Employee

emp_id	first_name	last_name	DOB	sex	salary	branch_id
100	Abhishek	Sharma	1998-08-02	M	30000	1
101	Akshay	Sharma	2002-07-24	M	40000	1
102	Hunter	Sharma	2010-03-10	M	20000	2
103	Sandeep	Kumar	2000-03-15	M	50000	2
104	vasu	Kumar	2006-03-15	M	60000	2
105	Atul	Sharma	1998-01-20	M	90000	2
106	Atulya	Sharma	1998-11-20	F	3000	3
107	Rajat	Bains	1998-12-02	M	100000	3
108	Rahul	Bhandari	1990-12-20	M	300000	3

Client

client_id	client_name	branch_id
200	LPU	2
201	St. Xaviers	2
202	Dr Ambedkar	3
203	SP Smart	3
204	Syedan	3
205	Jet Airlines	1
206	Reliance	1

Branch

branch_id	branch_name	manager_id
1	Bangalore	100
2	Hyderabad	102
3	Delhi	106

Sales

emp_id	client_id	total_sales
102	200	30000
105	201	20000
106	202	300
107	204	100000
108	203	300000

Supplier

branch_id	supplier_name	supplier_type
1	Paper Mill	Paper
2	Industry	Rubber
3	Natraj	Pencils

mysql> create table employee(emp_id int PRIMARY KEY, first_name varchar(20), last_name varchar(20), DOB date, sex varchar(1), salary int, branch_id int);

Query OK, 0 rows affected (2.12 sec)

mysql> create table branch(branch_id int PRIMARY KEY, branch_name varchar(20), manager_id int);

Query OK, 0 rows affected (0.62 sec)

mysql> alter table employee add FOREIGN KEY(branch_id) references branch(branch_id) on delete set NULL;

Query OK, 0 rows affected (3.64 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> create table client(client_id int PRIMARY KEY, client_name varchar(20), branch_id int, foreign key(branch_id) references branch(branch_id) on delete set NULL);

Query OK, 0 rows affected (0.98 sec)

mysql> create table sales(emp_id int, client_id int, total_sales int, PRIMARY KEY(emp_id,client_id), FOREIGN KEY(emp_id) references employee(emp_id) on delete cascade, FOREIGN KEY(client_id) references client(client_id) on delete cascade);

Query OK, 0 rows affected (2.64 sec)

```
mysql> create table supplier(branch_id int, supplier_name varchar(20), supplier_type varchar(20), PRIMARY
KEY(branch_id,supplier_name), FOREIGN KEY(branch_id) references branch(branch_id) on delete cascade);
Query OK, 0 rows affected (1.51 sec)


mysql> insert into employee values(100, 'Abhishek', 'Sharma', '02-08-1998', 'M', 30000, NULL);


mysql> insert into branch values(1, 'Bangalore',100);
Query OK, 1 row affected (0.23 sec)


mysql> update employee set branch_id=1 where emp_id=100;
Query OK, 1 row affected (0.36 sec)
Rows matched: 1  Changed: 1  Warnings: 0


mysql> desc employee;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| emp_id     | int         | NO   | PRI | NULL    |       |
| first_name | varchar(20) | YES  |     | NULL    |       |
| last_name  | varchar(20) | YES  |     | NULL    |       |
| DOB        | date        | YES  |     | NULL    |       |
| sex        | varchar(1)  | YES  |     | NULL    |       |
| salary     | int         | YES  |     | NULL    |       |
| branch_id  | int         | YES  | MUL | NULL    |       |
+------------+-------------+------+-----+---------+-------+
7 rows in set (0.49 sec)


mysql> select * from employee;
+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB        | sex  | salary | branch_id |
+--------+------------+-----------+------------+------+--------+-----------+
|    100 | Abhishek   | Sharma    | 1998-08-02 | M    | 30000  |        1  |
+--------+------------+-----------+------------+------+--------+-----------+
1 row in set (0.00 sec)
```

```
mysql> select * from branch;
+-----------+-------------+------------+
| branch_id | branch_name | manager_id |
+-----------+-------------+------------+
|         1 | Bangalore   |        100 |
+-----------+-------------+------------+
1 row in set (0.00 sec)


mysql> insert into employee values(101, 'Akshay', 'Sharma', '2002-07-24', 'M', 40000, 1);
Query OK, 1 row affected (0.14 sec)


mysql> insert into employee values(102, 'Hunter', 'Sharma', '2010-03-10', 'M', 20000, NULL);
Query OK, 1 row affected (0.14 sec)


mysql> insert into branch values(2, 'Hyderabad',102);
Query OK, 1 row affected (0.26 sec)


mysql> update employee set branch_id=2 where emp_id=102;
Query OK, 1 row affected (0.20 sec)
Rows matched: 1  Changed: 1  Warnings: 0


mysql> insert into employee values(103, 'Sandeep', 'Kumar', '2000-03-15', 'M', 50000, 2);
Query OK, 1 row affected (0.18 sec)


mysql> insert into employee values(104, 'vasu', 'Kumar', '2006-03-15', 'M', 60000, 2);
Query OK, 1 row affected (0.25 sec)


mysql> insert into employee values(105, 'Atul', 'Sharma', '1998-01-20', 'M', 90000, 2);
Query OK, 1 row affected (0.20 sec)


mysql> insert into employee values(106, 'Atulya', 'Sharma', '1998-11-20', 'F', 3000, NULL);
Query OK, 1 row affected (0.18 sec)
```

```
mysql> insert into branch values(3, 'Delhi',106);

Query OK, 1 row affected (0.19 sec)


mysql> update employee set branch_id=3 where emp_id=106;

Query OK, 1 row affected (0.20 sec)

Rows matched: 1  Changed: 1  Warnings: 0


mysql> select * from branch;

+-----------+-------------+------------+
| branch_id | branch_name | manager_id |
+-----------+-------------+------------+
|         1 | Bangalore   |        100 |
|         2 | Hyderabad   |        102 |
|         3 | Delhi       |        106 |
+-----------+-------------+------------+

3 rows in set (0.00 sec)


mysql> select * from employee;

+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB        | sex  | salary | branch_id |
+--------+------------+-----------+------------+------+--------+-----------+
|    100 | Abhishek   | Sharma    | 1998-08-02 | M    |  30000 |         1 |
|    101 | Akshay     | Sharma    | 2002-07-24 | M    |  40000 |         1 |
|    102 | Hunter     | Sharma    | 2010-03-10 | M    |  20000 |         2 |
|    103 | Sandeep    | Kumar     | 2000-03-15 | M    |  50000 |         2 |
|    104 | vasu       | Kumar     | 2006-03-15 | M    |  60000 |         2 |
|    105 | Atul       | Sharma    | 1998-01-20 | M    |  90000 |         2 |
|    106 | Atulya     | Sharma    | 1998-11-20 | F    |   3000 |         3 |
+--------+------------+-----------+------------+------+--------+-----------+

7 rows in set (0.00 sec)


mysql> insert into employee values(107, 'Rajat', 'Bains', '1998-12-02', 'M', 100000, 3);

Query OK, 1 row affected (0.10 sec)
```

```
mysql> select * from client;

Empty set (0.28 sec)


mysql> insert into client values(200,'LPU',2);

Query OK, 1 row affected (0.18 sec)


mysql> insert into client values(201,'St. Xaviers',2);

Query OK, 1 row affected (0.15 sec)


mysql> insert into client values(202,'Dr Ambedkar',3);

Query OK, 1 row affected (0.16 sec)


mysql> insert into client values(203,'SP Smart',4);

ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`abhishek`.`client`, CONSTRAINT `client_ibfk_1`
FOREIGN KEY (`branch_id`) REFERENCES `branch` (`branch_id`) ON DELETE SET NULL)

mysql> insert into client values(203,'SP Smart',3);

Query OK, 1 row affected (0.14 sec)


mysql> insert into client values(204,'Syedan',3);

Query OK, 1 row affected (0.20 sec)


mysql> insert into client values(205,'Jet Airlines',1);

Query OK, 1 row affected (0.10 sec)


mysql> insert into client values(206,'Reliance',1);

Query OK, 1 row affected (0.10 sec)


mysql> insert into sales values(105,201,20000);

Query OK, 1 row affected (0.48 sec)


mysql> insert into sales values(102,200,30000);

Query OK, 1 row affected (0.12 sec)


mysql> insert into sales values(106,202,300);
```

Query OK, 1 row affected (0.12 sec)

mysql> insert into sales values(108,203,300000);

Query OK, 1 row affected (0.12 sec)

mysql> insert into sales values(107,204,100000);

Query OK, 1 row affected (0.17 sec)

mysql> insert into supplier table(1,'Paper Mill','Paper');

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 '(1,'Paper Mill','Paper')' at line 1

mysql> insert into supplier values(1,'Paper Mill','Paper');

Query OK, 1 row affected (0.27 sec)

mysql> insert into supplier values(2,'Industry','Rubber');

Query OK, 1 row affected (0.13 sec)

mysql> insert into supplier values(3,'Natraj','Pencils');

Query OK, 1 row affected (0.18 sec)

mysql> select * from client;

```
+-----------+--------------+-----------+
| client_id | client_name  | branch_id |
+-----------+--------------+-----------+
|       200 | LPU          |         2 |
|       201 | St. Xaviers  |         2 |
|       202 | Dr Ambedkar  |         3 |
|       203 | SP Smart     |         3 |
|       204 | Syedan       |         3 |
|       205 | Jet Airlines |         1 |
|       206 | Reliance     |         1 |
+-----------+--------------+-----------+
```

7 rows in set (0.11 sec)

```
mysql> select * from sales;

+--------+-----------+-------------+
| emp_id | client_id | total_sales |
+--------+-----------+-------------+
|    102 |       200 |       30000 |
|    105 |       201 |       20000 |
|    106 |       202 |         300 |
|    107 |       204 |      100000 |
|    108 |       203 |      300000 |
+--------+-----------+-------------+
5 rows in set (0.01 sec)


mysql> select * from supplier;

+-----------+---------------+---------------+
| branch_id | supplier_name | supplier_type |
+-----------+---------------+---------------+
|         1 | Paper Mill    | Paper         |
|         2 | Industry      | Rubber        |
|         3 | Natraj        | Pencils       |
+-----------+---------------+---------------+
3 rows in set (0.00 sec)




mysql> -- Find all employees ordered by salary
mysql> Select * from employee order by salary desc;

+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB        | sex  | salary | branch_id |
+--------+------------+-----------+------------+------+--------+-----------+
|    108 | Rahul      | Bhandari  | 1990-12-20 | M    | 300000 |         3 |
|    107 | Rajat      | Bains     | 1998-12-02 | M    | 100000 |         3 |
|    105 | Atul       | Sharma    | 1998-01-20 | M    |  90000 |         2 |
|    104 | vasu       | Kumar     | 2006-03-15 | M    |  60000 |         2 |
```

103	Sandeep	Kumar	2000-03-15	M	50000	2
101	Akshay	Sharma	2002-07-24	M	40000	1
100	Abhishek	Sharma	1998-08-02	M	30000	1
102	Hunter	Sharma	2010-03-10	M	20000	2
106	Atulya	Sharma	1998-11-20	F	3000	3
+--------+------------+-----------+------------+------+--------+-----------+

9 rows in set (0.00 sec)

mysql> -- Find all employee order by sex then name

mysql> Select * from employee order by sex,first_name;

+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB | sex | salary | branch_id |
+--------+------------+-----------+------------+------+--------+-----------+
106	Atulya	Sharma	1998-11-20	F	3000	3
100	Abhishek	Sharma	1998-08-02	M	30000	1
101	Akshay	Sharma	2002-07-24	M	40000	1
105	Atul	Sharma	1998-01-20	M	90000	2
102	Hunter	Sharma	2010-03-10	M	20000	2
108	Rahul	Bhandari	1990-12-20	M	300000	3
107	Rajat	Bains	1998-12-02	M	100000	3
103	Sandeep	Kumar	2000-03-15	M	50000	2
104	vasu	Kumar	2006-03-15	M	60000	2
+--------+------------+-----------+------------+------+--------+-----------+

9 rows in set (0.00 sec)

mysql> Select * from employee limit 5;

+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB | sex | salary | branch_id |
+--------+------------+-----------+------------+------+--------+-----------+
100	Abhishek	Sharma	1998-08-02	M	30000	1
101	Akshay	Sharma	2002-07-24	M	40000	1
102	Hunter	Sharma	2010-03-10	M	20000	2
103	Sandeep	Kumar	2000-03-15	M	50000	2
104	vasu	Kumar	2006-03-15	M	60000	2

```
+--------+-----------+-----------+------------+------+--------+-----------+
```
5 rows in set (0.00 sec)

mysql> -- Find forename and last name of all employes

mysql> select first_name as forename, employee.last_name as last_name from employee;

```
+----------+-----------+
| forename | last_name |
+----------+-----------+
| Abhishek | Sharma    |
| Akshay   | Sharma    |
| Hunter   | Sharma    |
| Sandeep  | Kumar     |
| vasu     | Kumar     |
| Atul     | Sharma    |
| Atulya   | Sharma    |
| Rajat    | Bains     |
| Rahul    | Bhandari  |
+----------+-----------+
```
9 rows in set (0.00 sec)

mysql> -- Find out all the genders

mysql> select distinct(sex) from employee;

```
+------+
| sex  |
+------+
| M    |
| F    |
+------+
```
2 rows in set (0.02 sec)

mysql> -- Find all employee id and names who born after 2000

mysql> select emp_id, first_name, last_name from employee where DOB>2000;

```
+--------+------------+-----------+
| emp_id | first_name | last_name |
```

```
+--------+------------+-----------+
|    100 | Abhishek   | Sharma    |
|    101 | Akshay     | Sharma    |
|    102 | Hunter     | Sharma    |
|    103 | Sandeep    | Kumar     |
|    104 | vasu       | Kumar     |
|    105 | Atul       | Sharma    |
|    106 | Atulya     | Sharma    |
|    107 | Rajat      | Bains     |
|    108 | Rahul      | Bhandari  |
+--------+------------+-----------+
9 rows in set, 1 warning (0.12 sec)


mysql> select emp_id, first_name, last_name from employee where DOB>2000-01-01;
+--------+------------+-----------+
| emp_id | first_name | last_name |
+--------+------------+-----------+
|    100 | Abhishek   | Sharma    |
|    101 | Akshay     | Sharma    |
|    102 | Hunter     | Sharma    |
|    103 | Sandeep    | Kumar     |
|    104 | vasu       | Kumar     |
|    105 | Atul       | Sharma    |
|    106 | Atulya     | Sharma    |
|    107 | Rajat      | Bains     |
|    108 | Rahul      | Bhandari  |
+--------+------------+-----------+
9 rows in set, 1 warning (0.02 sec)


mysql> select emp_id, first_name, last_name from employee where DOB >= 2000-01-01;
+--------+------------+-----------+
| emp_id | first_name | last_name |
+--------+------------+-----------+
|    100 | Abhishek   | Sharma    |
```

```
|  101 | Akshay    | Sharma   |
|  102 | Hunter    | Sharma   |
|  103 | Sandeep   | Kumar    |
|  104 | vasu      | Kumar    |
|  105 | Atul      | Sharma   |
|  106 | Atulya    | Sharma   |
|  107 | Rajat     | Bains    |
|  108 | Rahul     | Bhandari |
+--------+------------+-----------+
9 rows in set, 1 warning (0.00 sec)


mysql> select emp_id, first_name, last_name from employee where DOB <= 2000-01-01;
Empty set, 1 warning (0.00 sec)


mysql> select * from employee where sex='F' and branch_id=2;
Empty set (0.01 sec)


mysql> select * from employee where DOB between '2000-01-01' and '2010-08-01';
+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB        | sex  | salary | branch_id |
+--------+------------+-----------+------------+------+--------+-----------+
|  101 | Akshay    | Sharma   | 2002-07-24 | M    | 40000  |        1 |
|  102 | Hunter    | Sharma   | 2010-03-10 | M    | 20000  |        2 |
|  103 | Sandeep   | Kumar    | 2000-03-15 | M    | 50000  |        2 |
|  104 | vasu      | Kumar    | 2006-03-15 | M    | 60000  |        2 |
+--------+------------+-----------+------------+------+--------+-----------+
4 rows in set (0.00 sec)


mysql> select emp_id, first_name, last_name from employee where DOB >= '2000-01-01';
+--------+------------+-----------+
| emp_id | first_name | last_name |
+--------+------------+-----------+
|  101 | Akshay    | Sharma   |
|  102 | Hunter    | Sharma   |
```

```
|   103 | Sandeep   | Kumar    |
|   104 | vasu      | Kumar    |
+--------+------------+-----------+
```
4 rows in set (0.10 sec)

mysql> -- Find first name frome following

mysql> select first_name from employee where first_name in('Abhishek','Virat','Dhoni','Akshay');
```
+------------+
| first_name |
+------------+
| Abhishek   |
| Akshay     |
+------------+
```
2 rows in set (0.01 sec)

mysql> -- Aggregate Functions

mysql> select count(emp_id) from employee;
```
+---------------+
| count(emp_id) |
+---------------+
|            9 |
+---------------+
```
1 row in set (0.11 sec)

mysql> select sum(salary) from employee;
```
+-------------+
| sum(salary) |
+-------------+
|     693000 |
+-------------+
```
1 row in set (0.00 sec)

mysql> select count(sex) from employee group by sex;
```
+-------------+
```

```
| count(sex) |
+------------+
|          8 |
|          1 |
+------------+
2 rows in set (0.00 sec)


mysql> select count(sex),sex from employee group by sex;
+------------+------+
| count(sex) | sex  |
+------------+------+
|          8 | M    |
|          1 | F    |
+------------+------+
2 rows in set (0.00 sec)


mysql> select sex,count(sex) from employee group by sex;
+------+------------+
| sex  | count(sex) |
+------+------------+
| M    |          8 |
| F    |          1 |
+------+------------+
2 rows in set (0.00 sec)


mysql> select emp_id,count(total_sales) from sales group by client_id;
+--------+--------------------+
| emp_id | count(total_sales) |
+--------+--------------------+
|    102 |                  1 |
|    105 |                  1 |
|    106 |                  1 |
|    108 |                  1 |
|    107 |                  1 |
```

```
+--------+-------------------+
```

5 rows in set (0.03 sec)

mysql> select emp_id,sum(total_sales) from sales group by client_id;

```
+--------+------------------+
| emp_id | sum(total_sales) |
+--------+------------------+
|    102 |            30000 |
|    105 |            20000 |
|    106 |              300 |
|    108 |           300000 |
|    107 |           100000 |
+--------+------------------+
```

5 rows in set (0.00 sec)

mysql> select client_id,sum(total_sales) from sales group by client_id;

```
+-----------+------------------+
| client_id | sum(total_sales) |
+-----------+------------------+
|       200 |            30000 |
|       201 |            20000 |
|       202 |              300 |
|       203 |           300000 |
|       204 |           100000 |
+-----------+------------------+
```

5 rows in set (0.00 sec)

mysql> -- wildcards

mysql> select * from employee where first_name='%shek';

Empty set (0.00 sec)

mysql> select * from employee where first_name like '%shek';

```
+--------+------------+-----------+------------+------+--------+-----------+
| emp_id | first_name | last_name | DOB        | sex  | salary | branch_id |
```

```
+--------+------------+-----------+------------+-----+-------+-----------+
|   100  | Abhishek   | Sharma    | 1998-08-02 | M   | 30000 |       1 |
+--------+------------+-----------+------------+-----+-------+-----------+
```

1 row in set (0.00 sec)

mysql> select * from client where client_name like '_yeda_';

```
+-----------+-------------+-----------+
| client_id | client_name | branch_id |
+-----------+-------------+-----------+
|       204 | Syedan      |         3 |
+-----------+-------------+-----------+
```

1 row in set (0.00 sec)

mysql> -- Use of Union

mysql> select first_name from employee union select branch_name from branch;

```
+------------+
| first_name |
+------------+
| Abhishek   |
| Akshay     |
| Hunter     |
| Sandeep    |
| vasu       |
| Atul       |
| Atulya     |
| Rajat      |
| Rahul      |
| Bangalore  |
| Hyderabad  |
| Delhi      |
+------------+
```

12 rows in set (0.01 sec)

mysql> select employee.first_name as employee_branch_name from employee union select branch.branch_name from branch;

```
+---------------------+
| employee_branch_name |
+---------------------+
| Abhishek      |
| Akshay       |
| Hunter       |
| Sandeep      |
| vasu        |
| Atul        |
| Atulya       |
| Rajat        |
| Rahul        |
| Bangalore      |
| Hyderabad      |
| Delhi        |
+---------------------+
12 rows in set (0.00 sec)
```

mysql> select client.client_name as CLIENT_NAME , client.branch_id as BRANCH_ID from client union select supplier.supplier_name, supplier.branch_id from supplier;

```
+-------------+-----------+
| CLIENT_NAME | BRANCH_ID |
+-------------+-----------+
| LPU      |     2 |
| St. Xaviers |     2 |
| Dr Ambedkar |     3 |
| SP Smart   |     3 |
| Syedan    |     3 |
| Jet Airlines |     1 |
| Reliance   |     1 |
| Paper Mill  |     1 |
| Industry   |     2 |
| Natraj    |     3 |
+-------------+-----------+
```

10 rows in set (0.00 sec)

mysql> select first_name,last_name from employee where employee.emp_id in (select sales.emp_id from sales where total_sales > 50000);

```
+------------+-----------+
| first_name | last_name |
+------------+-----------+
| Rajat      | Bains     |
| Rahul      | Bhandari  |
+------------+-----------+
```

2 rows in set (0.10 sec)

mysql> select * from sales;

```
+--------+-----------+-------------+
| emp_id | client_id | total_sales |
+--------+-----------+-------------+
|    102 |       200 |       30000 |
|    105 |       201 |       20000 |
|    106 |       202 |         300 |
|    107 |       204 |      100000 |
|    108 |       203 |      300000 |
+--------+-----------+-------------+
```

5 rows in set (0.00 sec)

mysql> select * from client where client.branch_id in (select employee.branch_id from employee where first_name like '%ter');

```
+-----------+-------------+-----------+
| client_id | client_name | branch_id |
+-----------+-------------+-----------+
|       200 | LPU         |         2 |
|       201 | St. Xaviers |         2 |
+-----------+-------------+-----------+
```

2 rows in set (0.02 sec)

mysql> select * from client;

```
+-----------+--------------+-----------+
| client_id | client_name  | branch_id |
+-----------+--------------+-----------+
|       200 | LPU          |         2 |
|       201 | St. Xaviers  |         2 |
|       202 | Dr Ambedkar  |         3 |
|       203 | SP Smart     |         3 |
|       204 | Syedan       |         3 |
|       205 | Jet Airlines |         1 |
|       206 | Reliance     |         1 |
+-----------+--------------+-----------+
7 rows in set (0.00 sec)
```