

```
C:\Windows\system32\cmd.e  X  +  v

mysql> use hw_5;
Database changed
mysql> CREATE TABLE user (
->   id INT AUTO_INCREMENT PRIMARY KEY,
->   name VARCHAR(100),
->   sex ENUM('Male', 'Female'),
->   age INT,
->   phone VARCHAR(15)
-> );
Query OK, 0 rows affected (0.03 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 (0.01 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)

mysql> |
```

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C:\Windows\system32\cmd.e  X  +  v

-> ('Z xy', 'Female', 18, '123-234-1234');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO user (name, sex, age, phone) VALUESINSERT INTO user (name, sex, age, phone) VALUES
-> ('Chat Z', 'Male', 28, '111-222-3333'),
-> ('Z Alpha', 'Female', 24, '444-555-6666'),
-> ('Z Gamma', 'Male', 27, '777-888-9999');
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near 'VALUESINSERT INTO user (name, sex, age, phone) VALUES
('Chat Z', 'Male', 28, '11' at line 1
mysql> INSERT INTO user (name, sex, age, phone) VALUES
-> ('Chat Z', 'Male', 28, '111-222-3333'),
-> ('Z Alpha', 'Female', 24, '444-555-6666'),
-> ('Z Gamma', 'Male', 27, '777-888-9999');
Query OK, 3 rows affected (0.03 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  | Z xy    | Female | 18   | 123-234-1234 |
| 5  | Chat Z  | Male  | 28   | 111-222-3333 |
| 6  | Z Alpha | Female | 24   | 444-555-6666 |
| 7  | Z Gamma | Male  | 27   | 777-888-9999 |
+----+-----+-----+-----+-----+

mysql> |
```

```
mysql> SELECT * FROM user
-> WHERE age BETWEEN 20 AND 30
-> AND name LIKE '%Z%'
-> ORDER BY age DESC;
+----+-----+-----+-----+-----+
| id | name   | sex   | age  | phone      |
+----+-----+-----+-----+-----+
| 5  | Chat Z | Male  | 28   | 111-222-3333 |
| 7  | Z Gamma | Male  | 27   | 777-888-9999 |
| 6  | Z Alpha | Female | 24   | 444-555-6666 |
+----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> |
```

```
mysql> SELECT AVG(age) AS average_age FROM user;
+-----+
| average_age |
+-----+
| 25.0000 |
+-----+
1 row in set (0.00 sec)

mysql> |
```

```
mysql> CREATE TABLE team (
->   id INT AUTO_INCREMENT PRIMARY KEY,
->   teamName VARCHAR(100)
-> );
Query OK, 0 rows affected (0.05 sec)

mysql> CREATE TABLE score (
->   id INT AUTO_INCREMENT PRIMARY KEY,
->   teamid INT,
->   userid INT,
->   score INT,
->   FOREIGN KEY (teamid) REFERENCES team(id),
->   FOREIGN KEY (userid) REFERENCES user(id)
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> |
```

文件编辑操作 | team 表和 score 表, 其中 score 表中的 teamid 和 userid 列为外键, 为外键指明

```
mysql> SELECT u.*
-> FROM user 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 | Z xy | Female | 18 | 123-234-1234 |
| 8 | Alice Z | Female | 19 | 123-789-4560 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> |
```

mysql> SELECT u.* FROM user 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;

```
mysql> SELECT t.teamName, SUM(COALESCE(s.score, 0)) AS total_score
-> FROM team t
-> JOIN score s ON t.id = s.teamid
-> WHERE t.teamName = 'ECNU';
+-----+-----+
| teamName | total_score |
+-----+-----+
| ECNU | 625 |
+-----+-----+
1 row in set (0.00 sec)

mysql> |
```

mysql> SELECT t.teamName, SUM(COALESCE(s.score, 0)) AS total_score FROM team t JOIN score s ON t.id = s.teamid WHERE t.teamName = 'ECNU';

```
mysql> DELETE FROM user;
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails ('hw_5`.`score`, CONSTRAINT `score_ibfk_2` FOREIGN KEY (`userid`) REFERENCES `user` (`id`))
mysql> DELETE FROM score WHERE userid IN (SELECT id FROM user);
Query OK, 7 rows affected (0.03 sec)

mysql> DELETE FROM user;
Query OK, 8 rows affected (0.00 sec)

mysql> |
```

mysql> DELETE FROM user; ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails ('hw_5`.`score`, CONSTRAINT `score_ibfk_2` FOREIGN KEY (`userid`) REFERENCES `user` (`id`))

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->   userid INT,
->   score INT,
->   FOREIGN KEY (teamid) REFERENCES team(id),
->   FOREIGN KEY (userid) REFERENCES user(id)
-> );
Query OK, 0 rows affected (0.03 sec)
```