

LEFT JOIN INNER JOIN

```
-- -----
-- Table structure for `departments`
-- -----
DROP TABLE IF EXISTS `departments`;
CREATE TABLE `departments` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(255) DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=MyISAM AUTO_INCREMENT=5 DEFAULT CHARSET=utf8;

-- -----
-- Records of departments
-- -----
INSERT INTO `departments` VALUES ('1', 'Продажи');
INSERT INTO `departments` VALUES ('2', 'Поддержка');
INSERT INTO `departments` VALUES ('3', 'Финансы');
INSERT INTO `departments` VALUES ('4', 'Логистика');

-- -----
-- Table structure for `users`
-- -----
DROP TABLE IF EXISTS `users`;
CREATE TABLE `users` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(255) DEFAULT NULL,
  `d_id` int(11) DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=MyISAM AUTO_INCREMENT=6 DEFAULT CHARSET=utf8;

-- -----
-- Records of users
-- -----
INSERT INTO `users` VALUES ('1', 'Nicola Tesla', '1');
INSERT INTO `users` VALUES ('2', '毛澤東', '2');
INSERT INTO `users` VALUES ('3', 'Françoise Hardy', '6');
INSERT INTO `users` VALUES ('4', 'George Best', '2');
INSERT INTO `users` VALUES ('5', 'Gerd Müller', '4');
```

users	departments																																																																																					
<table><tr><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr><tr><td> </td><td>id</td><td> </td><td>name</td><td> </td></tr><tr><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr><tr><td> </td><td>1</td><td> </td><td>Nicola Tesla</td><td> </td></tr><tr><td> </td><td>2</td><td> </td><td>毛澤東</td><td> </td></tr><tr><td> </td><td>3</td><td> </td><td>Françoise Hardy</td><td> </td></tr><tr><td> </td><td>4</td><td> </td><td>George Best</td><td> </td></tr><tr><td> </td><td>5</td><td> </td><td>Gerd Müller</td><td> </td></tr><tr><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr></table>	+	+	+	+	+		id		name		+	+	+	+	+		1		Nicola Tesla			2		毛澤東			3		Françoise Hardy			4		George Best			5		Gerd Müller		+	+	+	+	+	<table><tr><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr><tr><td> </td><td>id</td><td> </td><td>name</td><td> </td></tr><tr><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr><tr><td> </td><td>1</td><td> </td><td>Продажи</td><td> </td></tr><tr><td> </td><td>2</td><td> </td><td>Поддержка</td><td> </td></tr><tr><td> </td><td>3</td><td> </td><td>Финансы</td><td> </td></tr><tr><td> </td><td>4</td><td> </td><td>Логистика</td><td> </td></tr><tr><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr></table>	+	+	+	+	+		id		name		+	+	+	+	+		1		Продажи			2		Поддержка			3		Финансы			4		Логистика		+	+	+	+	+
+	+	+	+	+																																																																																		
	id		name																																																																																			
+	+	+	+	+																																																																																		
	1		Nicola Tesla																																																																																			
	2		毛澤東																																																																																			
	3		Françoise Hardy																																																																																			
	4		George Best																																																																																			
	5		Gerd Müller																																																																																			
+	+	+	+	+																																																																																		
+	+	+	+	+																																																																																		
	id		name																																																																																			
+	+	+	+	+																																																																																		
	1		Продажи																																																																																			
	2		Поддержка																																																																																			
	3		Финансы																																																																																			
	4		Логистика																																																																																			
+	+	+	+	+																																																																																		

--- INNER JOIN

```
mysql> SELECT u.id, u.name, d.name AS d_name
-> FROM users u
-> INNER JOIN departments d ON u.d_id = d.id;
```

id	name	d_name
1	Nicola Tesla	Продажи
2	毛澤東	Поддержка
4	George Best	Поддержка
5	Gerd Müller	Логистика

--- LEFT JOIN

```
mysql> SELECT u.id, u.name, d.name AS d_name
-> FROM users u
-> LEFT JOIN departments d ON u.d_id = d.id;
```

id	name	d_name
1	Nicola Tesla	Продажи
2	毛澤東	Поддержка
3	Françoise Hardy	NULL
4	George Best	Поддержка
5	Gerd Müller	Логистика

5 rows in set (0.00 sec)

--- RIGHT JOIN

```
mysql> SELECT u.id, u.name, d.name AS d_name
-> FROM users u
-> RIGHT OUTER JOIN departments d ON u.d_id = d.id;
```

id	name	d_name
1	Nicola Tesla	Продажи
2	毛澤東	Поддержка
4	George Best	Поддержка
NULL	NULL	Финансы
5	Gerd Müller	Логистика

5 rows in set (0.00 sec)

--- RIGHT FILTER

```
mysql> SELECT d.id, d.name
-> FROM users u
-> RIGHT OUTER JOIN departments d ON u.d_id = d.id
-> WHERE u.id IS NULL;
```

```
+-----+-----+
| id | name |
+-----+-----+
| 3 | Финансы |
+-----+-----+
```

>mysql -u root -p

Enter password: *****

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 272

Server version: 8.0.22 MySQL Community Server - GPL

Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

```
mysql> use inner-left;
Database changed
```

```
mysql> show tables;
```

```
+-----+-----+
| Tables_in_inner-left |
+-----+-----+
| departments |
| users |
+-----+-----+
```

```
mysql> describe departments;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| name | varchar(255) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
```

```
mysql> describe users;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| name | varchar(255) | YES | | NULL | |
| d_id | int | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
```

```
mysql> select * from users;
```

id	name	d_id
1	Nicola Tesla	1
2	毛澤東	2
3	Françoise Hardy	6
4	George Best	2
5	Gerd Müller	4

```
mysql> select * from departments;
```

id	name
1	Продажи
2	Поддержка
3	Финансы
4	Логистика