

DBMS - LAB

Assignment - 1

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Class :- MCA 1st Sem

Roll No. :- 14

Question - 2 → Reference Tables

1st Table :- Employee Details

| EmpId | FullName | Manager Id | Date of Joining | City |
|-------|----------------|------------|-----------------|-------------|
| 111 | Amit Sharma | 231 | 2014/01/31 | Bangalore |
| 333 | Rajesh Verma | 654 | 01/30/2020 | Mumbai |
| 555 | Kuldeep Tandon | 543 | 27/11/2016 | New Delhi |
| 112 | Vikas Patel | 321 | 12/13/2014 | Chittorgarh |
| 113 | Deepak Sharma | 231 | 08/12/2015 | Bhilwara |
| 115 | Vijay Patel | 543 | 07/15/2016 | Udaipur |
| 116 | Kamlesh Kumar | 654 | 09/16/2018 | Jaipur |

2nd Table :- Employee Salary

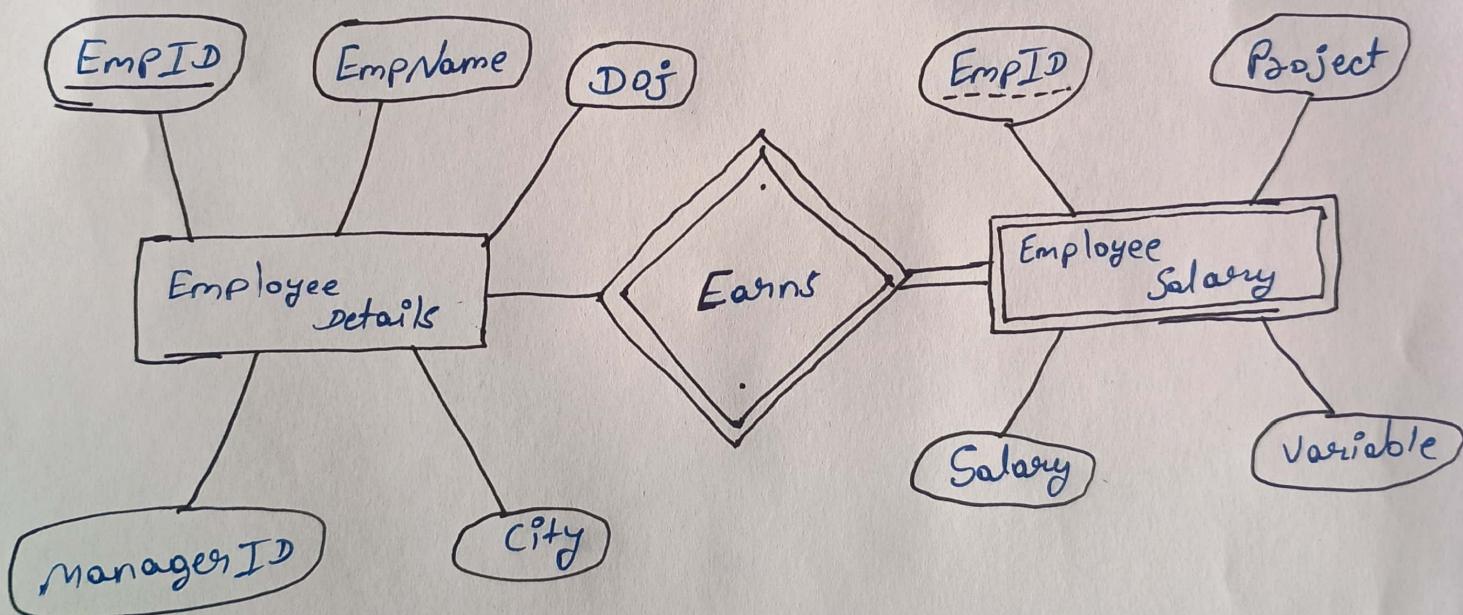
| EmpId | Project | Salary | Variable |
|-------|---------|--------|----------|
| 111 | P1 | 8000 | 500 |
| 333 | P2 | 10000 | 1000 |
| 555 | P1 | 12000 | 0 |
| 112 | P3/NULL | 16000 | 950 |
| 113 | P4 | 15500 | 1250 |

Q.1 → RELATIONAL DIAGRAM

| Employee Details |
|------------------|
| EmpID |
| EmpName |
| Manager ID |
| DoJ |
| City |

| Employee Salary |
|-----------------|
| EmpID |
| Project |
| Salary |
| Variable |

ER DIAGRAM



Answer - I → Table - DB Structure

Table 1st → Employee Details Structure

Code :-

-- Create database 'mca-assign1'

CREATE DATABASE "mca-assign1";

-- Create Table 'EmpDetails'

CREATE TABLE mca-assign1.empdetails (

EmpID Int(10) Not Null,

EmpName Varchar(50) Not Null,

ManageID int(11) Default Null,

DOJ date Not Null,

City Varchar(50) Not Null,

);

-- Adding Primary key to empDetails.

ALTER TABLE mca-assign1.empDetails

ADD Primary Key (EmpID);

-- Inserting Data into Emp Details

INSERT INTO mca-assign1.empdetails
(EmpID, EmpName, ManageID, DOJ, City)

Values

(111, 'Amit Sharma', 231, '2014-01-31', 'Bangalore'),

(112, 'Rajesh Vyas', 654, '2020-11-27', 'Mumbai'),

(113, 'Kuldeep Tondon', 543, '2016-11-27', 'New Delhi'),

(114, 'Vikas Patel', 321, '2014-12-13', 'Chittorgarh'),

(115, 'Deepak Sharma', 231, '2015-08-12', 'Bhilwara'),

(116, 'Vijay Patel', 543, '2016-07-15', 'Udaipur'),

(117, 'Kamlesh Kumar', 654, '2018-09-16', 'Jaipur');

Table 2nd → Employee Salary Structure

Code :-

-- Create table 'EmpSalary'

```
CREATE TABLE mca-assign1.empSalary (
    EmpID int(10) NOT NULL,
    Project varchar(50) DEFAULT NULL,
    Salary int(10) NOT NULL,
    Variable int(10) NOT NULL
);
```

-- Adding Primary key to EmpSalary

```
ALTER TABLE mca-assign1.empSalary
```

```
ADD Primary Key (EmpID);
```

-- Adding Foreign key Using Constraints into EmpSalary

```
ALTER TABLE mca-assign1.empSalary
```

```
ADD Constraints Con1 Foreign Key (EmpID)
```

```
References mca-assign1.empDetails (EmpID)
```

```
ON Delete Cascade ON Update Cascade;
```

-- Inserting Data into EmpSalary

```
INSERT INTO mca-assign1.empSalary
(EmpID, Project, Salary, Variable)
```

Values

```
(111, 'P1', 8000, 500),
```

```
(333, 'P2', 10000, 1000),
```

```
(555, 'P1', 12000, 0),
```

```
(112, NULL, 16000, 950),
```

```
(113, 'P4', 15500, 1250);
```

Structure of Table in Database After Creation

| EmpID | EmpName | Manager ID | DOJ | City |
|-------|----------------|------------|------------|-------------|
| 111 | Amit Sharma | 231 | 2014-01-31 | Bangalore |
| 112 | Vikas Patel | 321 | 2014-12-13 | Chittorgarh |
| 113 | Deepak Sharma | 231 | 2015-08-12 | Bhilwara |
| 115 | Vijay Patel | 543 | 2016-07-15 | Jaipur |
| 116 | Kamlesh Kumar | 654 | 2018-09-16 | |
| 333 | Rajesh Vyas | 654 | 2020-11-27 | Mumbai |
| 555 | Kuldeep Tondon | 543 | 2016-11-27 | New Delhi |

Table 1.1 :- Emp Details.

| EmpID | Project | Salary | Variable |
|-------|---------|--------|----------|
| 111 | P1 | 8000 | 500 |
| 112 | NULL | 16000 | 950 |
| 113 | P4 | 15500 | 1250 |
| 333 | P2 | 10000 | 1000 |
| 555 | P1 | 12000 | 0 |

Table 1.2 :- Emp Salary

Q.1.1 → SQL Query to fetch records that are present in one table but not in another table.

Sol:-

Code:-

Query-1 → Select empdetails.* From empdetails
Left Join empsalary
Using (empid) Where empsalary.empid IS NULL;

Query-2 → Select * From empdetails
Where EmpID NOT IN (Select EmpID From
empsalary);

Output:-

| EmpID | EmpName | ManagerID | DOJ | City |
|-------|---------------|-----------|------------|---------|
| 115 | Vijay Patel | 543 | 2016-07-15 | Udaipur |
| 116 | Kamlesh Kumar | 654 | 2018-09-16 | JaiPur |

Q.1.2 → SQL Query to fetch all the employees who are not working on any Project?

Sol:-

Code:-

Query-1 → Select * From empsalary Where Project IS NULL;

Output:-

| EMPID | Project | Salary | Variable |
|-------|---------|--------|----------|
| 112 | NULL | 16000 | 950 |

Query-2 → Select EmpID, EmpName From empdetails Where EmpID NOT IN (Select EmpID From empsalary);

Output:-

| EMPID | EmpName |
|-------|---------------|
| 115 | Vijay Patel |
| 116 | Kamlesh Kumar |

Q.1.3 :- SQL Query to fetch all the Employee from empdetails who joined in the Year 2020?

Sol:-

Code:-

Query-1 → Select * From empdetails Where DOJ Between '2020-01-01' AND '2020-12-31';

Query-2 → Select * From empdetails Where year(DOJ) = 2020;

Query-3 → Select * From empdetails Where year(DOJ) LIKE '2020%';

Output:-

| EmpID | EmpName | ManageID | DOJ | City |
|-------|-------------|----------|------------|--------|
| 333 | Rajesh Vyas | 654 | 2020-11-27 | Mumbai |

Q.1.4 :- Write an SQL Query to fetch records from empdetails where city ends with character 'i'?

Sol:-

Code:-

Query :- Select EmpID, EmpName, City From empdetails Where City Like '%i';

Output:-

| EmpID | EmpName | City |
|-------|----------------|-----------|
| 333 | Rajesh Vyas | mumbai |
| 555 | Kuldeep Tondon | New Delhi |

Q.1.5 → Write an SQL Query to fetch only odd rows from the table?

Sol:-

Code:-

Query :- 1 Select * from empdetails where EmpID % 2 != 0;

Query :- 2 Select * from empdetails where MOD(EmpID, 2) != 0;

Output:-

| EmpID | Emp Name | ManageID | DOJ | City |
|-------|----------------|----------|------------|-----------|
| 111 | Amit Sharma | 231 | 2014-01-31 | Bangalore |
| 113 | Deepak Sharma | 231 | 2015-08-12 | Bhilwara |
| 115 | Vijay Patel | 543 | 2016-07-15 | Udaipur |
| 333 | Rajesh Vyas | 654 | 2020-11-27 | mumbai |
| 555 | Kuldeep Tondon | 543 | 2016-11-27 | New delhi |

Q.1.6 → SQL Query to find 3rd highest salary from a table without using the TOP/LIMIT keyword?

Sol:-

Code:-

Query :- Select EmpID, Salary from empSalary Emp1 where
2 = (Select Count(Distinct Emp2.Salary) from
empSalary Emp2 where Emp2.Salary > Emp1.Salary);

Output:-

| EmpID | Salary |
|-------|--------|
| 555 | 12000 |

Q.1.7 :- Write an SQL Query to fetch all those employees who work on project other than P1

Sol :-

Code :-

Query :- Select Empdetails.EmpID, EmpName, Project from empdetails Inner Join empsalary ON empsalary.EmpID = empdetails.EmpID where empsalary.Project != 'P1';

Output :-

| EmpID | EmpName | Project |
|-------|---------------|---------|
| 113 | Deepak Sharma | P4 |
| 333 | Rajesh Vyas | P2 |

Query :- Select EmpID, Project From empsalary Where Not Project = 'P1';

Output :-

| EmpID | Project |
|-------|---------|
| 113 | P4 |
| 333 | P2 |

Q.1.8 :- Write an SQL query to fetch all the EmpIDs which are present in either of the tables - 'empdetails' and 'empsalary'?

Sol :-

Code :-

Query :- Select EmpID from empsalary UNION Select EmpID from empdetails ORDER BY EmpID ASC;

Output :-

| EmpID |
|-------|
| 111 |
| 112 |
| 113 |
| 115 |
| 116 |
| 333 |
| 555 |

Q.1.9:- Write an SQL query to display both the EmpID and ManagerID together?

Sol.:-

Code:-

Query:- 1 Select EmpID, ManagerID From empdetails;

Output:-

| EmpID | ManagerID |
|-------|-----------|
| 111 | 231 |
| 112 | 321 |
| 113 | 231 |
| 115 | 543 |
| 116 | 654 |
| 333 | 654 |
| 555 | 543 |

Query:- 2 Select Concat(EmpID, " -> ", ManagerID)
AS "EmpID & ManagerID Together"
From empdetails;

Output:-

| EmpID & Manager ID |
|--------------------|
| 111 -> 231 |
| 112 -> 321 |
| 113 -> 231 |
| 115 -> 543 |
| 116 -> 654 |
| 333 -> 654 |
| 555 -> 543 |

Q.1.10 → Write an SQL query to fetch project-wise count of employees sorted by

a.) project's count in descending order ?.

Sol. :-

Code :-

Query :- Select Project, Count (Project)

```
AS Employees  
from empsalary  
group by Project  
order by Count(empsalary.Project)  
DESC;
```

Output :-

| Project | Employees |
|---------|-----------|
| P1 | 2 |
| P4 | 1 |
| P2 | 1 |
| NULL | 0 |