

# Database Management Systems

## LAB-4:



**Submitted To: Prof. Manomita Chakraborty**

**Name: Ashrith**

**Reg.no: 20BCE7236**

**Slot: L1+L2 (G03-AB-1)**

### *Employee Table:*

```
CREATE TABLE EMPLOYEE_20BCE7236(  
EMP_ID NUMERIC(4),  
EMP_NAME VARCHAR(15),  
DESIGNATION VARCHAR(15), MANAGER_ID NUMERIC(4),  
DOJ DATE,  
DEPT_ID VARCHAR(15),  
SALARY FLOAT,  
GENDER CHAR(1)  
);  
DESC EMPLOYEE_20BCE7236;
```

	Field	Type	Null	Key	Default	Extra
▶	EMP_ID	decimal(4,0)	YES		NULL	
	EMP_NAME	varchar(15)	YES		NULL	
	DESIGNATION	varchar(15)	YES		NULL	
	MANAGER_ID	decimal(4,0)	YES		NULL	
	DOJ	date	YES		NULL	
	DEPT_ID	varchar(15)	YES		NULL	
	SALARY	float	YES		NULL	
	GENDER	char(1)	YES		NULL	

### *Department Table:*

```
CREATE TABLE DEPARTMENT_20BCE7236(  
DEPT_NUM VARCHAR(15),  
DEPT_NAME VARCHAR(15),  
DEPT_ID VARCHAR(10),  
DEPT_LOCATION VARCHAR(15),  
PHN_NUM NUMERIC(10)  
);  
DESC DEPARTMENT_20BCE7236;
```

Field	Type	Null	Key	Default	Extra
DEPT_NUM	varchar(15)	YES		NULL	
DEPT_NAME	varchar(15)	YES		NULL	
DEPT_ID	varchar(10)	YES		NULL	
DEPT_LOCATION	varchar(15)	YES		NULL	
PHN_NUM	decimal(10,0)	YES		NULL	

### *Employee Table Insertion:*

```
INSERT INTO EMPLOYEE_20BCE7236 VALUES(1008, 'Kiran', 'Principal',1008,'1987-02-01', 'DEPT_1004',99000.00, 'M');
INSERT INTO EMPLOYEE_20BCE7236 VALUES(1001, 'Akash', 'Salesman',1008,'1991-07-15', 'DEPT_1003',35000.00, 'M');
INSERT INTO EMPLOYEE_20BCE7236 VALUES (1002, 'Rishabh', 'Manager',1008,'1992-05-23', 'DEPT_1001',65000.00, 'M');
INSERT INTO EMPLOYEE_20BCE7236 VALUES (1003, 'Rihan', 'Analyst',1004,'1991-07-15', 'DEPT_1001',55000.00, 'M');
INSERT INTO EMPLOYEE_20BCE7236 VALUES (1007, 'Seema', 'Manager',1008,'1991-07-15', 'DEPT_1001',65000.00, 'F');
INSERT INTO EMPLOYEE_20BCE7236 VALUES (1004, 'Ridhi', 'Manager',1008, '1987-11-22', 'DEPT_1001',85000.00, 'F');
INSERT INTO EMPLOYEE_20BCE7236 VALUES (1005, 'Sajal', 'Salesman',1007, '1991-07-15', 'DEPT_1003',35000.00, 'M');
INSERT INTO EMPLOYEE_20BCE7236 VALUES(1006, 'Biki', 'Salesman',1002, '1999-11-26', 'DEPT_1003',25000.00, 'F');
SELECT * FROM EMPLOYEE_20BCE7236;
```

EMP_ID	EMP_NAME	DESIGNATION	MANAGER_ID	DOJ	DEPT_ID	SALARY	GENDER
1008	Kiran	Principal	1008	1987-02-01	DEPT_1004	99000	M
1001	Akash	Salesman	1008	1991-07-15	DEPT_1003	35000	M
1002	Rishabh	Manager	1008	1992-05-23	DEPT_1001	65000	M
1003	Rihan	Analyst	1004	1991-07-15	DEPT_1001	55000	M
1007	Seema	Manager	1008	1991-07-15	DEPT_1001	65000	F
1004	Ridhi	Manager	1008	1987-11-22	DEPT_1001	85000	F
1005	Sajal	Salesman	1007	1991-07-15	DEPT_1003	35000	M
1006	Biki	Salesman	1002	1999-11-26	DEPT_1003	25000	F

### *Department Table Insertion:*

```
INSERT INTO DEPARTMENT_20BCE7236 VALUES ('DEPT_1001', 'Human Resource','DEPT_1001','Delhi',1111);
INSERT INTO DEPARTMENT_20BCE7236 VALUES('DEPT_1002', 'Production','DEPT_1002','Kolkata',2222);
INSERT INTO DEPARTMENT_20BCE7236 VALUES ('DEPT_1003', 'Marketing','DEPT_1003','Kerala',3333);
INSERT INTO DEPARTMENT_20BCE7236 VALUES ('DEPT_1004', 'Audit','DEPT_1004','Noida',4444);
INSERT INTO DEPARTMENT_20BCE7236 VALUES ('DEPT_1005', 'Finance','DEPT_1005','Andhra Pradesh',5555);
SELECT * FROM DEPARTMENT_20BCE7236;
```

DEPT_NUM	DEPT_NAME	DEPT_ID	DEPT_LOCATION	PHN_NUM
DEPT_1001	Human Resource	DEPT_1001	Delhi	1111
DEPT_1002	Production	DEPT_1002	Kolkata	2222
DEPT_1003	Marketing	DEPT_1003	Kerala	3333
DEPT_1004	Audit	DEPT_1004	Noida	4444
DEPT_1005	Finance	DEPT_1005	Andhra Pradesh	5555

### *Question-1:*

Write a SQL query to create Employee and Department tables with the following fields and values.

#### Constraints:

- EMP\_ID is the Primary Key of EMPLOYEE Table.
- MANAGER\_ID is the Foreign Key referring to the Primary key EMP\_ID.
- DEPT\_ID is the Foreign key referring to the Primary key DEPT\_NUM of DEPARTMENT table.

## Code & Output:

(i):

```
ALTER TABLE EMPLOYEE_20BCE7236 ADD PRIMARY KEY (EMP_ID);
DESC EMPLOYEE_20BCE7236;
```

Field	Type	Null	Key	Default	Extra
EMP_ID	decimal(4,0)	NO	PRI	NULL	
EMP_NAME	varchar(15)	YES		NULL	
DESIGNATION	varchar(15)	YES		NULL	
MANAGER_ID	decimal(4,0)	YES		NULL	
DOJ	date	YES		NULL	
DEPT_ID	varchar(15)	YES		NULL	
SALARY	float	YES		NULL	
GENDER	char(1)	YES		NULL	

(ii):

```
ALTER TABLE EMPLOYEE_20BCE7236 ADD CONSTRAINT fk_EID FOREIGN KEY(MANAGER_ID) REFERENCES EMPLOYEE_20BCE7236(EMP_ID);
DESC EMPLOYEE_20BCE7236;
```

Field	Type	Null	Key	Default	Extra
EMP_ID	decimal(4,0)	NO	PRI	NULL	
EMP_NAME	varchar(15)	YES		NULL	
DESIGNATION	varchar(15)	YES		NULL	
MANAGER_ID	decimal(4,0)	YES	MUL	NULL	
DOJ	date	YES		NULL	
DEPT_ID	varchar(15)	YES		NULL	
SALARY	float	YES		NULL	
GENDER	char(1)	YES		NULL	

(iii):

```
ALTER TABLE DEPARTMENT_20BCE7236 ADD PRIMARY KEY (DEPT_NUM);
ALTER TABLE DEPARTMENT_20BCE7236 ADD CONSTRAINT fk_DEPT FOREIGN KEY(DEPT_ID) REFERENCES DEPARTMENT_20BCE7236(DEPT_NUM);
DESC DEPARTMENT_20BCE7236;
```

Field	Type	Null	Key	Default	Extra
DEPT_NUM	varchar(15)	NO	PRI	NULL	
DEPT_NAME	varchar(15)	YES		NULL	
DEPT_ID	varchar(10)	YES	MUL	NULL	
DEPT_LOCATION	varchar(15)	YES		NULL	
PHN_NUM	decimal(10,0)	YES		NULL	

**Question-2:**

Write a SQL query to find out the names of all employees who belongs to the same department as the employee 'Rishabh' who has an emp\_ID 1002.

### *Code & Output:*

46 • `employee_20BCE7236 where dept_id = (select dept_id from employee_20BCE7236 where emp_name = 'Rishabh' AND emp_id = 1002);`

Result Grid | Filter Rows:  | Export: | Wrap Cell Content:

emp_name
Rishabh
Rihan
Ridhi
Seema

**Question-3:**

Write a SQL query to find out the employees who belongs to the department of 'Rishabh' and have salary greater than the salary of 'Rishabh' who has an emp\_ID 1002.

### Code & Output:

47 • `select emp_name, salary from employee_20BCE7236 where dept_id = (select dept_id from employee_20bce7236 where emp_name = 'Ridhi')`

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	emp_name	salary
▶	Ridhi	85000

Result Grid

**Question-4:**

Write a SQL query to find out all the employees who have salary greater than all the employees in the department Dept 1001.

### Code & Output:

48 • `select * from employee_20BCE7236 where salary>ALL(select salary from employee_20BCE7236 where dept_id = 'Dept_1001');`

Result Grid

EMP_ID	EMP_NAME	DESIGNATION	MANAGER_ID	DOJ	DEPT_ID	SALARY	GENDER
1008	Kiran	Principal	1008	1987-02-01	DEPT_1004	99000	M
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid

Form Editor

### Question-5:

Write a SQL query to find out all the employees who have salary lesser than the salary of all the employees in the department Dept\_1004.

### Code & Output:

```
49 • select * from employee_20bce7236 where salary < ALL(select salary from employee_20bce7236 where dept_id = 'Dept_1004');
```

EMP_ID	EMP_NAME	DESIGNATION	MANAGER_ID	DOJ	DEPT_ID	SALARY	GENDER
1001	Akash	Salesman	1008	1991-07-15	DEPT_1003	35000	M
1002	Rishabh	Manager	1008	1992-05-23	DEPT_1001	65000	M
1003	Rihan	Analyst	1004	1991-07-15	DEPT_1001	55000	M
1004	Ridhi	Manager	1008	1987-11-22	DEPT_1001	85000	F
1005	Sajal	Salesman	1007	1991-07-15	DEPT_1003	35000	M
1006	Biki	Salesman	1002	1999-11-26	DEPT_1003	25000	F
1007	Seema	Manager	1008	1991-07-15	DEPT_1001	65000	F
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

### Question-6:

Write a SQL query to display the employee id and name for all employees who work in a department with any employee whose name contains a letter J.

### Code & Output:

```
50 • select emp_name, emp_id from employee_20BCE7236 where dept_id = (select dept_id from employee_20BCE7236 where emp_name Like
```

emp_name	emp_id
Akash	1001
Sajal	1005
Biki	1006

### Question-7:

Write a SQL query to display 4th max salary of the employee using subquery.

### Code & Output:

```
51 • SELECT emp_name, salary FROM Employee_20BCE7236 e1 WHERE 4-1= (SELECT COUNT(DISTINCT (salary)) FROM Employee_20BCE7236 e2
```

emp_name	salary
Rihan	55000

### Question-8:

Find out department details like department name, department location and phone number having the employee who get maximum salary.

### Code & Output:

```
52 • select dept_name, dept_location, phn_num from department_20bce7236 where dept_num = (select dept_id from employee_20bce7236 where salary = (select max(salary) from employee_20bce7236))
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

dept_name	dept_location	phn_num
Audit	Noida	4444

Result Grid  
Form Editor

### Question-9:

Write a SQL query to list the department names which are having more than 2 employees using subquery.

### Code & Output:

```
53 • select dept_num, dept_name, dept_location from department_20bce7236 where dept_num IN (select dept_id from employee_20bce7236 group by dept_id having count(*) > 2)
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

dept_num	dept_name	dept_location
DEPT_1001	Human Resource	Delhi
DEPT_1003	Marketing	Kerala

Result Grid  
Form Editor