceiverAddress, ReceiverPostCode, ReceiverPhone,
ReceiverEmail, OrderIsPayment, OrderIsConsignment, OrderIsConfirm,
OrderIsPigeonhole)
VALUES ('2023-11-11', 'wt', 777.00, 3.00, 1, 1, 1, 'txr', '北京市 海淀区',
'100098', '43994399', NULL, 1, 1, 1, 1);

INSERT
INTO Sales(OrderID,AlbumID,Quantity,TotalPrice)
VALUES(5,19,10,780);

SELECT distinct s.AlbumID,a.AlbumName,SUM(s.TotalPrice) AS TotalSalePrice
From Albums a, Sales s,Orders o
WHERE  (year(now())- year(orderdate))<=10
AND a.albumid=s.albumid
AND o.orderid=s.orderid
GROUP BY s.AlbumID;


-- 查询4
SELECT *
FROM Songs
WHERE SongID NOT IN(
SELECT SongID
FROM Collections);
```

```
-- 查询5
INSERT
INTO
Albums(AlbumName,AlbumIssueCompany,AlbumIssueDate,AlbumType,AlbumIntroduce,AlbumIm
ageUrl,AlbumSinger,AlbumLanguage,AlbumMarketPrice,AlbumMemberPrice,AlbumIsRecommen
d)
VALUES('经典20年','上海新素音乐','2004-08-23',6,'本专辑精心挑选了15首刘欢历年被广为传唱
的经典代表作',NULL,'刘欢','汉语普通话',80,60,1);

INSERT
INTO Orders (OrderDate, UserName, GoodsFee, DeliverFee, DeliverID, AreaID,
PaymentID, ReceiverName, ReceiverAddress, ReceiverPostCode, ReceiverPhone,
ReceiverEmail, OrderIsPayment, OrderIsConsignment, OrderIsConfirm,
OrderIsPigeonhole)
VALUES ('2022-08-23', '丫丫', 180, 3.00, 1, 1, 1, 'ny', '北京市 朝阳区', '100024',
'99439943', NULL, 1, 1, 1, 1);

INSERT
INTO Sales(OrderID,AlbumID,Quantity,TotalPrice)
VALUES(6,20,3,183);

SELECT UserName
FROM orders,sales,albums
WHERE orders.OrderID=sales.OrderID AND albums.AlbumID=sales.AlbumID AND
albums.AlbumSinger="刘欢"
GROUP BY UserName
HAVING MAX(Quantity);


-- 查询6
INSERT INTO Collections VALUES(1,'丫丫','2016-05-01');
INSERT INTO Collections VALUES(1,'小龙女','2017-05-01');
INSERT INTO Collections VALUES(1,'郭大侠','2018-05-01');

-- 相关嵌套查询
SELECT *
FROM Songs
WHERE NOT EXISTS
(SELECT *
FROM Users
WHERE NOT EXISTS
(SELECT *
FROM Collections
WHERE UserName=users.UserName AND SongID=songs.SongID));

-- 不相关嵌套查询
SELECT *
FROM Songs
WHERE SongID IN
(SELECT SongID
FROM Collections
GROUP BY SongID
HAVING COUNT(*)=(SELECT COUNT(*)FROM Users));
```

```sql
-- 查询7
INSERT INTO
Users(UserName,UserPassword,UserSex,UserRealName,UserAgeRange,UserAddress,UserPost
Code,UserPhone,UserEmail)
VALUES('开心','321','男','高兴','未知','天津市 开发
区','300067','13333333333','happy@163.com');

-- 相关嵌套查询
SELECT *
FROM Users
WHERE NOT EXISTS
(SELECT *
FROM Songs
WHERE EXISTS
(SELECT *
FROM Collections
WHERE UserName=Users.UserName AND SongID=Songs.SongID));

-- 连接查询
SELECT *
FROM Users
LEFT OUTER JOIN Collections ON (Users.UserName=Collections.UserName)
WHERE Collections.UserName IS NULL;
```