

0. 所有的题目结果中，给出SQL语句和执行结果。
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 Homework;
Query OK, 1 row affected (0.00 sec)

mysql> USE Homework;
Database changed
mysql> CREATE TABLE USERS(
    -> id INT PRIMARY KEY AUTO_INCREMENT,
    -> name VARCHAR(100) NOT NULL,
    -> sex VARCHAR(20) NOT NULL,
    -> age INT,
    -> phone VARCHAR(100) NOT NULL
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO USERS
    -> (name,sex,age,phone)
    -> VALUES
    -> ('John Doe','Male','25','123-456-7890');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO USERS
    -> (name,sex,age,phone)
    -> VALUES
    -> ('Jane Smith','Female','31','987-654-3210');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO USERS
    -> (name,sex,age,phone)
    -> VALUES
    -> ('Bob Johnson','Male','22','555-123-4567');
Query OK, 1 row affected (0.01 sec)

mysql> select * from USERS;
+----+-----+-----+-----+-----+
| 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 USERS where age BETWEEN 20 AND 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 USERS
-> (name,sex,age,phone)
-> VALUES
-> ('Huang xiao','Female','18','111-222-3333');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO USERS
-> (name,sex,age,phone)
-> VALUES
-> ('Huang da','Male','27','454-565-1545');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO USERS
-> (name,sex,age,phone)
-> VALUES
-> ('Huang zhong','Male','21','456-454-1546');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO USERS
-> (name,sex,age,phone)
-> VALUES
-> ('Huang shang','Female','37','457-464-7895');
Query OK, 1 row affected (0.01 sec)

mysql> select * from USERS;
+----+-----+-----+-----+-----+
| 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  | Huang xiao | Female | 18   | 111-222-3333 |
| 5  | Huang da   | Male | 27   | 454-565-1545 |
| 6  | Huang zhong | Male | 21   | 456-454-1546 |
| 7  | Huang shang | Female | 37   | 457-464-7895 |
+----+-----+-----+-----+-----+
```

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 USERS where age BETWEEN 20 AND 30 and name like '%Huang%' order by age desc;
+-----+-----+-----+-----+-----+
| id | name          | sex  | age  | phone          |
+-----+-----+-----+-----+-----+
| 5  | Huang da     | Male | 27   | 454-565-1545   |
| 6  | Huang zhong  | Male | 21   | 456-454-1546   |
+-----+-----+-----+-----+-----+
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) avgage from USERS;
+-----+
| avgage |
+-----+
| 25.8571 |
+-----+
1 row in set (0.00 sec)
```

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 PRIMARY KEY,
-> teamName VARCHAR(100) NOT NULL
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE score (
-> id INT PRIMARY KEY,
-> teamid INT,
-> userid INT,
-> score INT,
-> FOREIGN KEY (teamid) REFERENCES team(id),
-> FOREIGN KEY (userid) REFERENCES USERS(id)
-> );
Query OK, 0 rows affected (0.02 sec)
```

7. 在team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> INSERT INTO team (id, teamName) VALUES
-> (1, 'ECNU'),
-> (2, 'UFO'),
-> (3, 'AAA');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO score (id,teamid,userid,score) VALUES
-> (1,1,4,99),
-> (2,1,2,77),
-> (3,1,6,11),
-> (4,2,3,75),
-> (5,2,5,89),
-> (6,3,1,154),
-> (7,3,7,NULL);
Query OK, 7 rows affected (0.01 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> SELECT u.* FROM USERS u
-> JOIN score s ON u.id = s.userid
-> JOIN team t ON s.teamid = t.id
-> WHERE t.teamName = 'ECNU' AND u.age < 20;
+-----+-----+-----+-----+-----+
| id | name      | sex   | age  | phone      |
+-----+-----+-----+-----+-----+
| 4  | Huang xiao | Female | 18   | 111-222-3333 |
+-----+-----+-----+-----+
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 null值,nul值默认为 0 加入计算)。

```
mysql> SELECT COALESCE(SUM(s.score), 0) AS totalScore
-> FROM score s
-> JOIN team t ON s.teamid = t.id WHERE t.teamName = 'ECNU';
+-----+
| totalScore |
+-----+
|          187 |
+-----+
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 USERS WHERE id = 4;  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from USERS;
```

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	Huang da	Male	27	454-565-1545
6	Huang zhong	Male	21	456-454-1546
7	Huang shang	Female	37	457-464-7895

6 rows in set (0.01 sec)