Programming 6

6.1

Vocabulary

* Cross Join - Returns the Cartesian product from two tables
* Natural Join - Joins two tables based on the same column name

1. Create a cross-join that displays the last name and department name from the employees and departments tables.

2. Create a query that uses a natural join to join the departments table and the locations table. Display the department id, department name, location id, and city.

3. Create a query that uses a natural join to join the departments table and the locations table. Restrict the output to only department IDs of 20 and 50. Display the department id, department name, location id, and city.

6.2

Vocabulary

USING clause - Allows a natural join based on an arbitrary condition or two columns with different names

ON clause - Performs an equijoin based on one specified column name

1. Join the Oracle database locations and departments table using the location\_id column. Limit the results to location 1400 only.

2. Join DJs on Demand d\_play\_list\_items, d\_track\_listings, and d\_cds tables with the JOIN USING syntax. Include the song ID, CD number, title, and comments in the output.

3. Display the city, department name, location ID, and department ID for departments 10, 20, and 30 for the city of Seattle.

4. Display country name, region ID, and region name for Americas.

5. Write a statement joining the employees and jobs tables. Display the first and last names, hire date, job id, job title, and maximum salary. Limit the query to those employees who are in jobs that can earn more than $12,000.

6. Display job title, employee first name, last name, and email for all employees who are stock clerks.

The following questions use the JOIN…ON syntax:

7. Write a statement that displays the employee ID, first name, last name, manager ID, manager first name, and manager last name for every employee in the employees table. Hint: this is a self-join.

SELECT e.employee\_id, e.first\_name, e.last\_name, e.manager\_id, m.first\_name AS manager\_first\_name, m.last\_name AS manager\_last\_name FROM employees e JOIN employees m ON e.manager\_id = m.employee\_id;

8. Use JOIN ON syntax to query and display the location ID, city, and department name for all Canadian locations.

SELECT l.location\_id, l.city, d.department\_name FROM locations l JOIN departments d ON l.location\_id = d.location\_id WHERE l.country\_id = 'CAN'

9. Query and display manager ID, department ID, department name, first name, and last name for all employees in departments 80, 90, 110, and 190.

SELECT e.manager\_id, e.department\_id, d.department\_name, e.first\_name, e.last\_name FROM employees e JOIN departments d ON e.department\_id = d.department\_id WHERE e.department\_id IN (80, 90, 110, 190);

10.Display employee ID, last name, department ID, department name, and hire date for those employees whose hire date was June 7, 1994.

SELECT e.employee\_id, e.last\_name, e.department\_id, d.department\_name, e.hire\_date FROM employees e JOIN departments d ON e.department\_id = d.department\_id WHERE e.hire\_date = TO\_DATE('07-JUN-1994', 'DD-MON-YYYY');

6.3

Vocabulary

Full Outer Join - Performs a join on two tables, retrieves all the rows in the Left table, even if there is no match in the Right table. It also retrieves all the rows in the Right table, even if there is no match in the Left table.

Out Join - A join that returns the unmatched rows as well as matched rows

LEFT JOIN - Performs a join on two tables, retrieves all the rows in the Left table even if there is no match in the Right table.

Cross Join - Performs a join on two tables, retrieves all the rows in the Right table even if there is no match in the Left table.

Inner join - A join of two or more tables that returns only matched rows

1. Return the first name, last name, and department name for all employees including those employees not assigned to a department.

2. Return the first name, last name, and department name for all employees including those departments that do not have an employee assigned to them.

3. Return the first name, last name, and department name for all employees including those departments that do not have an employee assigned to them and those employees not assigned to a department.

4. Create a query of the DJs on Demand database to return the first name, last name, event date, and description of the event the client held. Include all the clients even if they have not had an event scheduled.

5. Using the Global Fast Foods database, show the shift description and shift assignment date even if there is no date assigned for each shift description.

6.4

Vocabulary

Self join - Joins a table to itself

Hierarchical query - Retrieves data based on a natural hierarchical relationship between rows in a table

Level - Determines the number of steps down from the beginning row that should be returned by a hierarchical query

Start with clause - Identifies the beginning row for a hierarchical query

Connect by prior - Specifies the relationship between parent rows and child rows of a hierarchical query join

1. Display the employee’s last name and employee number along with the manager’s last name and manager number. Label the columns: Employee, Emp#, Manager, and Mgr#, respectively.

2. Modify question 1 to display all employees and their managers, even if the employee does not have a manager. Order the list alphabetically by the last name of the employee.

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

4. Write a report that shows the hierarchy for Lex De Haans department. Include last name, salary, and department id in the report.

5. What is wrong in the following statement?

SELECT last\_name, department\_id, salary

FROM employees

START WITH last\_name = 'King'

CONNECT BY PRIOR manager\_id = employee\_id;

Connect by clause - Manager\_id needs to match the correct employee\_id for the last name King

6. Create a report that shows the organization chart for the entire employee table. Write the report so that each level will indent each employee 2 spaces. Since Oracle Application Express cannot display the spaces in front of the column, use - (minus) instead.

7. Re-write the report from 6 to exclude De Haan and all the people working for him.