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1. 在新数据库中新建一张 user 表, 插入几条数据, 属性包含: 唯一标识(id), 姓名(name) 性别(sex). 年龄(age). 联系方式(phone), 数据如下:

```
('John Doe', 'Male', 25, '123-456-7890')
('Jane Smith', 'Female', 31, '987-654-3210')
('Bob Johnson', 'Male', 22, '555-123-4567')
```

```
mysql> CREATE DATABASE testdb;
Query OK, 1 row affected (0.00 sec)
```

```
mysql> CREATE TABLE Persons (
->   id INT,
->   name VARCHAR(255),
->   sex VARCHAR(255),
->   age INT,
->   phone CHAR(15)
-> );
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> INSERT INTO Persons VALUES (1, 'John Doe', 'Male', 25, '123-456-7890');
INSERT INTO Persons VALUES (2, 'Jane Smith', 'Female', 31, '987-654-3210');
mysql> INSERT INTO Persons VALUES (3, 'Bob Johnson', 'Male', 22, '555-123-4567');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> SELECT * FROM Persons;
```

id	name	sex	age	phone
1	John Doe	Male	25	123-456-7890
2	Jane Smith	Female	31	987-654-3210
3	Bob Johnson	Male	22	555-123-4567

3 rows in set (0.00 sec)

2. 写出 SQL 语句, 查询 user 表中所有年龄在 20-30 范围内的用户

```
mysql> SELECT *
-> FROM Persons
-> WHERE age >= 20 AND age <= 30;
```

id	name	sex	age	phone
1	John Doe	Male	25	123-456-7890
3	Bob Johnson	Male	22	555-123-4567

2 rows in set (0.00 sec)

3. 写出SQL语句, 向user表中添加自己的个人信息, 并添加几条和你姓名同姓的虚拟信息。

```
mysql> INSERT INTO Persons VALUES (4, 'Jiaxinyu', 'Female', 19, '177-841-4786');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO Persons VALUES (5, 'Jiagyu', 'Male', 29, '177-781-4786');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO Persons VALUES (6, 'Jiahanggyu', 'Male', 27, '177-672-4986');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> SELECT * FROM Persons;
```

id	name	sex	age	phone
1	John Doe	Male	25	123-456-7890
2	Jane Smith	Female	31	987-654-3210
3	Bob Johnson	Male	22	555-123-4567
4	Jiaxinyu	Female	19	177-841-4786
5	Jiagyu	Male	29	177-781-4786
6	Jiahanggyu	Male	27	177-672-4986

6 rows in set (0.00 sec)

4. 写出 SQL 语句, 查询 user 表中年龄在 20-30 范围内, 名字包含 “你的姓氏” 的用户, 并按照年龄从大到小排序输出

```
mysql> SELECT *
-> FROM Persons
-> WHERE age >= 20 AND age <= 30
-> AND SUBSTRING(name, 1, 3) = 'Jia'
-> ORDER BY age DESC;
```

id	name	sex	age	phone
5	Jiagyu	Male	29	177-781-4786
6	Jiahangyu	Male	27	177-672-4986

2 rows in set (0.00 sec)

5. 写出 SQL 语句, 计算 user 表中所有用户的平均年龄

```
mysql> SELECT AVG(age) AS average_age
-> FROM Persons;
```

average_age
25.5000

6. 新建两张表team 表(id, teamName)和score 表(id, teamid, userid, score)。其中score 表中的 teamid 为指向 team表id的外键 , userid为指向 user表id的外键

```
mysql> CREATE TABLE team (
-> id INT AUTO_INCREMENT PRIMARY KEY,
-> teamName VARCHAR(255) NOT NULL
-> );
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> CREATE TABLE score (
-> id INT AUTO_INCREMENT PRIMARY KEY,
-> teamid INT,
-> userid INT,
-> score DECIMAL(5, 2) NOT NULL,
-> FOREIGN KEY (teamid) REFERENCES team(id),
-> FOREIGN KEY (userid) REFERENCES Persons(id)
-> );
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> SHOW TABLES
-> ;
```

Tables_in_testdb
persons
score
team

7. 在team表中和score表中插入合适的记录, 写出 SQL语句, 查询 teamName 为“ECNU” 的队伍中, 年龄小于 20 的用户们, 结果不得为空

```
mysql> SELECT p.name, p.age
-> FROM Persons p
-> JOIN score s ON p.id = s.userid
-> JOIN team t ON s.teamid = t.id
-> WHERE t.teamName = 'ECNU' AND p.age < 20;
```

name	age
Jiaxinyu	19

1 row in set (0.00 sec)

8. 写出 SQL 语句, 计算 teamName为“ECNU”的总分(假设 score 存在 nul 值,nul 值默认为0 加入计算)

```
mysql> SELECT SUM(COALESCE(s.score, 0)) AS total_score
-> FROM team t
-> JOIN score s ON t.id = s.teamid
-> JOIN Persons p ON s.userid = p.id
-> WHERE t.teamName = 'ECNU';
+-----+
| total_score |
+-----+
|          255.00 |
+-----+
1 row in set (0.00 sec)
```

9. 写出SQL语句，删除user表中个人信息的记录。

```
mysql> DELETE FROM score WHERE userid = 4;
Query OK, 1 row affected (0.00 sec)

mysql> DELETE FROM Persons WHERE id = 4;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Persons;
+----+-----+-----+-----+-----+
| id | name       | sex   | age  | phone      |
+----+-----+-----+-----+-----+
| 1  | John Doe   | Male  | 25   | 123-456-7890 |
| 2  | Jane Smith | Female| 31   | 987-654-3210 |
| 3  | Bob Johnson| Male  | 22   | 555-123-4567 |
| 5  | Jiagyu     | Male  | 29   | 177-781-4786 |
| 6  | Jiahanggyu| Male  | 27   | 177-672-4986 |
+----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```