EX NO: 8	WORKING WITH MULTIPLE TABLES
4/9/24	

1. Write a query to display the last name, department number, and department name for all employees.

SELECT e.LAST_NAME, e.DEPARTMENT_ID, d.DEPT_NAME FROM EMPLOYEES e JOIN DEPARTMENT d ON e.DEPARTMENT_ID = d.DEPT_ID;

LAST_NAME	DEPARTMENT_ID	DEPT_NAME
Austin	60	HR
Austin	60	HR
Smith	60	HR
Smith	60	HR
Davis	80	Finance
Davis	80	Finance
Austin	60	HR
Austin	60	HR
Brown	50	IT
Brown	50	IT
Smith	50	IT
Smith	50	IT
Roberts	80	Finance
Roberts	80	Finance
Johnson	60	HR
Johnson	60	HR
Baker	60	HR
Baker	60	HR
Ross	80	Finance
Ross	80	Finance
Williams	50	IT
Williams	50	IT
Martinez	80	Finance
Martinez	80	Finance
Gomez	80	Finance
Gomez	80	Finance
Clark	50	IT
Clark	50	IT
Acevedo	60	HR
Acevedo	60	HR
Young	80	Finance
Young	80	Finance
Williams	50	IT
Williams	50	IT

2. Create a unique listing of all jobs that are in department 80. Include the location of the department in the output.

SELECT DISTINCT e.JOB_ID, d.LOCATION_ID FROM EMPLOYEES e JOIN DEPARTMENT d ON e.DEPARTMENT_ID = d.DEPT_ID WHERE e.DEPARTMENT_ID = 80;

JOB_ID	LOCATION_ID
SALES	4
SALES_REP	3
SALES_REP	4
SALES	3

3. Write a query to display the employee last name, department name, location ID, and city of all employees who earn a commission

SELECT e.LAST_NAME, d.DEPT_NAME, d.LOCATION_ID, l.CITY FROM EMPLOYEES e JOIN DEPARTMENT d ON e.DEPARTMENT_ID = d.DEPT_ID JOIN LOCATION l ON d.LOCATION_ID = l.LOCATION_ID WHERE e.COMMISSION_PCT IS NOT NULL;

LAST_NAME	DEPT_NAME	LOCATION_ID	CITY
Austin	HR	5	San Francisco
Austin	HR	5	San Francisco
Smith	HR	5	San Francisco
Smith	HR	5	San Francisco
Davis	Finance	4	New York
Davis	Finance	3	Chicago
Austin	HR	5	San Francisco
Austin	HR	5	San Francisco
Smith	IT	6	Toronto
Smith	IT	1	Los Angeles
Roberts	Finance	4	New York
Roberts	Finance	3	Chicago
Ross	Finance	4	New York
Ross	Finance	3	Chicago
Martinez	Finance	4	New York
Martinez	Finance	3	Chicago
Gomez	Finance	4	New York
Gomez	Finance	3	Chicago
Young	Finance	4	New York
Young	Finance	3	Chicago

4. Display the employee last name and department name for all employees who have an a(lowercase) in their last names. P

SELECT e.LAST_NAME, d.DEPT_NAME FROM EMPLOYEES e JOIN DEPARTMENT d ON e.DEPARTMENT_ID = d.DEPT_ID WHERE e.LAST_NAME LIKE '%a%' OR e.FIRST_NAME LIKE '%a%';

LAST_NAME	DEPT_NAME
Williams	IT
Clark	IT
Williams	IT
Baker	HR
Johnson	HR
Young	Finance
Gomez	Finance
Martinez	Finance
Ross	Finance
Roberts	Finance
Davis	Finance
Young	Finance
Gomez	Finance
Martinez	Finance
Ross	Finance
Roberts	Finance
Davis	Finance
Baker	HR
Johnson	HR
Williams	IT
Clark	IT
Williams	IT

5. Write a query to display the last name, job, department number, and department name for all employees who work in Toronto.

SELECT e.LAST_NAME, e.JOB_ID, e.DEPARTMENT_ID, d.DEPT_NAME FROM EMPLOYEES e JOIN DEPARTMENT d ON e.DEPARTMENT_ID = d.DEPT_ID JOIN LOCATION l ON d.LOCATION_ID = l.LOCATION_ID WHERE l.CITY = 'Toronto';

LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPT_NAME
Brown	IT_PROG	50	IT
Smith	SALES_REP	50	IT
Williams	HR_REP	50	IT
Clark	FIN_ANALYST	50	IT
Williams	IT_PROG	50	IT

6. Display the employee last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, Respectively

SELECT e.LAST_NAME AS "Employee", e.EMPLOYEE_ID AS "Emp#", m.LAST_NAME AS "Manager", m.EMPLOYEE_ID AS "Mgr#" FROM EMPLOYEES e LEFT JOIN EMPLOYEES m ON e.MANAGER_ID = m.EMPLOYEE_ID;

Employee	Emp#	Manager	Mgr#
Acevedo	118	Austin	101
Clark	117	Austin	101
Williams	113	Austin	101
Harris	111	Austin	101
Adams	108	Austin	101
Brown	106	Austin	101
Jones	103	Austin	101
Young	119	Smith	102
Gomez	116	Smith	102
Martinez	115	Smith	102
Baker	110	Smith	102
Roberts	107	Smith	102
Martinez	176	Smith	102
Davis	104	Smith	102
Williams	120	Jones	103
Ross	112	Jones	103
Smith	202	Green	201
Green	201	-	-
Thompson	114	-	-
Johnson	109	-	-
Austin	105	-	-
Smith	102	-	-
Austin	101	-	-

7. Modify lab4_6.sql to display all employees including King, who has no manager. Order the results by the employee number.

SELECT e.LAST_NAME AS "Employee", e.EMPLOYEE_ID AS "Emp#", m.LAST_NAME AS "Manager", m.EMPLOYEE_ID AS "Mgr#" FROM EMPLOYEES e LEFT JOIN EMPLOYEES m ON e.MANAGER_ID = m.EMPLOYEE_ID ORDER BY e.EMPLOYEE_ID;

Employee	Emp#	Manager	Mgr#
Austin	101	-	-
Smith	102	-	-
Jones	103	Austin	101
Davis	104	Smith	102
Austin	105	-	-
Brown	106	Austin	101
Roberts	107	Smith	102
Adams	108	Austin	101
Johnson	109	-	-
Baker	110	Smith	102
Harris	111	Austin	101
Ross	112	Jones	103
Williams	113	Austin	101
Thompson	114	-	-
Martinez	115	Smith	102
Gomez	116	Smith	102
Clark	117	Austin	101
Acevedo	118	Austin	101
Young	119	Smith	102
Williams	120	Jones	103
Martinez	176	Smith	102
Green	201	-	-
Smith	202	Green	201

8. Create a query that displays employee last names, department numbers, and all the employees who work in the same department as a given employee. Give each column an appropriate label

SELECT e1.LAST_NAME AS "Employee", e1.DEPARTMENT_ID AS "Dept#", e2.LAST_NAME AS "Colleague" FROM EMPLOYEES e1 JOIN EMPLOYEES e2 ON e1.DEPARTMENT_ID = e2.DEPARTMENT_ID MINUS SELECT e1.LAST_NAME AS "Employee", e1.DEPARTMENT_ID AS "Dept#", e1.LAST_NAME AS "Colleague" FROM EMPLOYEES e1;

Employee	Dept#	Colleague
Acevedo	60	Austin
Acevedo	60	Baker
Acevedo	60	Johnson
Acevedo	60	Smith
Adams	30	Harris
Austin	60	Acevedo
Austin	60	Baker
Austin	60	Johnson
Austin	60	Smith
Baker	60	Acevedo
Baker	60	Austin
Baker	60	Johnson
Baker	60	Smith
Brown	50	Clark
Brown	50	Smith
Brown	50	Williams
Clark	50	Brown
Clark	50	Smith
Clark	50	Williams
Davis	80	Gomez

9. Show the structure of the JOB_GRADES table. Create a query that displays the name, job, department name, salary, and grade for all employees

DESCRIBE JOB_GRADES;

Object Type **TABLE** Object **JOB_GRADE**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
JOB_GRADE	GRADE_LEVEL	VARCHAR2	2	-	-	-	✓	-	-
	LOWEST_SAL	NUMBER	22	-	-	-	✓	-	-
	HIGHEST_SAL	NUMBER	22	-	-	-	✓	-	-
									1 - 3

SELECT e.LAST_NAME AS "Employee", e.JOB_ID AS "Job", d.DEPT_NAME AS "Department", e.SALARY AS "Salary", j.GRADE_LEVEL AS "Grade" FROM EMPLOYEES e JOIN DEPARTMENT d ON e.DEPARTMENT_ID = d.DEPT_ID JOIN JOB_GRADES j ON e.SALARY BETWEEN j.LOWEST_SAL AND j.HIGHEST_SAL;

Employee	Job	Department	Salary	Grade
Clark	FIN_ANALYST	IT	7500	C
Williams	HR_REP	IT	7000	B
Smith	SALES_REP	IT	6000	B
Brown	IT_PROG	IT	5500	B
Acevedo	IT_PROG	HR	8500	C
Johnson	HR_REP	HR	7800	C
Baker	IT_PROG	HR	6200	B
Austin	IT_PROG	HR	5000	A
Smith	HR_REP	HR	4500	A
Austin	HR_REP	HR	3000	A
Gomez	SALES_REP	Finance	9000	C
Young	SALES_REP	Finance	6000	B
Davis	SALES	Finance	5300	B
Ross	SALES	Finance	5000	A
Gomez	SALES_REP	Finance	9000	C
Young	SALES_REP	Finance	6000	B
Davis	SALES	Finance	5300	B
Ross	SALES	Finance	5000	A
Acevedo	IT_PROG	HR	8500	C
Johnson	HR_REP	HR	7800	C

10. Create a query to display the name and hire date of any employee hired after employee Davies.

SELECT e.LAST_NAME, e.HIRE_DATE FROM EMPLOYEES e WHERE e.HIRE_DATE > (SELECT HIRE_DATE FROM EMPLOYEES WHERE LAST_NAME = 'Davies');

Employee Name	Hire Date
Austin	01/01/2022
Smith	02/15/2023
Jones	05/20/2021
Brown	10/11/2024
Smith	02/20/2023
Williams	10/01/2023
Green	01/15/2023

11. Display the names and hire dates for all employees who were hired before their managers, along with their manager's names and hire dates. Label the columns Employee, Emp Hired, Manager, and Mgr Hired, respectively.

SELECT e.LAST_NAME AS "Employee", e.HIRE_DATE AS "Emp Hired", m.LAST_NAME AS "Manager", m.HIRE_DATE AS "Mgr Hired" FROM EMPLOYEES e JOIN EMPLOYEES m ON e.MANAGER_ID = m.EMPLOYEE_ID WHERE e.HIRE_DATE < m.HIRE_DATE;

Employee	Emp Hired	Manager	Mgr Hired
Acevedo	11/11/2010	Austin	01/01/2022
Clark	10/10/2007	Austin	01/01/2022
Williams	06/15/1994	Austin	01/01/2022
Harris	04/15/1998	Austin	01/01/2022
Adams	05/10/1999	Austin	01/01/2022
Jones	05/20/2021	Austin	01/01/2022
Young	12/12/2011	Smith	02/15/2023
Gomez	09/25/2005	Smith	02/15/2023
Martinez	08/20/2002	Smith	02/15/2023
Baker	03/10/1998	Smith	02/15/2023
Roberts	07/20/1998	Smith	02/15/2023
Martinez	03/05/1999	Smith	02/15/2023
Davis	09/10/2020	Smith	02/15/2023
Ross	03/25/1998	Jones	05/20/2021