数据库原理(2020-2021-3)

标准答案与评分标准

1.数据冗余会造成存储浪费，造成数据不一致，带来版本控制问题。5‘
数据冗余的优点有：对数据库恢复，数据冗余是必须的。5‘
2.

	主键	外键
sailors	Sid 1‘	Master 2‘
boats	Bid 1‘	
reserves	Sid，day 3‘	Sid, bid 每个 1.5‘

3.（答案不唯一）

（1）	SELECT sailors.sname, reserves.day FROM sailors INNER JOIN reserves ON reserves.sid = sailors.sid WHERE reserves.bid = '106'; 或 SELECT sailors.sname, reserves.day FROM sailors，Reserves Where reserves.sid = sailors.sid and reserves.bid = '106'; 等价形式均可
（2-1）	SELECT sailors.sname FROM sailors，**(SELECT reserves.sid FROM reserves，boats where reserves.bid=boats.bid and boats.color='red' GROUP BY sid HAVING count(*)>1)** AS t1 where t1.sid = sailors.sid
（2-2）	SELECT sname FROM sailors WHERE sid in (select sid from reserves X, boats where reserves.bid=boats.bid and color=’red’ and exists(select * from reserves, boats where reserves.bid=boats.bid and color=’red’ and sid=X.sid and day!=X.day)); **注：写法不唯一，但两种写法都采用 Group by 子句，写的均正确，亦需扣 1-2 分。**
3	预定过所有蓝色船只的水手 Select DISTINCT s.sid from reserves,boats Where reserves.bid=boats.bid and color=’blue’ Group by sid Having count(distinct bid)=(select count(*) from boats where color=’blue’);
4	SELECT sailors.rating, max(t.c)

	FROM (SELECT sid, count(*) AS c FROM reserves GROUP BY sid) AS t, sailors where t.sid=sailors.sid GROUP BY sailors.rating

4.

C 版本核心部分

Declare Cursor CR1
As
select reserves.bid, reserves.day, boats.bname from reserves, boats where reserves.bid=boats.bid and sid=:id and bid= :bid
…
Open cursor CR1
While(true)
{
…
Fetch … into…
…
}
Close CR1
需要有定义游标，打开游标，取数，关闭游标的语句，核心语句不全的，逐条扣 1-2 分！

Java 版核心部分

```
Report(int id){
    //建立数据库连接 …
    String sql =…..
    Statement.executeSql(sql);
}
```

需要有传递水手编号、船编号参数的语句；实例化 resultset 类的语句，以及逐条处理数据的语句！
核心语句不全的，逐条扣 1-2 分！

5.

Create trigger checkReserves
Before insert on reserves (Before 3')
Referencing New as N
For each row
When (GetMon(N.say) in {7,8}) and (N.sid not in (select sid from reserves group by sid having count(*)>9))
Rollback.

6.

（1）Checkpoint 用于数据库发生系统失效时，避免大量的无效 redo。
（2）可以减少，具体与取 CP 的周期有关。

（3）取后备副本后可以清空。

7.

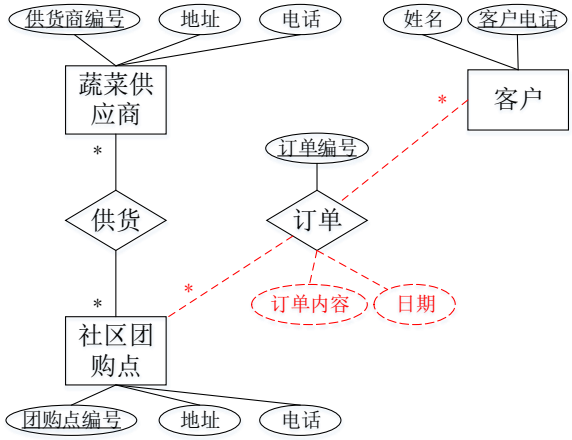
（1）并发事务的正确性准则是可串行性。

（2）S 和 U 锁相容，可以提高并发度；U 和 U 锁相容，造成死锁。

（3）从降低管理锁代价角度，（S,X）锁更好

8.

(1)



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