

```
mysql> SHOW DATABASES;
```

Database
information_schema
moviedatabase
mysql
performance_schema
sakila
sys
world

```
7 rows in set (0.00 sec)
```

```
mysql> CREATE DATABASE COMPANYDATABASE;
```

```
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SHOW DATABASES;
```

Database
companydatabase
information_schema
moviedatabase
mysql
performance_schema
sakila
sys
world

```
8 rows in set (0.00 sec)
```

```
mysql> USE COMPANYDATABASE;
```

```
Database changed
```

```
mysql>
```

```
mysql> CREATE TABLE EMPLOYEE
-> (
-> SSN          CHAR(9),
-> FNAME        VARCHAR(20),
-> LNAME        VARCHAR(20),
-> ADDRESS      VARCHAR(50),
-> SEX          CHAR,
-> SALARY       DECIMAL(10,2),
-> SUPER_SSN    CHAR(9),
-> DNO          INT,
-> PRIMARY KEY (SSN),
-> FOREIGN KEY (SUPER_SSN) REFERENCES EMPLOYEE (SSN)
-> );
```

Query OK, 0 rows affected (0.07 sec)

```
mysql> DESCRIBE EMPLOYEE;
```

Field	Type	Null	Key	Default	Extra
SSN	char(9)	NO	PRI	NULL	
FNAME	varchar(20)	YES		NULL	
LNAME	varchar(20)	YES		NULL	
ADDRESS	varchar(50)	YES		NULL	
SEX	char(1)	YES		NULL	
SALARY	decimal(10,2)	YES		NULL	
SUPER_SSN	char(9)	YES	MUL	NULL	
DNO	int	YES		NULL	

8 rows in set (0.00 sec)

```
mysql>
```

```
mysql> CREATE TABLE DEPARTMENT
-> (
-> DNO                INT,
-> DNAME              VARCHAR(20),
-> MGR_SSN            CHAR(9),
-> MGR_START_DATE     DATE,
-> PRIMARY KEY (DNO),
-> FOREIGN KEY (MGR_SSN) REFERENCES EMPLOYEE (SSN)
-> );
```

Query OK, 0 rows affected (0.04 sec)

```
mysql> DESCRIBE DEPARTMENT;
```

Field	Type	Null	Key	Default	Extra
DNO	int	NO	PRI	NULL	
DNAME	varchar(20)	YES		NULL	
MGR_SSN	char(9)	YES	MUL	NULL	
MGR_START_DATE	date	YES		NULL	

4 rows in set (0.00 sec)

```
mysql> ALTER TABLE EMPLOYEE ADD FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO);
```

Query OK, 0 rows affected (0.08 sec)

Records: 0 Duplicates: 0 Warnings: 0

```
mysql> DESCRIBE EMPLOYEE;
```

Field	Type	Null	Key	Default	Extra
SSN	char(9)	NO	PRI	NULL	
FNAME	varchar(20)	YES		NULL	
LNAME	varchar(20)	YES		NULL	
ADDRESS	varchar(50)	YES		NULL	
SEX	char(1)	YES		NULL	
SALARY	decimal(10,2)	YES		NULL	
SUPER_SSN	char(9)	YES	MUL	NULL	
DNO	int	YES	MUL	NULL	

8 rows in set (0.00 sec)

```
mysql>
```

```
mysql> CREATE TABLE DLOCATION
```

```
-> (  
-> DNO                INT,  
-> DNAME              VARCHAR(50),  
-> PRIMARY KEY (DNO, DNAME),  
-> FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO)  
-> );
```

```
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> DESCRIBE DLOCATION;
```

Field	Type	Null	Key	Default	Extra
DNO	int	NO	PRI	NULL	
DNAME	varchar(50)	NO	PRI	NULL	

```
2 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE PROJECT
```

```
-> (  
-> PNO                INT,  
-> PNAME              VARCHAR(20),  
-> PLOCATION            VARCHAR(50),  
-> DNO                INT,  
-> PRIMARY KEY (PNO),  
-> FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO)  
-> );
```

```
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> DESCRIBE PROJECT;
```

Field	Type	Null	Key	Default	Extra
PNO	int	NO	PRI	NULL	
PNAME	varchar(20)	YES		NULL	
PLOCATION	varchar(50)	YES		NULL	
DNO	int	YES	MUL	NULL	

```
4 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> CREATE TABLE WORKS_ON
-> (
-> SSN          CHAR(9),
-> PNO          INT,
-> HOURS        DECIMAL(3,1),
-> PRIMARY KEY (SSN, PNO),
-> FOREIGN KEY (PNO) REFERENCES PROJECT (PNO),
-> FOREIGN KEY (SSN) REFERENCES EMPLOYEE (SSN)
-> );
```

Query OK, 0 rows affected (0.06 sec)

```
mysql> DESCRIBE WORKS_ON;
```

Field	Type	Null	Key	Default	Extra
SSN	char(9)	NO	PRI	NULL	
PNO	int	NO	PRI	NULL	
HOURS	decimal(3,1)	YES		NULL	

3 rows in set (0.01 sec)

```
mysql> SHOW TABLES;
```

Tables_in_companydatabase
department
dlocation
employee
project
works_on

5 rows in set (0.00 sec)

```
mysql>
```

```
mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDACC01', 'AHANA', 'K', 'MANGALORE', 'F', '350000', NULL, NULL);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDACC02', 'SANTOSH', 'KUMAR', 'MANGALORE', 'M', '300000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDCSE01', 'JAMES', 'SMITH', 'BANGALORE', 'M', '500000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDCSE02', 'HEARN', 'BAKER', 'BANGALORE', 'M', '700000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDCSE03', 'EDWARD', 'SCOTT', 'MYSORE', 'M', '500000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDCSE04', 'PAVAN', 'HEGDE', 'MANGALORE', 'M', '650000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDCSE05', 'GIRISH', 'MALYA', 'MYSORE', 'M', '450000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDCSE06', 'ALICE', 'SMITH', 'BANGALORE', 'F', '800000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDECE01', 'JOHN', 'SCOTT', 'BANGALORE', 'M', '500000', NULL, NULL);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDISE01', 'VEENA', 'M', 'MYSORE', 'F', '600000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO EMPLOYEE VALUES
-> ('ABCDIIT01', 'NAGESH', 'HR', 'BANGALORE', 'M', '500000', NULL, NULL);
Query OK, 1 row affected (0.00 sec)

mysql>
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	NULL	NULL
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	NULL
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	NULL	NULL
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	NULL	NULL
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	NULL	NULL
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	NULL	NULL
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	NULL	NULL
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	NULL
ABCECE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	NULL
ABCDIIT01	MAGESH	HR	BANGALORE	M	500000.00	NULL	NULL
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	NULL

```
11 rows in set (0.00 sec)
```

```
mysql> INSERT INTO DEPARTMENT VALUES
```

```
-> ('1', 'ACCOUNTS', 'ABCDACC02', '2001-01-01');
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DEPARTMENT VALUES
```

```
-> ('2', 'IT', 'ABCDIIT01', '2016-08-01');
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DEPARTMENT VALUES
```

```
-> ('3', 'ECE', 'ABCECE01', '2008-06-01');
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DEPARTMENT VALUES
```

```
-> ('4', 'ISE', 'ABCDISE01', '2015-06-01');
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DEPARTMENT VALUES
```

```
-> ('5', 'CSE', 'ABCDCE05', '2002-06-01');
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> SELECT * FROM DEPARTMENT;
```

DNO	DNAME	MGR_SSN	MGR_START_DATE
1	ACCOUNTS	ABCDACC02	2001-01-01
2	IT	ABCDIIT01	2016-08-01
3	ECE	ABCECE01	2008-06-01
4	ISE	ABCDISE01	2015-06-01
5	CSE	ABCDCE05	2002-06-01

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

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = 'ABCDACC02', DNO = '1'
-> WHERE SSN = 'ABCDACC01';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = NULL, DNO = '1'
-> WHERE SSN = 'ABCDACC02';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = 'ABCDCSE02', DNO = '5'
-> WHERE SSN = 'ABCDCSE01';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = 'ABCDCSE03', DNO = '5'
-> WHERE SSN = 'ABCDCSE02';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = 'ABCDCSE04', DNO = '5'
-> WHERE SSN = 'ABCDCSE03';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = 'ABCDCSE05', DNO = '5'
-> WHERE SSN = 'ABCDCSE04';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = 'ABCDCSE06', DNO = '5'
-> WHERE SSN = 'ABCDCSE05';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql>
```



```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = NULL, DNO = '5'
-> WHERE SSN = 'ABCDCE06';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = NULL, DNO = '3'
-> WHERE SSN = 'ABCDECE01';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = NULL, DNO = '4'
-> WHERE SSN = 'ABCDISE01';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> UPDATE EMPLOYEE
-> SET SUPER_SSN = NULL, DNO = '2'
-> WHERE SSN = 'ABCDIIT01';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCDECE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> INSERT INTO DLOCATION VALUES  
-> ('1', 'BANGALORE');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DLOCATION VALUES  
-> ('2', 'BANGALORE');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DLOCATION VALUES  
-> ('3', 'BANGALORE');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DLOCATION VALUES  
-> ('4', 'MANGALORE');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO DLOCATION VALUES  
-> ('5', 'MANGALORE');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> SELECT * FROM DLOCATION;
```

DNO	DNAME
1	BANGALORE
2	BANGALORE
3	BANGALORE
4	MANGALORE
5	MANGALORE

5 rows in set (0.00 sec)

```
mysql>
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('100', 'IOT', 'BANGALORE', '5');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('101', 'CLOUD', 'BANGALORE', '5');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('102', 'BIGDATA', 'BANGALORE', '5');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('103', 'SENSORS', 'BANGALORE', '3');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('104', 'BANK MANAGEMENT', 'BANGALORE', '1');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('105', 'SALARY MANAGEMENT', 'BANGALORE', '1');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('106', 'OPEN STACK', 'BANGALORE', '4');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO PROJECT VALUES
-> ('107', 'SMART CITY', 'BANGALORE', '2');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SELECT * FROM PROJECT;
```

PNO	PNAME	PLOCATION	DNO
100	IOT	BANGALORE	5
101	CLOUD	BANGALORE	5
102	BIGDATA	BANGALORE	5
103	SENSORS	BANGALORE	3
104	BANK MANAGEMENT	BANGALORE	1
105	SALARY MANAGEMENT	BANGALORE	1
106	OPEN STACK	BANGALORE	4
107	SMART CITY	BANGALORE	2

```
8 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDACC01', '104', '5');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDACC02', '105', '6');  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE01', '101', '6');  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE01', '100', '4');  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE01', '102', '8');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE02', '100', '10');  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE03', '102', '6');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE04', '100', '3');  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE05', '101', '4');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDCE06', '102', '5');  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES  
-> ('ABCDECE01', '103', '7');  
Query OK, 1 row affected (0.01 sec)
```

```
mysql>
```

```
mysql> INSERT INTO WORKS_ON VALUES
-> ('ABCDISE01', '106', '4');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO WORKS_ON VALUES
-> ('ABCDIIT01', '107', '10');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> SELECT * FROM WORKS_ON;
```

SSN	PNO	HOURS
ABCDACC01	104	5.0
ABCDACC02	105	6.0
ABCDCE01	100	4.0
ABCDCE01	101	6.0
ABCDCE01	102	8.0
ABCDCE02	100	10.0
ABCDCE03	102	6.0
ABCDCE04	100	3.0
ABCDCE05	101	4.0
ABCDCE06	102	5.0
ABCDECE01	103	7.0
ABCDIIT01	107	10.0
ABCDISE01	106	4.0

```
13 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> DESCRIBE EMPLOYEE;
```

Field	Type	Null	Key	Default	Extra
SSN	char(9)	NO	PRI	NULL	
FNAME	varchar(20)	YES		NULL	
LNAME	varchar(20)	YES		NULL	
ADDRESS	varchar(50)	YES		NULL	
SEX	char(1)	YES		NULL	
SALARY	decimal(10,2)	YES		NULL	
SUPER_SSN	char(9)	YES	MUL	NULL	
DNO	int	YES	MUL	NULL	

```
8 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCECE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> DESCRIBE DEPARTMENT;
```

Field	Type	Null	Key	Default	Extra
DNO	int	NO	PRI	NULL	
DNAME	varchar(20)	YES		NULL	
MGR_SSN	char(9)	YES	MUL	NULL	
MGR_START_DATE	date	YES		NULL	

4 rows in set (0.00 sec)

```
mysql> SELECT * FROM DEPARTMENT;
```

DNO	DNAME	MGR_SSN	MGR_START_DATE
1	ACCOUNTS	ABCDACC02	2001-01-01
2	IT	ABCDIIT01	2016-08-01
3	ECE	ABCDCECE01	2008-06-01
4	ISE	ABCDISE01	2015-06-01
5	CSE	ABCDCESE05	2002-06-01

5 rows in set (0.00 sec)

```
mysql> DESCRIBE DLOCATION;
```

Field	Type	Null	Key	Default	Extra
DNO	int	NO	PRI	NULL	
DNAME	varchar(50)	NO	PRI	NULL	

2 rows in set (0.00 sec)

```
mysql> SELECT * FROM DLOCATION;
```

DNO	DNAME
1	BANGALORE
2	BANGALORE
3	BANGALORE
4	MANGALORE
5	MANGALORE

5 rows in set (0.00 sec)

```
mysql>
```

```
mysql> DESCRIBE PROJECT;
```

Field	Type	Null	Key	Default	Extra
PNO	int	NO	PRI	NULL	
PNAME	varchar(20)	YES		NULL	
PLOCATION	varchar(50)	YES		NULL	
DNO	int	YES	MUL	NULL	

```
4 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM PROJECT;
```

PNO	PNAME	PLOCATION	DNO
100	IOT	BANGALORE	5
101	CLOUD	BANGALORE	5
102	BIGDATA	BANGALORE	5
103	SENSORS	BANGALORE	3
104	BANK MANAGEMENT	BANGALORE	1
105	SALARY MANAGEMENT	BANGALORE	1
106	OPEN STACK	BANGALORE	4
107	SMART CITY	BANGALORE	2

```
8 rows in set (0.00 sec)
```



```
mysql> DESCRIBE WORKS_ON;
```

Field	Type	Null	Key	Default	Extra
SSN	char(9)	NO	PRI	NULL	
PNO	int	NO	PRI	NULL	
HOURS	decimal(3,1)	YES		NULL	

```
3 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM WORKS_ON;
```

SSN	PNO	HOURS
ABCDACC01	104	5.0
ABCDACC02	105	6.0
ABCDCE01	100	4.0
ABCDCE01	101	6.0
ABCDCE01	102	8.0
ABCDCE02	100	10.0
ABCDCE03	102	6.0
ABCDCE04	100	3.0
ABCDCE05	101	4.0
ABCDCE06	102	5.0
ABCECE01	103	7.0
ABCDIIT01	107	10.0
ABCDISE01	106	4.0

```
13 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCDCE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM PROJECT;
```

PNO	PNAME	PLOCATION	DNO
100	IOT	BANGALORE	5
101	CLOUD	BANGALORE	5
102	BIGDATA	BANGALORE	5
103	SENSORS	BANGALORE	3
104	BANK MANAGEMENT	BANGALORE	1
105	SALARY MANAGEMENT	BANGALORE	1
106	OPEN STACK	BANGALORE	4
107	SMART CITY	BANGALORE	2

```
8 rows in set (0.00 sec)
```

```
mysql> (SELECT DISTINCT P1.PNO
-> FROM PROJECT AS P1, DEPARTMENT AS D1, EMPLOYEE AS E1
-> WHERE E1.DNO = P1.DNO AND E1.SSN = D1.MGR_SSN AND E1.LNAME = 'SCOTT')
-> UNION
-> (SELECT DISTINCT P2.PNO
-> FROM PROJECT AS P2, WORKS_ON AS W2, EMPLOYEE AS E2
-> WHERE P2.PNO = W2.PNO AND E2.SSN = W2.SSN AND E2.LNAME = 'SCOTT');
```

PNO
103
102

```
2 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCECE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM PROJECT;
```

PNO	PNAME	PLOCATION	DNO
100	IOT	BANGALORE	5
101	CLOUD	BANGALORE	5
102	BIGDATA	BANGALORE	5
103	SENSORS	BANGALORE	3
104	BANK MANAGEMENT	BANGALORE	1
105	SALARY MANAGEMENT	BANGALORE	1
106	OPEN STACK	BANGALORE	4
107	SMART CITY	BANGALORE	2

```
8 rows in set (0.00 sec)
```

```
mysql> SELECT E.FNAME, E.LNAME, 1.1 * E.SALARY AS INCREASED_SALARY  
-> FROM EMPLOYEE AS E, PROJECT AS P, WORKS_ON AS W  
-> WHERE E.SSN = W.SSN AND P.PNO = W.PNO AND P.PNAME = 'IOT';
```

FNAME	LNAME	INCREASED_SALARY
JAMES	SMITH	550000.000
HEARN	BAKER	770000.000
PAVAN	HEGDE	715000.000

```
3 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCDCE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM DEPARTMENT;
```

DNO	DNAME	MGR_SSN	MGR_START_DATE
1	ACCOUNTS	ABCDACC02	2001-01-01
2	IT	ABCDIIT01	2016-08-01
3	ECE	ABCDCE01	2008-06-01
4	ISE	ABCDISE01	2015-06-01
5	CSE	ABCDCE05	2002-06-01

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

```
mysql> SELECT SUM(E.SALARY), MAX(E.SALARY), MIN(E.SALARY), AVG(E.SALARY)  
-> FROM EMPLOYEE AS E, DEPARTMENT AS D  
-> WHERE E.DNO = D.DNO AND D.DNAME = 'ACCOUNTS';
```

SUM(E.SALARY)	MAX(E.SALARY)	MIN(E.SALARY)	AVG(E.SALARY)
650000.00	350000.00	300000.00	325000.000000

```
1 row in set (0.00 sec)
```

```
mysql>
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCDCE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM PROJECT;
```

PNO	PNAME	PLOCATION	DNO
100	IOT	BANGALORE	5
101	CLOUD	BANGALORE	5
102	BIGDATA	BANGALORE	5
103	SENSORS	BANGALORE	3
104	BANK MANAGEMENT	BANGALORE	1
105	SALARY MANAGEMENT	BANGALORE	1
106	OPEN STACK	BANGALORE	4
107	SMART CITY	BANGALORE	2

```
8 rows in set (0.00 sec)
```

```
mysql> SELECT E.FNAME, E.LNAME
-> FROM EMPLOYEE AS E
-> WHERE NOT EXISTS
-> (SELECT PNO
-> FROM PROJECT AS P
-> WHERE DNO = '5'
-> AND PNO NOT IN
-> (SELECT PNO
-> FROM WORKS_ON AS W
-> WHERE E.SSN = W.SSN));
```

```
| FNAME | LNAME |
```

```
| JAMES | SMITH |
```

```
1 row in set (0.00 sec)
```

```
mysql> SELECT * FROM EMPLOYEE;
```

SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	SUPER_SSN	DNO
ABCDACC01	AHANA	K	MANGALORE	F	350000.00	ABCDACC02	1
ABCDACC02	SANTOSH	KUMAR	MANGALORE	M	300000.00	NULL	1
ABCDCE01	JAMES	SMITH	BANGALORE	M	500000.00	ABCDCE02	5
ABCDCE02	HEARN	BAKER	BANGALORE	M	700000.00	ABCDCE03	5
ABCDCE03	EDWARD	SCOTT	MYSORE	M	500000.00	ABCDCE04	5
ABCDCE04	PAVAN	HEGDE	MANGALORE	M	650000.00	ABCDCE05	5
ABCDCE05	GIRISH	MALYA	MYSORE	M	450000.00	ABCDCE06	5
ABCDCE06	ALICE	SMITH	BANGALORE	F	800000.00	NULL	5
ABCECE01	JOHN	SCOTT	BANGALORE	M	500000.00	NULL	3
ABCDIIT01	NAGESH	HR	BANGALORE	M	500000.00	NULL	2
ABCDISE01	VEENA	M	MYSORE	F	600000.00	NULL	4

```
11 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM DEPARTMENT;
```

DNO	DNAME	MGR_SSN	MGR_START_DATE
1	ACCOUNTS	ABCDACC02	2001-01-01
2	IT	ABCDIIT01	2016-08-01
3	ECE	ABCECE01	2008-06-01
4	ISE	ABCDISE01	2015-06-01
5	CSE	ABCDCE05	2002-06-01

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

```
mysql> SELECT D1.DNO, COUNT(*)  
-> FROM DEPARTMENT AS D1, EMPLOYEE AS E1  
-> WHERE D1.DNO = E1.DNO AND E1.SALARY >= '600000' AND D1.DNO IN  
-> (SELECT E2.DNO  
-> FROM EMPLOYEE AS E2  
-> GROUP BY E2.DNO  
-> HAVING COUNT(*) > 5)  
-> GROUP BY D1.DNO;
```

DNO	COUNT(*)
5	3

```
1 row in set (0.00 sec)
```

```
mysql>
```



