

## Question - 6 → Reference Table

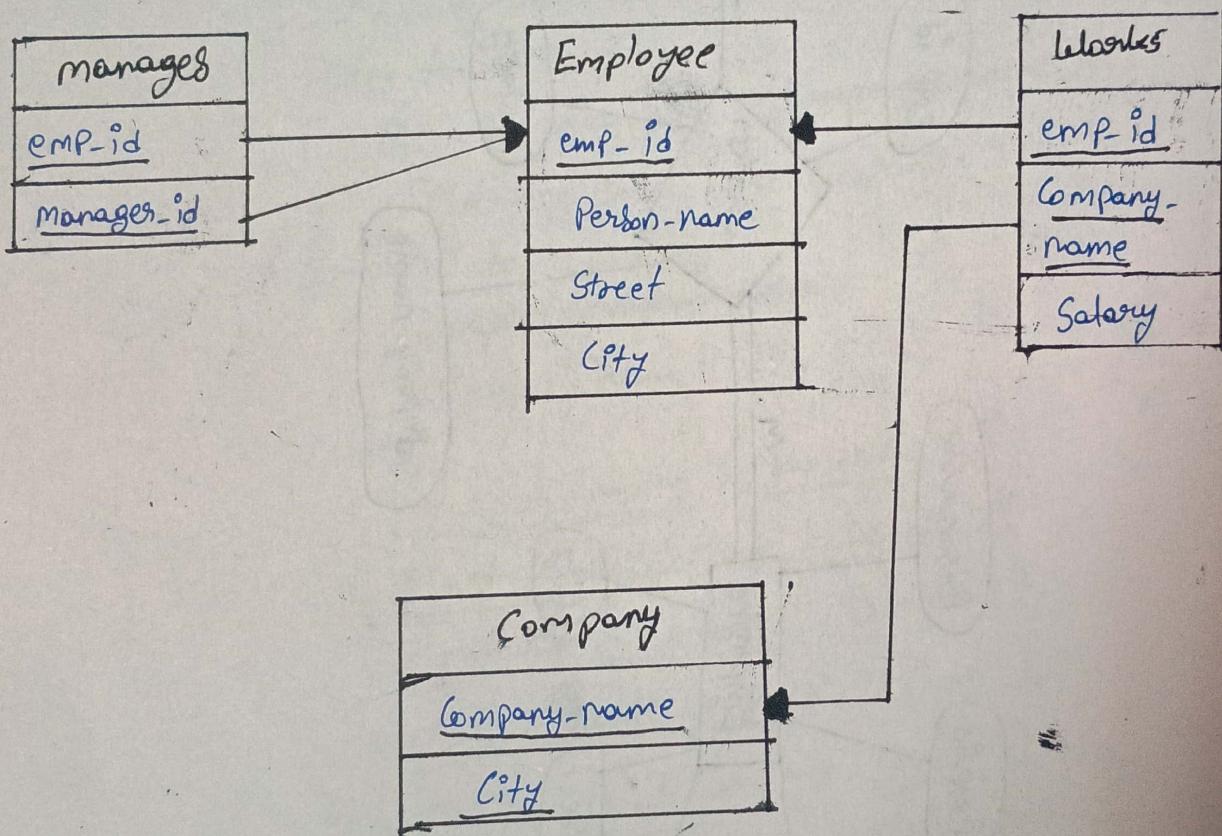
1<sup>st</sup> table ⇒ Company (Company-name, City)

2<sup>nd</sup> table ⇒ employee (emp-id, Person-name, Street, City)

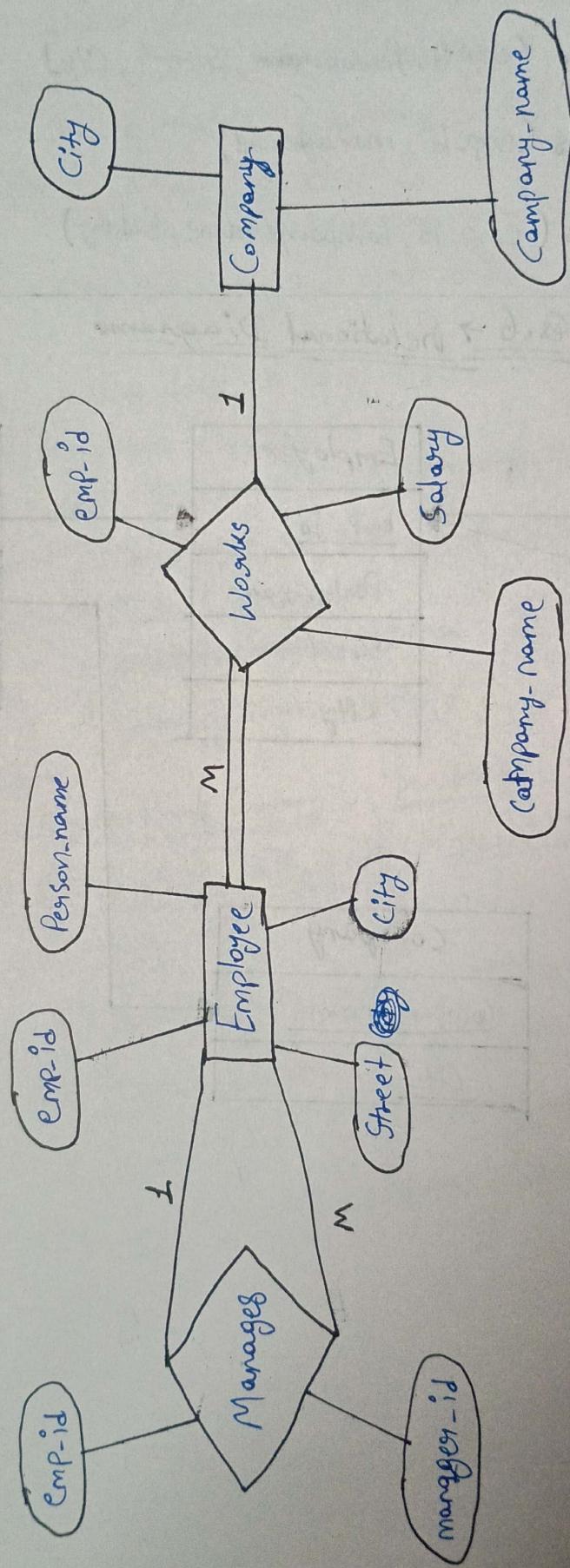
3<sup>rd</sup> table ⇒ manages (emp-id, manager-id)

4<sup>th</sup> table ⇒ Works (emp-id, Company-name, Salary)

## Q. 6 → Relational Diagramme



## ER - DIAGRAM



## Answer-6 → DB - Table Structure.

Table 1st → Company details structure

Code :- -- Create database 'mca-assign1.6'

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-- Create table 'Company'

Create table 'Company' (

Company-name Varchar (30) Not Null,

City Varchar (30) Not Null,

);

-- Adding key to 'Company'

Alter table 'Company'

Add Primary Key ('Company-name');

-- Inserting Data into 'Company'

Insert Into 'Company'

~~(Company-number, Year)~~

('Company-name', 'City')

Values

('Big Bank Company', 'Mumbai');

('First Bank Company', 'Delhi');

('First Bank Company', 'Udaipur');

('Medium Bank Company', 'Bihar');

('Medium Bank Company', 'Delhi');

('Small Bank Company', 'Bihar');

('Small Bank Company', 'Delhi');

# Data Structure in Table in DB After Creation

Company-name	City
Big Bank Company	Kolkata
First Bank Company	Delhi
First Bank Company	Udaipur
Medium Bank Company	Bihar
Medium Bank Company	Delhi
Small Bank Company	Bihar
Small Bank Company	Delhi

Table 6.1 :- Company

## Table 2<sup>nd</sup> → Employee Details Structure

Code is -- Create table 'employee'

```
Create table 'employee' (
    emp-id int (11) NOT NULL,
    Person-name varchar (30) NOT NULL,
    Street varchar (30) Default Null,
    City varchar (30) Default Null
);
```

-- Adding key to 'employee'

Alter table 'employee'

Add Primary Key ('emp-id');

-- Inserting Data into 'employee'

Insert ~~101~~ into 'employee'

(emp-id, Person-name, Street, City)

Values

(101, 'Monit', 'St. no.2', 'Udaipur'),

(102, 'Rohit', 'St. no.2', 'Udaipur'),

(103, 'Sumit', 'St. no.3', 'Kolkata'),

(104, 'Prashant', 'St. no.4', 'Kolkata'),

(105, 'Hardik', 'St. no.5', ~~'Delhi'~~),

(106, 'Asey', 'St. no.6', 'Bihar');

# Data Structure in table in DB After Creation

Emp-id	Person-name	Street	City
101	Mohit	St. no. 1	Udaipur
102	Rohit	St. no. 2	Udaipur
103	Sumit	St. no. 3	Kolkata
104	Rahul	St. no. 4	Kolkata
105	Hardik	St. no. 5	Delhi
106	Ajay	St. no. 6	Bihar

Table 6-2 :- Employee

Table 3<sup>rd</sup>: > Manages Details structure

Code: -- Create table 'manages'

```
Create table 'manages' (
    emp-id int(11) Not Null,
    manager_id int(11) Not Null
);
```

-- Adding key to 'manages.'

```
Alter Table 'manages'
```

```
    Add Primary Key ('emp-id', 'manager_id');
```

-- Inserting into 'manages'

```
Insert into 'manages'
```

```
(emp-id, manager_id)
```

Values

```
(101, 106),
```

```
(102, 106),
```

```
(103, 106),
```

```
(104, 106),
```

```
(105, 106),
```

-- Constraints for table 'manages'

```
Alter Table 'manages'
```

```
Add Constraints 'manages_ibfk_1'
```

```
Foreign Key manages ('emp-id')
```

```
References 'employee'('emp-id'),
```

```
Add Constraints 'manages_ibfk_2'
```

```
Foreign Key ('manager_id').
```

```
References 'employee'('emp-id'),
```

## Data Structure in table in DB After Creation

emp-id	manager-id
<u>101</u>	<u>106</u>
<u>102</u>	<u>106</u>
<u>103</u>	<u>106</u>
<u>104</u>	<u>106</u>
<u>105</u>	<u>106</u>

Table 6.3 ⚡ Manages

## Table 4th $\Rightarrow$ Works Details Structure

Code  $\Rightarrow$  -- Create table 'Works'

Create table 'Works' (

emp-id int (11) Not Null,

Company-name varchar(30) Default Null,

Salary int (11) Not Null

)

-- Adding keys to 'Works'

Alter table 'Works'

Add Primary Key ('emp-id', Company-name);

-- Inserting into 'Works'

Insert into

(emp-id, Company-name, Salary)

Values

(101, First Bank Company, 12000),

(102, First Bank Company, 9000),

(103, Big Bank Company, 10000),

(104, Big Bank Company, 10500),

(105, Small Bank Company, 10000),

(106, Medium Bank Company, 20000);

-- Constraints for table 'Works'

Alter table 'Works'

ADD Constraints 'Works\_ibfk\_1'

Foreign key (emp-id)

References 'employee' ('emp-id'),

ADD Constraints 'Works\_ibfk\_2'

Foreign key (Company-name)

References 'Company' ('Company-name');

## Data Structure in table DB After Creation

emp-id	Company-name	Salary
101	First Bank Company	12000
102	First Bank Company	9000
103	Big Bank Company	10000
104	Big Bank Company	10500
105	Small Bank Company	10000
106	Medium Bank Company	20000

Table 6.4 :- Works

Q.6.1 ⇒ Find the ID, name, and City of residence of each employee who works for "First Bank Corporation"?

Sol: ⇒

Query ⇒

Select employee.emp-id,  
Person-name,  
City

From employee

Join works ON employee.emp-id = works.emp-id

Where Company-name = "First bank Company";

Output ⇒

emp_id	Person-name	City
101	Mohit	Udaipur
102	Rohit	Udaipur

Q. 6.2  $\Rightarrow$  Find the ID, name, and city of residence of each employee who works for "First Bank Corporation" and earns more than \$10000?

Sol:-

Query :-

Select employee.emp-id,  
Person-name,  
City  
From employee

Join works ON employee.emp-id = works.emp\_id  
WHERE Company-name = 'First Bank Company'  
AND Salary > 10000;

Output :-

EMP-ID	PERSON-NAME	CITY
101	Mohit	Udaipur

Q.6.3:- Find the ID of each employee who does not work for "First Bank Corporation"?

Sol:- Query:- Select employee.emp\_id AS Emp-ID  
From employee

JOIN Works ON employee.emp\_id=works.emp\_id  
Where Company\_name != "First bank Company";

Output:-

EMPID
103
104
105
106

Q.6.4:- Find the ID of each employee who earning more than every employee of "Small Bank Corporation"?

Sol:- Query:- Select employee.emp\_id

From employee

Join works ON employee.emp\_id=works.emp\_id  
Where Salary >

Select Max(Salary)

From works

Where Company\_name = 'Small Bank Company');

Output:-

Temp-id
101
104
106

Q. 6.5:- Assume that Companies may be located in several cities. Find the name of each Company that is located in every City in which "Small Bank Company" is located?

Sol:- Query:- Select Distinct Company-name

From Company

Where City IN C

Select City

From Company

Where Company-name = 'Small Bank Company'

)  
AND Company-name != 'Small Bank Company';

Output:-

Company-name
First Bank Company
Medium Bank Company

Q. 6.6: Find the name of the Company that has the most employees (or companies, in the case where there is a tie for the most)?

Sol: Query:

```
Select Company-name, Count(emp-id) AS 'Nums of Employees'  
From Works  
Group By Company-name  
Having Count(emp-id) =  
Select Max(employee_count)  
From (  
    Select Count(emp-id) AS employee_Count  
    From Works  
    Group By Company-name  
) A5 employee_Counts
```

Output:

Company-name	Nums of Employees
Big Bank Companies	2
First Bank Companies	2

Q. 6.7.⇒ Find the name of each company whose employees earn a higher salary, on average, than average salary at "First Bank Corporation"?

Sol. 7

Query ⇒ Select Company-name

From Works

Group By Company-name

Having Avg(Salary) >

Select avg(Salary)

From Works

Where Company-name = 'First Bank Company'

)  
AND Company-name != 'First Bank Company';

Output:⇒

Company-name
medium Bank Company