



UNIVERSIDAD AUTÓNOMA DE ZACATECAS
INGENIERÍA DE SOFTWARE
LABORATORIO DE SISTEMAS DE BASE DE DATOS II
FORMATO DE PRÁCTICAS

PRÁCTICA:	9
TÍTULO:	Displaying Data from Multiple Tables Using Joins
OBJETIVO:	Realizar ejercicios sobre los temas del capítulo 6: Displaying Data from Multiple Tables Using Joins
DURACIÓN:	4 horas
FECHA:	
FECHA DE ENTREGA:	

ACTIVIDADES A REALIZAR:

Actividad 1:

Practices for Lesson 6

This practice is intended to give you experience in extracting data from more than one table using the SQL:1999-compliant joins.

Practice 6-1: Displaying Data from Multiple Tables Using Joins

- 1) Write a query for the HR department to produce the addresses of all the departments. Use the **LOCATIONS** and **COUNTRIES** tables. Show the location ID, street address, city, state or province, and country in the output. Use a **NATURAL JOIN** to produce the results.

	LOCATION_ID	STREET_ADDRESS	CITY	STATE_PROVINCE	COUNTRY_NAME
1	1400	2014 Jabberwocky Rd	Southlake	Texas	United States of America
2	1500	2011 Interiors Blvd	South San Francisco	California	United States of America
3	1700	2004 Charade Rd	Seattle	Washington	United States of America
4	1800	460 Bloor St. W.	Toronto	Ontario	Canada
5	2500	Magdalen Centre, The Oxford Science Park	Oxford	Oxford	United Kingdom

- 2) The HR department needs a report of only those employees with corresponding departments. Write a query to display the last name, department number, and department name for these employees.

	LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
1	Whalen	10	Administration
2	Hartstein	20	Marketing
3	Fay	20	Marketing
4	Davies	50	Shipping
5	Vargas	50	Shipping

18	Higgins	110	Accounting
19	Gietz	110	Accounting

- 3) The HR department needs a report of employees in Toronto. Display the last name, job, department number, and the department name for all employees who work in Toronto.

	LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
1	Hartstein	MK_MAN	20	Marketing
2	Fay	MK_REP	20	Marketing

- 4) Create a report to display employees' last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively. Save your SQL statement as lab_06_04.sql. Run the query.

	Employee	EMP#	Manager	Mgr#
1	Hunold	103	De Haan	102
2	Fay	202	Hartstein	201
3	Gietz	206	Higgins	205
4	Lorentz	107	Hunold	103
5	Ernst	104	Hunold	103

18	Taylor	176	Zlotkey	149
19	Abel	174	Zlotkey	149

- 5) Modify lab_06_04.sql to display all employees including King, who has no manager. Order the results by the employee number. Save your SQL statement as lab_06_05.sql. Run the query in lab_06_05.sql.

	Employee	EMP#	Manager	Mgr#
1	King	100 (null)	(null)	
2	Kochhar	101	King	100
3	De Haan	102	King	100
4	Hunold	103	De Haan	102
5	Ernst	104	Hunold	103

...

19	Higgins	205	Kochhar	101
20	Gietz	206	Higgins	205

- 6) Create a report for the HR department 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. Save the script to a file named lab_06_06.sql.

	DEPARTMENT	EMPLOYEE	COLLEAGUE
1	20	Fay	Hartstein
2	20	Hartstein	Fay
3	50	Davies	Matos
4	50	Davies	Mourgos
5	50	Davies	Rajs

...

41	110	Gietz	Higgins
42	110	Higgins	Gietz

- 7) The HR department needs a report on job grades and salaries. To familiarize yourself with the `JOB_GRADES` table, first show the structure of the `JOB_GRADES` table. Then create a query that displays the name, job, department name, salary, and grade for all employees.

DESC JOB_GRADES		
Name	Null	Type
GRADE_LEVEL		VARCHAR2(3)
LOWEST_SAL		NUMBER
HIGHEST_SAL		NUMBER
3 rows selected		

	LAST_NAME	JOB_ID	DEPARTMENT_NAME	SALARY	GRADE_LEVEL
1	King	AD_PRES	Executive	24000	E
2	Kochhar	AD_VP	Executive	17000	E
3	De Haan	AD_VP	Executive	17000	E
4	Hartstein	MK_MAN	Marketing	13000	D
5	Higgins	AC_MGR	Accounting	12000	D

...

18	Matos	ST_CLERK	Shipping	2600	A
19	Vargas	ST_CLERK	Shipping	2500	A

If you want an extra challenge, complete the following exercises:

- 8) The HR department wants to determine the names of all the employees who were hired after Davies. Create a query to display the name and hire date of any employee hired after employee Davies.

	LAST_NAME	HIRE_DATE
1	Fay	17-AUG-97
2	Lorentz	07-FEB-99
3	Mourgos	16-NOV-99
4	Matos	15-MAR-98
5	Vargas	09-JUL-98
6	Zlotkey	29-JAN-00
7	Taylor	24-MAR-98
8	Grant	24-MAY-99

- 9) The HR department needs to find the names and hire dates of all the employees who were hired before their managers, along with their managers' names and hire dates. Save the script to a file named `lab_06_09.sql`.

	LAST_NAME	HIRE_DATE	LAST_NAME_1	HIRE_DATE_1
1	Whalen	17-SEP-87	Kochhar	21-SEP-89
2	Hunold	03-JAN-90	De Haan	13-JAN-93
3	Vargas	09-JUL-98	Mourgos	16-NOV-99
4	Matos	15-MAR-98	Mourgos	16-NOV-99
5	Davies	29-JAN-97	Mourgos	16-NOV-99
6	Rajs	17-OCT-95	Mourgos	16-NOV-99
7	Grant	24-MAY-99	Zlotkey	29-JAN-00
8	Taylor	24-MAR-98	Zlotkey	29-JAN-00
9	Abel	11-MAY-96	Zlotkey	29-JAN-00

Actividad 2:

WRITE SELECT STATEMENTS TO ACCESS DATA FROM MORE THAN ONE TABLE USING EQUIJOINS AND NONEQUIJOINS

1. The EMPLOYEES and DEPARTMENTS tables have two identically named columns:

DEPARTMENT_ID and MANAGER_ID. Which of these statements joins these tables based only on common DEPARTMENT_ID values? (Choose all that apply.)

- A. SELECT * FROM EMPLOYEES NATURAL JOIN DEPARTMENTS;
- B. SELECT * FROM EMPLOYEES E NATURAL JOIN DEPARTMENTS D ON E.DEPARTMENT_ID=D.DEPARTMENT_ID;
- C. SELECT * FROM EMPLOYEES NATURAL JOIN DEPARTMENTS USING (DEPARTMENT_ID);
- D. None of the above

2. The EMPLOYEES and DEPARTMENTS tables have two identically named columns:

DEPARTMENT_ID and MANAGER_ID. Which statements join these tables based on both column values? (Choose all that apply.)

- A. SELECT * FROM EMPLOYEES NATURAL JOIN DEPARTMENTS;
- B. SELECT * FROM EMPLOYEES JOIN DEPARTMENTS USING (DEPARTMENT_ID,MANAGER_ID);
- C. SELECT * FROM EMPLOYEES E JOIN DEPARTMENTS D ON E.DEPARTMENT_ID=D.DEPARTMENT_ID AND E.MANAGER_ID=D.MANAGER_ID;
- D. None of the above

3. Which join is performed by the following query?

SELECT E.JOB_ID,J.JOB_ID FROM EMPLOYEES E

JOIN JOBS J ON (E.SALARY < J.MAX_SALARY); (Choose the best answer.)

- A. Equijoin
- B. Nonequijoin
- C. Cross join
- D. Outer join

4. Which of the following statements are syntactically correct? (Choose all that apply.)

- A. `SELECT * FROM EMPLOYEES E JOIN DEPARTMENTS D USING (DEPARTMENT_ID);`
- B. `SELECT * FROM EMPLOYEES JOIN DEPARTMENTS D USING (D.DEPARTMENT_ID);`
- C. `SELECT D.DEPARTMENT_ID FROM EMPLOYEES JOIN DEPARTMENTS D USING (DEPARTMENT_ID);`
- D. None of the above

5. Which of the following statements are syntactically correct? (Choose all that apply.)

- A. `SELECT E.EMPLOYEE_ID, J.JOB_ID PREVIOUS_JOB, E.JOB_ID CURRENT_JOB FROM JOB_HISTORY J CROSS JOIN EMPLOYEES E ON (J.START_DATE=E.HIRE_DATE);`
- B. `SELECT E.EMPLOYEE_ID, J.JOB_ID PREVIOUS_JOB, E.JOB_ID CURRENT_JOB FROM JOB_HISTORY J JOIN EMPLOYEES E ON (J.START_DATE=E.HIRE_DATE);`
- C. `SELECT E.EMPLOYEE_ID, J.JOB_ID PREVIOUS_JOB, E.JOB_ID CURRENT_JOB FROM JOB_HISTORY J OUTER JOIN EMPLOYEES E ON (J.START_DATE=E.HIRE_DATE);`
- D. None of the above

6. Choose one correct statement regarding the following query:

`SELECT * FROM EMPLOYEES E JOIN DEPARTMENTS D ON (D.DEPARTMENT_ID=E.DEPARTMENT_ID) JOIN LOCATIONS L ON (L.LOCATION_ID =D.LOCATION_ID);`

- A. Joining three tables is not permitted.
- B. A Cartesian product is generated.
- C. The JOIN...ON clause may be used for joins between multiple tables.
- D. None of the above

JOIN A TABLE TO ITSELF USING A SELF-JOIN

7. How many rows are returned after executing the following statement?

`SELECT * FROM REGIONS R1 JOIN REGIONS R2 ON (R1.REGION_ID=LENGTH(R2. REGION_NAME)/2);`

The REGIONS table contains the following row data. (Choose the best answer.)

REGION_ID	REGION_NAME
1	Europe
2	Americas
3	Asia
4	Middle East and Africa

- A. 2
- B. 3
- C. 4
- D. None of the above

VIEW DATA THAT DOES NOT MEET A JOIN CONDITION USING OUTER JOINS

8. Choose one correct statement regarding the following query.

SELECT C.COUNTRY_ID

FROM LOCATIONS L RIGHT OUTER JOIN COUNTRIES C

ON (L.COUNTRY_ID=C.COUNTRY_ID) WHERE L.COUNTRY_ID is NULL

- A. No rows in the LOCATIONS table have the COUNTRY_ID values returned.
- B. No rows in the COUNTRIES table have the COUNTRY_ID values returned.
- C. The rows returned represent the COUNTRY_ID values for all the rows in the LOCATIONS table.
- D. None of the above

9. Which of the following statements are syntactically correct? (Choose all that apply.)

A. SELECT JH.JOB_ID FROM JOB_HISTORY JH RIGHT OUTER JOIN JOBS J ON JH.JOB_ID=J.JOB_ID

B. SELECT JOB_ID FROM JOB_HISTORY JH RIGHT OUTER JOIN JOBS J ON (JH.JOB_ID=J.JOB_ID)

C. SELECT JOB_HISTORY.JOB_ID FROM JOB_HISTORY OUTER JOIN JOBS ON JOB_HISTORY.JOB_ID=JOBS.JOB_ID

- D. None of the above

GENERATE A CARTESIAN PRODUCT OF TWO OR MORE TABLES

10. If the REGIONS table, which contains 4 rows, is cross joined to the COUNTRIES table, which contains 25 rows, how many rows appear in the final results set? (Choose the best answer.)

- A. 100 rows
- B. 4 rows
- C. 25 rows
- D. None of the above

ACTIVIDAD 3: Para la base de datos de "Hotel", elabore 3 sentencias SELECT para cada uno de los siguientes tipos de JOIN:

- NATURAL JOIN
- JOIN USING
- JOIN ON
- SELF-JOIN*
- NONEQUIJOIN*
- LEFT OUTER JOIN
- RIGHT OUTER JOIN
- FULL OUTER JOIN
- CROSS JOIN