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 mydatabase;
Query OK, 1 row affected (0.00 sec)

mysql> USE mydatabase;
Database changed
mysql> CREATE TABLE user (
    ->     id INT AUTO_INCREMENT PRIMARY KEY,
    ->     name VARCHAR(255) NOT NULL,
    ->     sex ENUM('Male', 'Female') NOT NULL,
    ->     age INT NOT NULL,
    ->     phone VARCHAR(20) NOT NULL
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO user (name, sex, age, phone) VALUES
    -> ('John Doe', 'Male', 25, '123-456-7890'),
    -> ('Jane Smith', 'Female', 31, '987-654-3210'),
    -> ('Bob Johnson', 'Male', 22, '555-123-4567');
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM user;
+----+-------------+--------+-----+--------------+
| 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 user
    -> 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 user (name, sex, age, phone)
    -> VALUES ('胡慧泽', 'Female', 19, '111-222-3344');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO user (name, sex, age, phone)
    -> VALUES ('胡一', 'Male', 28, '123-456-7891'),
    -> ('胡二', 'Female', 24, '234-567-8901'),
    -> ('胡三', 'Male', 30, '345-678-9012');
Query OK, 3 rows affected (0.00 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM user;
+----+-------------+--------+-----+--------------+
| 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 | 胡慧泽      | Female |  19 | 111-222-3344 |
|  5 | 胡一        | Male   |  28 | 123-456-7891 |
|  6 | 胡二        | Female |  24 | 234-567-8901 |
|  7 | 胡三        | Male   |  30 | 345-678-9012 |
+----+-------------+--------+-----+--------------+
7 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 user
    -> WHERE age BETWEEN 20 AND 30
    ->   AND name LIKE '%胡%'
    -> ORDER BY age DESC;
+----+------+--------+-----+--------------+
| id | name | sex    | age | phone        |
+----+------+--------+-----+--------------+
|  7 | 胡三 | Male   |  30 | 345-678-9012 |
|  5 | 胡一 | Male   |  28 | 123-456-7891 |
|  6 | 胡二 | Female |  24 | 234-567-8901 |
+----+------+--------+-----+--------------+
3 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 user;
+-------------+
| average_age |
+-------------+
|     25.5714 |
+-------------+
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(255) NOT NULL
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE score (
    ->     id INT PRIMARY KEY,
    ->     teamid INT,
    ->     userid INT,
    ->     score INT NOT NULL,
    ->     FOREIGN KEY (teamid) REFERENCES team(id),
    ->     FOREIGN KEY (userid) REFERENCES user(id)
    -> );
Query OK, 0 rows affected (0.02 sec)
```

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> CREATE TABLE user1 (
    -> id INT PRIMARY KEY,
    ->     name VARCHAR(255) NOT NULL,
    ->     age INT NOT NULL
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO user1 (id, name, age) VALUES
    -> (1, 'Alice', 19),
    -> (2, 'Bob', 22),
    -> (3, 'Charlie', 18),
    -> (4, 'David', 21);
Query OK, 4 rows affected (0.00 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> INSERT INTO team (id, teamName) VALUES
    -> (1, 'ECNU'),
    -> (2, 'OtherTeam');
Query OK, 2 rows affected (0.00 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> INSERT INTO score (id, teamid, userid, score) VALUES
    -> (1, 1, 1, 90),
    -> (2, 1, 3, 85),
    -> (3, 2, 2, 70),
    -> (4, 2, 4, 60);
Query OK, 4 rows affected (0.00 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT u.name, u.age
    -> FROM user1 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;
+---------+-----+
| name    | age |
+---------+-----+
| Alice   |  19 |
| Charlie |  18 |
+---------+-----+
2 rows 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 SUM(COALESCE(s.score, 0)) AS total_score
    -> FROM score s
    -> JOIN team t ON s.teamid = t.id
    -> WHERE t.teamName = 'ECNU';
+-------------+
| total_score |
+-------------+
|         175 |
+-------------+
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 user
    -> WHERE id = 4;
Query OK, 1 row affected (0.00 sec)

mysql> select *
    -> from user;
+----+-------------+--------+-----+--------------+
| 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 | 胡一        | Male   |  28 | 123-456-7891 |
|  6 | 胡二        | Female |  24 | 234-567-8901 |
|  7 | 胡三        | Male   |  30 | 345-678-9012 |
+----+-------------+--------+-----+--------------+
6 rows in set (0.00 sec)
```