

## **DBMS LAB-07(06-02-2025)**

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**Q1. Create the following table and insert the values.**

**Job\_History**

<b>Emp_id</b>	<b>Start_Date</b>	<b>End_Date</b>	<b>Job_Type</b>	<b>D_Name</b>
1	4-Jan-1998	30-Jun-2001	Engineer	Production
2	9-Feb-1998	28-Feb-2002	Salesman	Sales
1	1-Jul-2001	31-Dec-2010	Manager	R&D
4	27-Dec-2001	19-Sep-2016	Sales_Executive	Marketing
2	1-Mar-2002	30-Mar-2015	Sales_Executive	Marketing
2	1-Apr-2016	15-Dec-2017	Manager	Sales
4	20-Sep-2016	16-Dec-2017	Asst.Manager	Sales
6	16-Jul-2000	30-Nov-2006	Clerk	Accounts
5	20-Mar-2002	12-Aug-2011	Engineer	R&D
1	1-Jan-2011	31-Jan-2012	Engineer	Production

Using the above Job\_History table and the Employee table (of assignment 2) write SQL statements for the following queries.

```
SQL> CREATE TABLE Job_History (  
2     Emp_id INT,  
3     Start_Date DATE,  
4     End_Date DATE,  
5     Job_Type VARCHAR(50),  
6     D_Name VARCHAR(50),  
7     PRIMARY KEY (Emp_id, Start_Date)  
8 );
```

Table created.

```
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (1, TO_DATE('04-01-1998', 'DD-MM-YYYY'), TO_DATE('30-06-2001', 'DD-MM-YYYY'), 'Engineer', 'Production');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (2, TO_DATE('09-02-1998', 'DD-MM-YYYY'), TO_DATE('28-02-2002', 'DD-MM-YYYY'), 'Salesman', 'Sales');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (1, TO_DATE('01-07-2001', 'DD-MM-YYYY'), TO_DATE('31-12-2010', 'DD-MM-YYYY'), 'Manager', 'R&D');  
Enter value for d:  
old 2: (1, TO_DATE('01-07-2001', 'DD-MM-YYYY'), TO_DATE('31-12-2010', 'DD-MM-YYYY'), 'Manager', 'R&D')  
new 2: (1, TO_DATE('01-07-2001', 'DD-MM-YYYY'), TO_DATE('31-12-2010', 'DD-MM-YYYY'), 'Manager', 'R')  
  
1 row created.  
  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (4, TO_DATE('27-12-2001', 'DD-MM-YYYY'), TO_DATE('19-09-2016', 'DD-MM-YYYY'), 'Sales_Executive', 'Marketing');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (2, TO_DATE('01-03-2002', 'DD-MM-YYYY'), TO_DATE('30-03-2015', 'DD-MM-YYYY'), 'Sales_Executive', 'Marketing');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (2, TO_DATE('01-04-2016', 'DD-MM-YYYY'), TO_DATE('15-12-2017', 'DD-MM-YYYY'), 'Manager', 'Sales');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (4, TO_DATE('20-09-2016', 'DD-MM-YYYY'), TO_DATE('16-12-2017', 'DD-MM-YYYY'), 'Asst.Manager', 'Sales');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (6, TO_DATE('16-07-2000', 'DD-MM-YYYY'), TO_DATE('30-11-2006', 'DD-MM-YYYY'), 'Clerk', 'Accounts');  
  
1 row created.  
  
SQL>  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (5, TO_DATE('20-03-2002', 'DD-MM-YYYY'), TO_DATE('12-08-2011', 'DD-MM-YYYY'), 'Engineer', 'R&D');  
Enter value for d:  
old 2: (5, TO_DATE('20-03-2002', 'DD-MM-YYYY'), TO_DATE('12-08-2011', 'DD-MM-YYYY'), 'Engineer', 'R&D')  
new 2: (5, TO_DATE('20-03-2002', 'DD-MM-YYYY'), TO_DATE('12-08-2011', 'DD-MM-YYYY'), 'Engineer', 'R')  
  
1 row created.  
  
SQL> INSERT INTO Job_History (Emp_id, Start_Date, End_Date, Job_Type, D_Name) VALUES  
2 (1, TO_DATE('01-01-2011', 'DD-MM-YYYY'), TO_DATE('31-01-2012', 'DD-MM-YYYY'), 'Engineer', 'Production');  
  
1 row created.
```

**Q2. Display the current and previous (if any) job\_types of all employees.  
(use union/union all)**

```
SQL> SELECT Emp_id, Job_Type FROM Employee
2 UNION
3 SELECT Emp_id, Job_Type FROM Job_History;

EMP_ID JOB_TYPE
-----
1 Engineer
1 MANAGER
1 Manager
2 MANAGER
2 Manager
2 Sales_Executive
2 Salesman
3 ENGINEER
4 Asst.Manager
4 MANAGER
4 Sales_Executive

EMP_ID JOB_TYPE
-----
5 ENGINEER
5 Engineer
6 ACCOUNTANT
6 Clerk
7 CLERK
8 ENGINEER
10 SALESMAN
11 ENGINEER
12 SALESMAN
20 Engineer
21 Clerk

22 rows selected.
```

**Q3. Display the emp\_id, d\_name, and job\_types current and  
previous (if any) of all employees.(use union/union all)**

```
SQL> SELECT Emp_id, Dept AS D_Name, Job_Type FROM Employee
2 UNION
3 SELECT Emp_id, D_Name, Job_Type FROM Job_History;

EMP_ID D_NAME
-----
JOB_TYPE
-----
1 PRODUCTION
MANAGER
1 Production
Engineer
1 R
Manager

EMP_ID D_NAME
-----
JOB_TYPE
-----
2 MARKETING
MANAGER
2 Marketing
Sales_Executive
2 Sales
Manager

EMP_ID D_NAME
-----
JOB_TYPE
-----
2 Sales
Salesman
3 PRODUCTION
ENGINEER
4 Marketing
Sales_Executive
```

```

      EMP_ID D_NAME
-----
JOB_TYPE
-----
          4 SALES
MANAGER

          4 Sales
Asst.Manager

          5 PRODUCTION
ENGINEER

      EMP_ID D_NAME
-----
JOB_TYPE
-----
          5 R
Engineer

          6 ACCOUNTS
ACCOUNTANT

          6 Accounts
Clerk

      EMP_ID D_NAME
-----
JOB_TYPE
-----
          7 ACCOUNTS
CLERK

          8 R&D
ENGINEER

          10 MARKETING
SALESMAN

```

```

      EMP_ID D_NAME
-----
JOB_TYPE
-----
          11 R and D
ENGINEER

          12 MARKETING
SALESMAN

          20
Engineer

      EMP_ID D_NAME
-----
JOB_TYPE
-----
          21
Clerk

22 rows selected.

```

**Q4. Display the emp\_id and the job\_type of employees who currently have a job title that they held previously.(use intersect)**

```
SQL> SELECT Emp_id, Job_Type FROM Employee
  2  INTERSECT
  3  SELECT Emp_id, Job_Type FROM Job_History;

no rows selected
```

**Q5. Find the employees who have not changed their job for once.(use minus)**

```
SQL> SELECT Emp_id FROM Employee
  2  MINUS
  3  SELECT Emp_id FROM Job_History;

  EMP_ID
  -----
         3
         7
         8
        10
        11
        12
        20
        21

8 rows selected.
```

**Q6. Find the employees who earn more than Chitra. (use single-row subquery)**

```
SQL> SELECT * FROM Employee
  2  WHERE Salary > (SELECT Salary FROM Employee WHERE F_Name = 'Chitra');

no rows selected
```

**Q7. Find the employees details who have the same job\_type as of emp\_id 7. (use single-row subquery)**

```
SQL> SELECT * FROM Employee
  2  WHERE Job_Type = (SELECT Job_Type FROM Employee WHERE Emp_id = 7);

  EMP_ID F_NAME
  -----
L_NAME
-----
JOB_TYPE                                SALARY  COMMISSION
-----
DEPT                                MANAGER_ID  DOJ
-----
         7 DHEERAJ
KUMAR
CLERK                                60000
ACCOUNTS                                6 01-JUL-16
```

**Q8. Display the employee names whose job is the same as employee 3 and earn more than employee 7. (use single-row subquery)**

```
SQL> SELECT F_Name, L_Name FROM Employee
  2  WHERE Job_Type = (SELECT Job_Type FROM Employee WHERE Emp_id = 3)
  3  AND Salary > (SELECT Salary FROM Employee WHERE Emp_id = 7);

no rows selected
```

**Q9. Display the employees earning less than the average salary. (use single-row subquery)**

```
SQL> SELECT * FROM Employee
  2  WHERE Salary < (SELECT AVG(Salary) FROM Employee);
```

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION	DEPT	MANAGER_ID	DOJ
21	Priya	Patel	Clerk	12000	500	DEOL	1	01-APR-17
10	SUNNY	DEOL	SALESMAN	20000	10000	MARKETING	1	31-MAR-01
11	BOBBY	DEOL	ENGINEER	35000		R and D	8	17-OCT-17
12	AMIR	KHAN	SALESMAN	15000	5000	MARKETING	1	11-JAN-13
20	Alex	Engineer	Engineer	28000	2000		1	31-JAN-17

```
SQL> SELECT Job_Type FROM Employee
2 GROUP BY Job_Type
3 HAVING AVG(Salary) = (SELECT MIN(AVG(Salary)) FROM Employee GROUP BY Job_Type)

JOB_TYPE
-----
Clerk
```

```
SQL> SELECT Dept FROM Employee
2 GROUP BY Dept
3 HAVING MIN(Salary) > (SELECT MIN(Salary) FROM Employee WHERE Dept = 'Sales')
no rows selected
```

```
SQL> SELECT F_Name, L_Name, Dept, Salary FROM Employee
2 WHERE (Dept, Salary) IN
3 (SELECT Dept, MIN(Salary) FROM Employee GROUP BY Dept);
```

F_NAME	L_NAME	DEPT	SALARY
BOBBY	DEOL	R and D	35000
DHEERAJ	KUMAR	ACCOUNTS	60000
EMMA	DUTT	PRODUCTION	55000
AMIR	KHAN		
DHEERAJ	MISHRA	SALES	75000
SAUL			
GOOD	R&D		60000

6 rows selected.

**Q13. Find the highest earners of each job\_type.(use multi-row subquery).**

```
SQL> SELECT F_Name, L_Name, Job_Type, Salary FROM Employee
2  WHERE (Job_Type, Salary) IN
3  (SELECT Job_Type, MAX(Salary) FROM Employee GROUP BY Job_Type);
```

F_NAME		
L_NAME		
JOB_TYPE		SALARY
FLOKI DUTT ACCOUNTANT		70000
Priya Patel Clerk		12000
Alex Engineer Engineer		28000
DHEERAJ KUMAR		
SUNNY DEOL SALESMAN		20000
ARUN KHAN MANAGER		90000
SAUL GOOD ENGINEER		60000
CHITRA KAPOOR ENGINEER		60000

8 rows selected.



**Q14. Display the employees who are not engineers and earn less than any engineer.(use multi-row subquery).**

```
SQL> SELECT * FROM Employee
  2 WHERE Job_Type <> 'Engineer'
  3 AND Salary < ANY (SELECT Salary FROM Employee WHERE Job_Type = 'Engineer');
```

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION	DEPT	MANAGER_ID	DOJ
21	Priya	Patel	Clerk	12000	500	1	01-APR-17	
12	AMIR	KHAN	SALESMAN	15000	5000	1	11-JAN-13	
10	SUNNY	DEOL	SALESMAN	20000	10000	1	31-MAR-01	

**Q15. Display the employees who are not clerks but earn more than all clerks.(use multi-row subquery).**

```
SQL> SELECT * FROM Employee
  2 WHERE Job_Type <> 'Clerk'
  3 AND Salary > ALL (SELECT Salary FROM Employee WHERE Job_Type = 'Clerk');
```

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION	DEPT	MANAGER_ID	DOJ
12	AMIR	KHAN	SALESMAN	15000	5000	1	11-JAN-13	
10	SUNNY	DEOL	SALESMAN	20000	10000	1	31-MAR-01	
20	Alex	Engineer	Engineer	28000	2000	1	31-JAN-17	

EMP_ID	F_NAME			
-----				
L_NAME				
-----				
JOB_TYPE		SALARY	COMMISSION	
-----				
DEPT		MANAGER_ID	DOJ	
-----				
11 BOBBY				
DEOL				
ENGINEER		35000		
R and D		8	17-OCT-17	
EMP_ID	F_NAME			
-----				
L_NAME				
-----				
JOB_TYPE		SALARY	COMMISSION	
-----				
DEPT		MANAGER_ID	DOJ	
-----				
5 EMMA				
DUTT				
ENGINEER		55000		
PRODUCTION		1	20-MAR-02	
EMP_ID	F_NAME			
-----				
L_NAME				
-----				
JOB_TYPE		SALARY	COMMISSION	
-----				
DEPT		MANAGER_ID	DOJ	
-----				
3 CHITRA				
KAPOOR				
ENGINEER		60000		
PRODUCTION		1	08-JAN-98	

EMP_ID	F_NAME			
L_NAME				
JOB_TYPE		SALARY	COMMISSION	
DEPT		MANAGER_ID	DOJ	
7 DHEERAJ				
KUMAR CLERK ACCOUNTS		60000 6	01-JUL-16	
EMP_ID	F_NAME			
L_NAME				
JOB_TYPE		SALARY	COMMISSION	
DEPT		MANAGER_ID	DOJ	
8 SAUL				
GOOD ENGINEER R&D		60000	06-SEP-14	
EMP_ID	F_NAME			
L_NAME				
JOB_TYPE		SALARY	COMMISSION	
DEPT		MANAGER_ID	DOJ	
6 FLOKI				
DUTT ACCOUNTANT ACCOUNTS		70000	20-MAR-00	
EMP_ID	F_NAME			
L_NAME				
JOB_TYPE		SALARY	COMMISSION	
DEPT		MANAGER_ID	DOJ	
4 DHEERAJ				
MISHRA MANAGER SALES		75000 1	27-DEC-01	
EMP_ID	F_NAME			
L_NAME				
JOB_TYPE		SALARY	COMMISSION	
DEPT		MANAGER_ID	DOJ	
2 BARUN				
KUMAR MANAGER MARKETING		80000	09-FEB-98	
EMP_ID	F_NAME			
L_NAME				
JOB_TYPE		SALARY	COMMISSION	
DEPT		MANAGER_ID	DOJ	
1 ARUN				
KHAN MANAGER PRODUCTION		90000	04-JAN-98	

12 rows selected.

### Q16. Display the top 5 highest earning employees

```
SQL> SELECT * FROM  
2 (SELECT * FROM Employee ORDER BY Salary DESC)  
3 WHERE ROWNUM <= 5;
```

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION
DEPT	MANAGER_ID	DOJ			
1	ARUN	KHAN	MANAGER	90000	
PRODUCTION		04-JAN-98			

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION
DEPT	MANAGER_ID	DOJ			
2	BARUN	KUMAR	MANAGER	80000	
MARKETING		09-FEB-98			

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION
DEPT	MANAGER_ID	DOJ			
4	DHEERAJ	MISHRA	MANAGER	75000	
SALES	1	27-DEC-01			

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION
DEPT	MANAGER_ID	DOJ			
6	FLOKI	DUTT	ACCOUNTANT	70000	
ACCOUNTS		20-MAR-00			

EMP_ID	F_NAME	L_NAME	JOB_TYPE	SALARY	COMMISSION
DEPT	MANAGER_ID	DOJ			
3	CHITRA	KAPOOR	ENGINEER	60000	
PRODUCTION	1	08-JAN-98			

**Q17. Display the name and department of the top 2 highest paid managers.**

```
SQL> SELECT * FROM
  2  (SELECT Emp_id, f_name, l_name, dept, Salary
  3    FROM Employee
  4    WHERE job_type = 'Manager'
  5    ORDER BY Salary DESC)
  6  WHERE ROWNUM <= 2;

no rows selected
```

**Q18. Update the salary of the employees working as managers to the average salary of all the employees.**

```
SQL> UPDATE Employee
  2  SET Salary = (SELECT AVG(Salary) FROM Employee)
  3  WHERE Job_Type = 'Manager';

0 rows updated.

SQL> COMMIT;

Commit complete.
```