

# QUESTION 1

1.SELECT s.StudentName  
FROM STUDENT s  
INNER JOIN ENROLLMENT e ON s.RollNo = e.RollNo;

2.SELECT SocName  
FROM SOCIETY;

3.SELECT StudentName  
FROM STUDENT  
WHERE StudentName LIKE 'A%';

4.SELECT \*  
FROM STUDENT  
WHERE Course IN ('computer science', 'chemistry');

5.SELECT StudentName  
FROM STUDENT  
WHERE RollNo LIKE 'X%9' OR RollNo LIKE 'Z%9';

6.SELECT \*  
FROM SOCIETY  
WHERE TotalSeats > N;

7.UPDATE SOCIETY  
SET MentorName = 'NewMentor'  
WHERE SocID = 'SpecificSocID';

8.SELECT s.SocName  
FROM SOCIETY s  
INNER JOIN ENROLLMENT e ON s.SocID = e.SID  
GROUP BY s.SocName  
HAVING COUNT(e.RollNo) > 5;

9.SELECT s.StudentName  
FROM STUDENT s  
INNER JOIN ENROLLMENT e ON s.RollNo = e.RollNo  
WHERE e.SID = 'NSS'  
ORDER BY s.DOB ASC  
LIMIT 1;

10.SELECT s.SocName  
FROM SOCIETY s  
INNER JOIN ENROLLMENT e ON s.SocID = e.SID  
GROUP BY s.SocName  
ORDER BY COUNT(e.RollNo) DESC  
LIMIT 1;

11.SELECT s.SocName  
FROM SOCIETY s  
LEFT JOIN ENROLLMENT e ON s.SocID = e.SID  
GROUP BY s.SocName

ORDER BY COUNT(e.RollNo) ASC  
LIMIT 2;

12.SELECT StudentName  
FROM STUDENT  
WHERE RollNo NOT IN (SELECT RollNo FROM ENROLLMENT);

13.SELECT s.StudentName  
FROM STUDENT s  
INNER JOIN (  
    SELECT RollNo  
    FROM ENROLLMENT  
    GROUP BY RollNo  
    HAVING COUNT(\*) >= 2  
) e ON s.RollNo = e.RollNo;

14.SELECT s.SocName  
FROM SOCIETY s  
INNER JOIN (  
    SELECT SID, COUNT(\*) as EnrolledCount  
    FROM ENROLLMENT  
    GROUP BY SID  
    ORDER BY EnrolledCount DESC  
    LIMIT 1  
) e ON s.SocID = e.SID;

15.SELECT DISTINCT s.StudentName, soc.SocName  
FROM STUDENT s  
LEFT JOIN ENROLLMENT e ON s.RollNo = e.RollNo  
LEFT JOIN SOCIETY soc ON e.SID = soc.SocID;

16.SELECT s.StudentName  
FROM STUDENT s  
INNER JOIN ENROLLMENT e ON s.RollNo = e.RollNo  
INNER JOIN SOCIETY soc ON e.SID = soc.SocID  
WHERE soc.SocName IN ('Debating', 'Dancing', 'Sashakt');

17.SELECT SocName  
FROM SOCIETY  
WHERE MentorName LIKE '%Gupta%';

18.SELECT s.SocName  
FROM SOCIETY s  
INNER JOIN (  
    SELECT SID, COUNT(\*) AS EnrolledCount  
    FROM ENROLLMENT  
    GROUP BY SID  
) e ON s.SocID = e.SID  
WHERE e.EnrolledCount <= 0.1 \* s.TotalSeats;

19.SELECT s.SocName, s.TotalSeats - IFNULL(e.EnrolledCount, 0) AS VacantSeats  
FROM SOCIETY s  
LEFT JOIN (  
    SELECT SID, COUNT(\*) AS EnrolledCount

```
FROM ENROLLMENT
GROUP BY SID
) e ON s.SocID = e.SID;
```

```
20.UPDATE SOCIETY
SET TotalSeats = TotalSeats * 1.1;
```

```
21.ALTER TABLE ENROLLMENT
ADD COLUMN EnrollmentFeesPaid ENUM('yes', 'No') DEFAULT 'No';
```

```
22.UPDATE ENROLLMENT
SET DateOfEnrollment = CASE
    WHEN SID = 's1' THEN '2018-01-15'
    WHEN SID = 's2' THEN CURRENT_DATE()
    WHEN SID = 's3' THEN '2018-01-02'
    ELSE DateOfEnrollment
END
WHERE SID IN ('s1', 's2', 's3');
```

```
23.CREATE VIEW SocietyEnrollmentCount AS
SELECT s.SocName, COUNT(e.RollNo) AS TotalEnrolled
FROM SOCIETY s
LEFT JOIN ENROLLMENT e ON s.SocID = e.SID
GROUP BY s.SocName;
```

```
24.SELECT s.StudentName
FROM STUDENT s
WHERE NOT EXISTS (
    SELECT SocID
    FROM SOCIETY
    WHERE NOT EXISTS (
        SELECT *
        FROM ENROLLMENT e
        WHERE e.SID = SOCIETY.SocID AND e.RollNo = s.RollNo
    )
);
```

```
25.SELECT COUNT(*)
FROM (
    SELECT SID
    FROM ENROLLMENT
    GROUP BY SID
    HAVING COUNT(*) > 5
) AS SocietyCount;
```

```
26.ALTER TABLE STUDENT
ADD COLUMN MobileNumber VARCHAR(15) DEFAULT '9999999999';
```

```
27.SELECT COUNT(*)
FROM STUDENT
WHERE DATEDIFF(CURRENT_DATE(), DOB) > 20*365.25;
```

```
28.SELECT DISTINCT s.StudentName
FROM STUDENT s
```

```
INNER JOIN ENROLLMENT e ON s.RollNo = e.RollNo
WHERE YEAR(s.DOB) = 2001;
```

```
29.SELECT COUNT(*)
FROM (
    SELECT SocID
    FROM SOCIETY
    WHERE SocName LIKE 'S%' AND
        SocID IN (
            SELECT SID
            FROM ENROLLMENT
            GROUP BY SID
            HAVING COUNT(*) >= 5
        )
) AS SocietyCount;
```

```
30.SELECT s.SocName, s.MentorName, s.TotalSeats, IFNULL(e.TotalEnrolled, 0) AS
TotalEnrolled,
    (s.TotalSeats - IFNULL(e.TotalEnrolled, 0)) AS UnfilledSeats
FROM SOCIETY s
LEFT JOIN (
    SELECT SID, COUNT(*) AS TotalEnrolled
    FROM ENROLLMENT
    GROUP BY SID
) e ON s.SocID = e.SID;
```

## QUESTION 2

## QUESTION 3

```
from datetime import datetime
```

```
import time
```

```
import numpy as np
```

```
import mysql.connector as sql
```

```
def execute_query(query):
```

```
    db = sql.connect(host='localhost',
                    user='root',
                    password='1234',
                    auth_plugin='mysql_native_password',
                    database='STUDENT_SOCIETY')
```

```
cur = db.cursor()

cur.execute(query)

result = cur.fetchall()

for row in result:
    print(row[0])

cur.close()
db.close()

def main():

    query1 = "SELECT studentname FROM enrollment, student WHERE enrollment.rollno = student.rollno"
    print("Query 1:")
    execute_query(query1)

    query2 = "SELECT socname FROM society"
    print("\nQuery 2:")
    execute_query(query2)

    query3 = "SELECT studentname FROM student WHERE studentname LIKE 'A%'"
    print("\nQuery 3:")
    execute_query(query3)

    query4 = "SELECT * FROM student WHERE course='CS'"
    print("\nQuery 4:")
    execute_query(query4)

    query5 = "SELECT studentname FROM student WHERE rollno LIKE '1%9'"
    print("\nQuery 5:")
```

```
execute_query(query5)
```

```
query6 = "SET @N = 10; \
```

```
    SELECT * FROM society WHERE totalseats > 10"
```

```
print("\nQuery 6:")
```

```
execute_query(query6)
```

```
query7 = "UPDATE society SET mentorname = 'Ankush Goyal' WHERE socname = 'Anhad'"
```

```
print("\nQuery 7:")
```

```
q7 = "SELECT * FROM society"
```

```
execute_query(q7)
```

```
query8 = "SELECT socname from enrollment, society group by socname having count(enrollment.sid) > 5 ;"
```

```
print("\nQuery 8:")
```

```
execute_query(query8)
```

```
query9 = "SELECT studentname from student where DOB = (SELECT min(DOB) from student) "
```

```
print("\nQuery 9:")
```

```
execute_query(query9)
```

```
#query10 = "SELECT socname from society join enrollment on society.socid = enrollment.sid group by  
society.socname order by count (enrollment.rollno) desc limit 1 ;"
```

```
#print("\nQuery 10:")
```

```
#execute_query(query10)
```

```
#query11 = "SELECT s.socname from society s left join enrollment e on s.socid = e.sid group by s.socname  
order by count (e.rollno) ASC limit 2 ;"
```

```
#print("\nQuery 11:")
```

```
#execute_query(query11)
```

```
if __name__ == "__main__":
```

```
    main()
```

Query 1:

Ansh

Shivil

Aman

Bhaumik

Divya

Saksham

Vansh

Manya

Arjun

Chahat

Query 2:

Vagmita

Anhad

BLITZ

Modulus

Naksh

Query 3:

Aman

Arjun

Ansh

Query 4:

101

104

Query 5:  
Vansh

Query 6:

Query 7:  
A02  
Q91  
S04  
T71  
Z17

Query 8:  
Naksh  
Modulus  
BLITZ  
Anhad  
Vagmita

Query 9:  
Aman

## QUESTION 4

```
mysql> create database COMPANY  
-> ;  
Query OK, 1 row affected (0.02 sec)
```



```
mysql> show databases
-> ;
```

Database
company
information_schema
mysql
performance_schema
sys

```
5 rows in set (0.02 sec)
```

```
mysql> create table EMPLOYEE
-> (Fname varchar(15) NOT NULL,
-> Minit char,
-> Lname varchar(15) NOT NULL,
-> Ssn char (9) NOT NULL,
-> Bdate date,
-> Address varchar(30),
-> sex char,
-> Salary decimal(10,2),
-> Super_ssn char(9),
-> Dno int NOT NULL,
-> primary key (Ssn)
-> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table DEPARTMENT(
-> Dname varchar(15) NOT NULL,
-> Dnumber int NOT NULL,
-> Mgr_Ssn char(9) NOT NULL,
-> Mgr_start_date date,
-> primary key (Dnumber),
-> unique(Dname),
-> foreign key(Mgr_Ssn) references EMPLOYEE(Ssn)
-> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table DEPT_LOCATIONS (
-> Dnumber int not null,
-> Dlocation varchar(15),
-> primary key(Dnumber,Dlocation),
-> foreign key (Dnumber) references DEPARTMENT(Dnumber)
-> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table PROJECT (  
    -> Pname varchar(15) not null,  
    -> Pnumber int not null,  
    -> plocation varchar(15),  
    -> Dnum int not null,  
    -> primary key (Pnumber),  
    -> unique (Pname),  
    -> foreign key (Dnum) references DEPARTMENT(Dnumber)  
    -> );  
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table WORKS_ON(  
    -> Essn char(9) not null,  
    -> Pno int not null,  
    -> Hours decimal(3,1) not null,  
    -> primary key(Essn,Pno),  
    -> foreign key (Essn) references EMPLOYEE(Ssn),  
    -> foreign key (Pno) references PROJECT(Pnumber)  
    -> );  
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> create table DEPENDENT(  
    -> Essn char(9) not null,  
    -> Dependent_name varchar(15) not null,  
    -> Sex char,  
    -> Bdate date,  
    -> Relationship varchar(8),  
    -> primary key(Essn,Dependent_name),  
    -> foreign key (Essn) references EMPLOYEE (Ssn)  
    -> );  
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> show tables  
    -> ;  
+-----+  
| Tables_in_company |  
+-----+  
| department         |  
| dependent          |  
| dept_locations     |  
| employee           |  
| project             |  
| works_on           |  
+-----+
```

```

mysql> INSERT INTO EMPLOYEE (Fname, Minit, Lname, Ssn, Bdate, Address, sex, Salary, Super_ssn, Dno)
-> VALUES
-> ('John', 'D', 'Doe', '123456789', '1990-05-15', '123 Main St, City', 'M', 50000.00, NULL, 5),
-> ('Jane', 'M', 'Smith', '234567890', '1992-08-25', '456 Oak St, Town', 'F', 60000.00, '123456789', 5),
-> ('Mike', 'L', 'Johnson', '345678901', '1988-11-10', '789 Elm St, Village', 'M', 55000.00, '123456789', 5),
-> ('Emily', 'J', 'Brown', '456789012', '1995-04-20', '987 Pine St, Hamlet', 'F', 48000.00, '234567890', 6),
-> ('David', 'A', 'Lee', '567890123', '1998-12-30', '654 Maple St, County', 'M', 52000.00, '345678901', 7);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> INSERT INTO DEPARTMENT (Dname, Dnumber, Mgr_Ssn, Mgr_start_date)
-> VALUES
-> ('HR', 5, '123456789', '2020-01-01'),
-> ('Finance', 6, '234567890', '2019-05-01'),
-> ('IT', 7, '345678901', '2022-03-15'),
-> ('Marketing', 8, '456789012', '2021-09-10'),
-> ('Sales', 9, '567890123', '2023-02-20');
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> INSERT INTO DEPT_LOCATIONS (Dnumber, Dlocation)
-> VALUES
-> (5, 'New York'),
-> (6, 'Chicago'),
-> (7, 'Los Angeles'),
-> (8, 'Houston'),
-> (9, 'San Francisco');
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

```

mysql> INSERT INTO PROJECT (Pname, Pnumber, plocation, Dnum)
-> VALUES
-> ('HR Upgrade', 1, 'New York', 5),
-> ('Finance Tool', 2, 'Chicago', 6),
-> ('Web Redesign', 3, 'Los Angeles', 7),
-> ('Product Launch', 4, 'Houston', 8),
-> ('Sales Training', 5, 'San Francisco', 9);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

```

mysql> INSERT INTO WORKS_ON (Essn, Pno, Hours)
-> VALUES
-> ('123456789', 1, 40.0),
-> ('234567890', 2, 35.5),
-> ('345678901', 3, 42.0),
-> ('456789012', 4, 38.5),
-> ('567890123', 5, 41.0);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

```

mysql> INSERT INTO DEPENDENT (Essn, Dependent_name, Sex, Bdate, Relationship)
-> VALUES
-> ('123456789', 'Alice Doe', 'F', '2010-03-20', 'Daughter'),
-> ('234567890', 'Bob Smith', 'M', '2008-07-10', 'Son'),
-> ('345678901', 'Emily Johnson', 'F', '2015-11-05', 'Daughter'),
-> ('456789012', 'James Brown', 'M', '2012-09-15', 'Son'),
-> ('567890123', 'Sophia Lee', 'F', '2018-05-25', 'Daughter');
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

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

Fname	Minit	Lname	Ssn	Bdate	Address	sex	Salary	Super_ssn	Dno
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5
Emily	J	Brown	456789012	1995-04-20	987 Pine St, Hamlet	F	48000.00	234567890	6
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7

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

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

Dname	Dnumber	Mgr_Ssn	Mgr_start_date
HR	5	123456789	2020-01-01
Finance	6	234567890	2019-05-01
IT	7	345678901	2022-03-15
Marketing	8	456789012	2021-09-10
Sales	9	567890123	2023-02-20

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

```
mysql> SELECT * FROM DEPT_LOCATIONS;
```

Dnumber	Dlocation
5	New York
6	Chicago
7	Los Angeles
8	Houston
9	San Francisco

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

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

Pname	Pnumber	plocation	Dnum
HR Upgrade	1	New York	5
Finance Tool	2	Chicago	6
Web Redesign	3	Los Angeles	7
Product Launch	4	Houston	8
Sales Training	5	San Francisco	9

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

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

Essn	Pno	Hours
123456789	1	40.0
234567890	2	35.5
345678901	3	42.0
456789012	4	38.5
567890123	5	41.0

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

```
mysql> SELECT * FROM DEPENDENT;
```

Essn	Dependent_name	Sex	Bdate	Relationship
123456789	Alice Doe	F	2010-03-20	Daughter
234567890	Bob Smith	M	2008-07-10	Son
345678901	Emily Johnson	F	2015-11-05	Daughter
456789012	James Brown	M	2012-09-15	Son
567890123	Sophia Lee	F	2018-05-25	Daughter

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

```
mysql> SELECT Bdate, Address
-> FROM EMPLOYEE
-> WHERE Fname = 'John' AND Minit = 'D' AND Lname = 'Doe';
```

Bdate	Address
1990-05-15	123 Main St, City

1 row in set (0.00 sec)

```
mysql> SELECT Fname, Lname, Address
-> FROM EMPLOYEE, DEPARTMENT
-> WHERE Dname='HR' AND Dnumber=Dno;
```

Fname	Lname	Address
John	Doe	123 Main St, City
Jane	Smith	456 Oak St, Town
Mike	Johnson	789 Elm St, Village

3 rows in set (0.00 sec)

```
mysql> SELECT Pnumber, Dnum, Lname, Address, Bdate
-> FROM PROJECT, DEPARTMENT, EMPLOYEE
-> WHERE Dnum = Dnumber AND Mgr_ssn = Ssn AND
-> Plocation = 'Chicago';
```

Pnumber	Dnum	Lname	Address	Bdate
2	6	Smith	456 Oak St, Town	1992-08-25

1 row in set (0.00 sec)

```
mysql> SELECT E.Fname, E.Lname, S.Fname, S.Lname
-> FROM EMPLOYEE AS E, EMPLOYEE AS S
-> WHERE E.Super_ssn = S.Ssn;
```

Fname	Lname	Fname	Lname
Jane	Smith	John	Doe
Mike	Johnson	John	Doe
Emily	Brown	Jane	Smith
David	Lee	Mike	Johnson

4 rows in set (0.00 sec)

```
mysql> SELECT E.Fname, E.LName, E.Address
-> FROM EMPLOYEE AS E, DEPARTMENT AS D
-> WHERE D.DName = 'HR' AND D.Dnumber = E.Dno;
ERROR 1054 (42S22): Unknown column 'HR' in 'where clause'
```

```
mysql> SELECT E.Fname, E.Lname, S.Fname, S.Lname
-> FROM EMPLOYEE AS E, EMPLOYEE AS S
-> WHERE E.Super_ssn = S.Ssn;
```

Fname	Lname	Fname	Lname
Jane	Smith	John	Doe
Mike	Johnson	John	Doe
Emily	Brown	Jane	Smith
David	Lee	Mike	Johnson

4 rows in set (0.00 sec)

```
mysql> SELECT E.Fname, E.LName, E.Address
-> FROM EMPLOYEE AS E, DEPARTMENT AS D
-> WHERE D.DName = 'Finance' AND D.Dnumber = E.Dno;
ERROR 1054 (42S22): Unknown column 'Finance' in 'where clause'
```

```
mysql> SELECT E.Fname, E.LName, E.Address
-> FROM EMPLOYEE AS E, DEPARTMENT AS D
-> WHERE D.DName = 'Finance' AND D.Dnumber = E.Dno;
```

Fname	LName	Address
Emily	Brown	987 Pine St, Hamlet

```
mysql> SELECT Ssn  
-> FROM EMPLOYEE;
```

Ssn
123456789
234567890
345678901
456789012
567890123

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

```
mysql>  
mysql> SELECT Ssn, Dname  
-> FROM EMPLOYEE, DEPARTMENT;
```

Ssn	Dname
567890123	Finance
456789012	Finance
345678901	Finance
234567890	Finance
123456789	Finance
567890123	HR
456789012	HR
345678901	HR
234567890	HR
123456789	HR
567890123	IT
456789012	IT
345678901	IT
234567890	IT
123456789	IT
567890123	Marketing
456789012	Marketing
345678901	Marketing
234567890	Marketing
123456789	Marketing
567890123	Sales
456789012	Sales
345678901	Sales
234567890	Sales
123456789	Sales

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



```
mysql> SELECT *
-> FROM EMPLOYEE
-> WHERE Dno = 5;
```

Fname	Minit	Lname	Ssn	Bdate	Address	sex	Salary	Super_ssn	Dno
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5

3 rows in set (0.00 sec)

```
mysql> SELECT *
-> FROM EMPLOYEE, DEPARTMENT
-> WHERE Dname = 'Sales' AND Dno = Dnumber;
```

Empty set (0.00 sec)

```
mysql> SELECT *
-> FROM EMPLOYEE, DEPARTMENT
-> WHERE Dname = 'IT' AND Dno = Dnumber;
```

Fname	Minit	Lname	Ssn	Bdate	Address	sex	Salary	Super_ssn	Dno	Dname	Dnumber	Mgr_Ssn	Mgr_start_date
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7	IT	7	345678901	2022-03-15

1 row in set (0.00 sec)

```
mysql> SELECT *
-> FROM EMPLOYEE, DEPARTMENT;
```

Fname	Minit	Lname	Ssn	Bdate	Address	sex	Salary	Super_ssn	Dno	Dname	Dnumber	Mgr_Ssn	Mgr_start_date
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7	HR	5	123456789	2020-01-01
Emily	J	Brown	456789012	1995-04-20	987 Pine St, Hamlet	F	48000.00	234567890	6	HR	5	123456789	2020-01-01
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5	HR	5	123456789	2020-01-01
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5	HR	5	123456789	2020-01-01
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5	HR	5	123456789	2020-01-01
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7	Finance	6	234567890	2019-05-01
Emily	J	Brown	456789012	1995-04-20	987 Pine St, Hamlet	F	48000.00	234567890	6	Finance	6	234567890	2019-05-01
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5	Finance	6	234567890	2019-05-01
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5	Finance	6	234567890	2019-05-01
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5	Finance	6	234567890	2019-05-01
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7	IT	7	345678901	2022-03-15
Emily	J	Brown	456789012	1995-04-20	987 Pine St, Hamlet	F	48000.00	234567890	6	IT	7	345678901	2022-03-15
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5	IT	7	345678901	2022-03-15
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5	IT	7	345678901	2022-03-15
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5	IT	7	345678901	2022-03-15
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7	Marketing	8	456789012	2021-09-10
Emily	J	Brown	456789012	1995-04-20	987 Pine St, Hamlet	F	48000.00	234567890	6	Marketing	8	456789012	2021-09-10
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5	Marketing	8	456789012	2021-09-10
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5	Marketing	8	456789012	2021-09-10
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5	Marketing	8	456789012	2021-09-10
David	A	Lee	567890123	1998-12-30	654 Maple St, County	M	52000.00	345678901	7	Sales	9	567890123	2023-02-20
Emily	J	Brown	456789012	1995-04-20	987 Pine St, Hamlet	F	48000.00	234567890	6	Sales	9	567890123	2023-02-20
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5	Sales	9	567890123	2023-02-20
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5	Sales	9	567890123	2023-02-20
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5	Sales	9	567890123	2023-02-20

25 rows in set (0.00 sec)

```
mysql> SELECT ALL Salary  
-> FROM EMPLOYEE;
```

Salary
50000.00
60000.00
55000.00
48000.00
52000.00

5 rows in set (0.00 sec)

```
mysql> SELECT DISTINCT Salary  
-> FROM EMPLOYEE;
```

Salary
50000.00
60000.00
55000.00
48000.00
52000.00

5 rows in set (0.00 sec)

```
mysql> ( SELECT DISTINCT Pnumber
-> FROM PROJECT, DEPARTMENT, EMPLOYEE
-> WHERE Dnum = Dnumber AND Mgr_ssn = Ssn
-> AND Lname = 'Smith' )
-> UNION
-> ( SELECT DISTINCT Pnumber
-> FROM PROJECT, WORKS_ON, EMPLOYEE
-> WHERE Pnumber = Pno AND Essn = Ssn
-> AND Lname = 'Smith');
```

```
+-----+
| Pnumber |
+-----+
|      2 |
+-----+
```

1 row in set (0.00 sec)

```
mysql> SELECT Fname, Lname
-> FROM EMPLOYEE
-> WHERE Address LIKE 'Town%';
Empty set (0.00 sec)
```

```
mysql> SELECT Fname, Lname
-> FROM EMPLOYEE
-> WHERE Address LIKE '%Town%';
```

```
+-----+-----+
| Fname | Lname |
+-----+-----+
| Jane  | Smith |
+-----+-----+
```

1 row in set (0.00 sec)

```
mysql> SELECT Fname, Lname
-> FROM EMPLOYEE
-> WHERE Bdate LIKE '__7%';
Empty set (0.00 sec)
```

```
mysql> SELECT Fname, Lname
-> FROM EMPLOYEE
-> WHERE Bdate LIKE '__8%';
```

```
+-----+-----+
| Fname | Lname |
+-----+-----+
| Mike  | Johnson |
+-----+-----+
```

1 row in set (0.00 sec)

```
mysql> SELECT E.Fname, E.Lname, 1.1 * E.Salary AS Increased_sal
-> FROM EMPLOYEE AS E, WORKS_ON AS W, PROJECT AS P
-> WHERE E.Ssn = W.Essn AND W.Pno = P.Pnumber AND
-> P.Pname = 'ProductX';
Empty set (0.00 sec)
```

```
mysql> SELECT E.Fname, E.Lname, 1.1 * E.Salary AS Increased_sal
-> FROM EMPLOYEE AS E, WORKS_ON AS W, PROJECT AS P
-> WHERE E.Ssn = W.Essn AND W.Pno = P.Pnumber AND
-> P.Pname = 'Sales Training';
```

Fname	Lname	Increased_sal
David	Lee	57200.000

1 row in set (0.00 sec)

```
mysql> SELECT *
-> FROM EMPLOYEE
-> WHERE (Salary BETWEEN 50000 AND 60000) AND Dno = 5;
```

Fname	Minit	Lname	Ssn	Bdate	Address	sex	Salary	Super_ssn	Dno
John	D	Doe	123456789	1990-05-15	123 Main St, City	M	50000.00	NULL	5
Jane	M	Smith	234567890	1992-08-25	456 Oak St, Town	F	60000.00	123456789	5
Mike	L	Johnson	345678901	1988-11-10	789 Elm St, Village	M	55000.00	123456789	5

3 rows in set (0.00 sec)

```
mysql> SELECT D.Dname, E.Lname, E.Fname, P.Pname
-> FROM DEPARTMENT AS D, EMPLOYEE AS E, WORKS_ON AS W,
-> PROJECT AS P
-> WHERE D.Dnumber = E.Dno AND E.Ssn = W.Essn AND W.Pno =
-> P.Pnumber
-> ORDER BY D.Dname, E.Lname, E.Fname;
```

Dname	Lname	Fname	Pname
Finance	Brown	Emily	Product Launch
HR	Doe	John	HR Upgrade
HR	Johnson	Mike	Web Redesign
HR	Smith	Jane	Finance Tool
IT	Lee	David	Sales Training

5 rows in set (0.00 sec)

```
mysql> SELECT D.Dname, E.Lname, E.Fname, P.Pname
-> FROM DEPARTMENT AS D, EMPLOYEE AS E, WORKS_ON AS W,
-> PROJECT AS P
-> WHERE D.Dnumber = E.Dno AND E.Ssn = W.Essn AND W.Pno =
-> P.Pnumber
-> ORDER BY D.Dname DESC, E.Lname ASC, E.Fname ASC;
```

Dname	Lname	Fname	Pname
IT	Lee	David	Sales Training
HR	Doe	John	HR Upgrade
HR	Johnson	Mike	Web Redesign
HR	Smith	Jane	Finance Tool
Finance	Brown	Emily	Product Launch

5 rows in set (0.00 sec)

```

mysql> INSERT INTO EMPLOYEE
-> VALUES ('Richard', 'K', 'Marini', '653298653', '1962-12-30', '98 Oak Forest, Katy, TX', 'M', 37000, '653298653', 4);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EMPLOYEE (Fname, Lname, Dno, Ssn)
-> VALUES ('Richard', 'Marini', 4, '653298653');
ERROR 1062 (23000): Duplicate entry '653298653' for key 'employee.PRIMARY'
mysql> INSERT INTO EMPLOYEE (Fname, Lname, Ssn, Dno)
-> VALUES ('Robert', 'Hatcher', '980760540', 2);
Query OK, 1 row affected (0.01 sec)

mysql> CREATE TABLE WORKS_ON_INFO
-> ( Emp_name VARCHAR(15),
-> Proj_name VARCHAR(15),
-> Hours_per_week DECIMAL(3,1) );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO WORKS_ON_INFO ( Emp_name, Proj_name,
-> Hours_per_week )
-> SELECT E.Lname, P.Pname, W.Hours
-> FROM PROJECT P, WORKS_ON W, EMPLOYEE E
-> WHERE P.Pnumber = W.Pno AND W.Essn = E.Ssn;
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> INSERT INTO WORKS_ON_INFO ( Emp_name, Proj_name,
-> Hours_per_week )
-> SELECT E.Lname, P.Pname, W.Hours
-> FROM PROJECT P, WORKS_ON W, EMPLOYEE E
-> WHERE P.Pnumber = W.Pno AND W.Essn = E.Ssn;
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```

```

mysql> DELETE FROM EMPLOYEE
-> WHERE Lname = 'Lee';
ERROR 1054 (42522): Unknown column 'Lee' in 'where clause'
mysql> DELETE FROM EMPLOYEE
-> WHERE Lname = 'Lee';
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails ('company`.`department`, CONSTRAINT `department_ibfk_1` FOREIGN KEY (`Mgr_Ssn`) REFERENCES `employee` (`Ssn`))
mysql> DELETE FROM EMPLOYEE
-> WHERE Dno = 5;
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails ('company`.`department`, CONSTRAINT `department_ibfk_1` FOREIGN KEY (`Mgr_Ssn`) REFERENCES `employee` (`Ssn`))
mysql> UPDATE PROJECT
-> SET Plocation = 'Bellaire', Dnum = 5
-> WHERE Pnumber = 10;
ERROR 1054 (42522): Unknown column 'Bellaire' in 'field list'
mysql> UPDATE PROJECT
-> SET Plocation = 'Bellaire', Dnum = 5
-> WHERE Pnumber=10;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 0 Changed: 0 Warnings: 0

mysql> UPDATE EMPLOYEE
-> SET Salary = Salary * 1.1
-> WHERE Dno = 5;
Query OK, 3 rows affected (0.00 sec)
Rows matched: 3 Changed: 3 Warnings: 0

```