

```
1  CREATE DATABASE IF NOT EXISTS A3;
2  USE A3;
3
4  -- Create Tables
5
6  CREATE TABLE IF NOT EXISTS Dept(
7      DeptID INT PRIMARY KEY,
8      DeptName VARCHAR(50)
9  );
10
11 CREATE TABLE IF NOT EXISTS Emp(
12     EmpID INT PRIMARY KEY,
13     EmpName VARCHAR(50),
14     DeptID INT,
15     Salary DECIMAL(10,2),
16     ManagerID INT,
17     FOREIGN KEY (DeptID) REFERENCES Dept(DeptID),
18     FOREIGN KEY (ManagerID) REFERENCES Emp(EmpID)
19 );
20
21 CREATE TABLE IF NOT EXISTS Company(
22     CompID INT PRIMARY KEY,
23     CompName VARCHAR(50)
24 );
25
26 CREATE TABLE IF NOT EXISTS Emp_Comp(
27     EmpID INT,
28     CompID INT,
29     PRIMARY KEY(EmpID, CompID),
30     FOREIGN KEY(EmpID) REFERENCES Emp(EmpID),
31     FOREIGN KEY(CompID) REFERENCES Company(CompID)
32 );
33
34 CREATE TABLE IF NOT EXISTS Instructor(
35     InstrID INT PRIMARY KEY,
36     InstrName VARCHAR(50),
37     DeptID INT,
38     FOREIGN KEY(DeptID) REFERENCES Dept(DeptID)
39 );
40
41 CREATE TABLE IF NOT EXISTS Course(
42     CourseID VARCHAR(10) PRIMARY KEY,
43     Title VARCHAR(50),
44     DeptID INT,
45     InstrID INT,
46     FOREIGN KEY(DeptID) REFERENCES Dept(DeptID),
47     FOREIGN KEY(InstrID) REFERENCES Instructor(InstrID)
```

```
48 );  
49
```

```
50 CREATE TABLE IF NOT EXISTS Student(  
51     StudentID INT PRIMARY KEY,  
52     StudentName VARCHAR(50),  
53     DeptID INT,  
54     FOREIGN KEY(DeptID) REFERENCES Dept(DeptID)  
55 );  
56  
57 CREATE TABLE IF NOT EXISTS Student_Course(  
58     StudentID INT,  
59     CourseID VARCHAR(10),  
60     PRIMARY KEY(StudentID, CourseID),  
61     FOREIGN KEY(StudentID) REFERENCES Student(StudentID),  
62     FOREIGN KEY(CourseID) REFERENCES Course(CourseID)  
63 );  
64  
65 CREATE TABLE IF NOT EXISTS Deposit(  
66     DepositID INT PRIMARY KEY,  
67     EmpID INT,  
68     Amount DECIMAL(10,2),  
69     FOREIGN KEY(EmpID) REFERENCES Emp(EmpID)  
70 );  
71  
72 CREATE TABLE IF NOT EXISTS Borrow(  
73     BorrowID INT PRIMARY KEY,  
74     EmpID INT,  
75     Amount DECIMAL(10,2),  
76     FOREIGN KEY(EmpID) REFERENCES Emp(EmpID)  
77 );  
78  
79 -- Insert Data  
80 INSERT INTO Dept VALUES  
81 (1,'Computer Science'),  
82 (2,'Information Technology');  
83  
84 INSERT INTO Emp VALUES  
85 (101,'Ramesh',1,80000,NULL),  
86 (102,'Suresh',2,75000,101);  
87  
88 INSERT INTO Company VALUES  
89 (1,'TCS'),  
90 (2,'Infosys');  
91  
92 INSERT INTO Emp_Comp VALUES  
93 (101,1),  
94 (102,2);  
95  
96 INSERT INTO Instructor VALUES  
97 (201,'Dr. Ramesh',1),
```

```
98      (202,'Dr. Suresh',2);
99
100  INSERT INTO Course VALUES
101      ('CS101','DBMS',1,201),
102      ('IT101','Networking',2,202);
103
104  INSERT INTO Student VALUES
105      (301,'Rahul',1),
106      (302,'Neha',2);
107
108  INSERT INTO Student_Course VALUES
109      (301,'CS101'),
110      (302,'IT101');
111
112  INSERT INTO Deposit VALUES
113      (601,101,5000);
114
115  INSERT INTO Borrow VALUES
116      (701,102,3000);
117
```

## Views (3 Queries)

```
mysql> -- Views
mysql> CREATE OR REPLACE VIEW Deposit_View AS
    -> SELECT EmpID, Amount FROM Deposit;
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> CREATE OR REPLACE VIEW Borrow_View AS
    -> SELECT EmpID, Amount FROM Borrow;
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> CREATE OR REPLACE VIEW comp_sci_course_info AS
    -> SELECT c.CourseID, c.Title
    -> FROM Course c
    -> JOIN Dept d ON c.DeptID = d.DeptID
    -> WHERE d.DeptName = 'Computer Science';
Query OK, 0 rows affected (0.00 sec)
```

## Join Queries (7 Queries)

```
mysql> SELECT e.EmpName, d.DeptName
-> FROM Emp e
-> JOIN Dept d ON e.DeptID = d.DeptID;
```

EmpName	DeptName
Ramesh	Computer Science
Suresh	Information Technology

2 rows in set (0.00 sec)

```
mysql>
mysql> SELECT e.EmpName, m.EmpName AS ManagerName
-> FROM Emp e
-> LEFT JOIN Emp m ON e.ManagerID = m.EmpID;
```

EmpName	ManagerName
Ramesh	NULL
Suresh	Ramesh

2 rows in set (0.00 sec)

```
mysql>
mysql> SELECT i.InstrName, c.Title
-> FROM Instructor i
-> LEFT JOIN Course c ON i.InstrID = c.InstrID;
```

InstrName	Title
Dr. Ramesh	DBMS
Dr. Suresh	Networking

2 rows in set (0.00 sec)

```
mysql>
mysql> SELECT s.StudentName, c.Title
-> FROM Student s
-> JOIN Student_Course sc ON s.StudentID = sc.StudentID
-> JOIN Course c ON sc.CourseID = c.CourseID;
```

StudentName	Title
Rahul	DBMS
Neha	Networking

2 rows in set (0.00 sec)

```
mysql> SELECT e.EmpName, c.CompName
-> FROM Emp e
-> JOIN Emp_Comp ec ON e.EmpID = ec.EmpID
-> JOIN Company c ON ec.CompID = c.CompID;
```

EmpName	CompName
Ramesh	TCS
Suresh	Infosys

2 rows in set (0.00 sec)

```
mysql> SELECT i.InstrName, d.DeptName
-> FROM Instructor i
-> JOIN Dept d ON i.DeptID = d.DeptID;
+-----+-----+
| InstrName | DeptName |
+-----+-----+
| Dr. Ramesh | Computer Science |
| Dr. Suresh | Information Technology |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
mysql> SELECT s.StudentName, d.DeptName
-> FROM Student s
-> JOIN Dept d ON s.DeptID = d.DeptID;
+-----+-----+
| StudentName | DeptName |
+-----+-----+
| Rahul | Computer Science |
| Neha | Information Technology |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
mysql> SELECT EmpName, Salary
-> FROM Emp
-> WHERE Salary > 75000;
+-----+-----+
| EmpName | Salary |
+-----+-----+
| Ramesh | 80000.00 |
+-----+-----+
1 row in set (0.00 sec)
```

## Subquery (8 queries)

```
mysql> SELECT EmpName
-> FROM Emp
-> WHERE DeptID = (SELECT DeptID FROM Dept WHERE DeptName='Computer Science');
+-----+
| EmpName |
+-----+
| Ramesh |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> SELECT EmpName
-> FROM Emp
-> WHERE DeptID <> (SELECT DeptID FROM Dept WHERE DeptName='Computer Science');
+-----+
| EmpName |
+-----+
| Suresh |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> SELECT CompName
-> FROM Company
-> WHERE CompID = (
-> SELECT CompID
-> FROM Emp_Comp
-> GROUP BY CompID
-> ORDER BY COUNT(EmpID) DESC
-> LIMIT 1
-> );
+-----+
| CompName |
+-----+
| TCS |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SELECT Title
-> FROM Course
-> WHERE InstrID IN (SELECT InstrID FROM Instructor WHERE DeptID=1);
```

```
+-----+
| Title |
+-----+
| DBMS  |
+-----+
```

1 row in set (0.00 sec)

```
mysql>
mysql> SELECT StudentName
-> FROM Student
-> WHERE StudentID IN (SELECT StudentID FROM Student_Course);
```

```
+-----+
| StudentName |
+-----+
| Rahul       |
| Neha        |
+-----+
```

2 rows in set (0.00 sec)

```
mysql>
mysql> SELECT DeptName
-> FROM Dept
-> WHERE DeptID IN (SELECT DeptID FROM Student);
```

```
+-----+
| DeptName |
+-----+
| Computer Science |
| Information Technology |
+-----+
```

2 rows in set (0.00 sec)

```
mysql>
mysql> SELECT EmpName
-> FROM Emp
-> WHERE Salary = (SELECT MAX(Salary) FROM Emp);
```

```
+-----+
| EmpName |
+-----+
| Ramesh  |
+-----+
```

1 row in set (0.00 sec)

```
mysql> SELECT StudentName
-> FROM Student
-> WHERE DeptID = (SELECT DeptID FROM Dept WHERE DeptName='Computer Science');
```

```
+-----+
| StudentName |
+-----+
| Rahul       |
+-----+
```

1 row in set (0.00 sec)

O/p

```
mysql> -- View Queries
mysql> SELECT * FROM Deposit_View;
+-----+-----+
| EmpID | Amount |
+-----+-----+
| 101   | 5000.00 |
+-----+-----+
1 row in set (0.00 sec)

mysql>
mysql> SELECT * FROM Borrow_View;
+-----+-----+
| EmpID | Amount |
+-----+-----+
| 102   | 3000.00 |
+-----+-----+
1 row in set (0.00 sec)

mysql>
mysql> SELECT * FROM comp_sci_course_info;
+-----+-----+
| CourseID | Title |
+-----+-----+
| CS101    | DBMS  |
+-----+-----+
1 row in set (0.00 sec)

mysql>
mysql> SELECT CourseID, Title FROM comp_sci_course_info;
+-----+-----+
| CourseID | Title |
+-----+-----+
| CS101    | DBMS  |
+-----+-----+
1 row in set (0.00 sec)
```