 



Database Programming with SQL

* 1. : Self Joins and Hierarchical Queries Practice Activities

# Objectives

* + - Construct and execute a SELECT statement to join a table to itself using a self-join
    - Interpret the concept of a hierarchical query
    - Create a tree-structured report
    - Format hierarchical data
    - Exclude branches from the tree structure

# Vocabulary

Identify the vocabulary word for each definition below.

|  |  |
| --- | --- |
| 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 | Identifies the beginning row for a hierarchical query |
| Connect by prior | Specifies the relationship between parent rows and child rows of a hierarchical query |

# Try It / Solve It

For each problem, use the Oracle database.

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.

select e.last\_name "Emp#", m.last\_name "Mgr#"

from employees e join employees m on (e.manager\_id = m.employee\_id)

1. 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.

select e.last\_name "Emp#", m.last\_name "Mgr#"

from employees e left outer join employees m on (e.manager\_id = m.employee\_id)

order by "Emp#" asc

1. 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.

select e.last\_name "Employee", e.hire\_date "Emp Hired", m.last\_name "Mgr", m.hire\_date "Mgr Hired"

from employees e join employees m on (e.manager\_id = m.employee\_id and e.hire\_date < m.hire\_date)

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

select last\_name, salary, department\_id

from employees

start with first\_name = 'Lex' and last\_name = 'De Haan'

connect by prior employee\_id=manager\_id

1. 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;

din moment ce King este root, este ilogic sa egalam manager\_id cu employee\_id, si nu invers. Esp. because King nu are un manager id, pt ca el este seful tuturor

1. 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.

SELECT LPAD(last\_name, LENGTH(last\_name) + (LEVEL-1)\*2, '-') "organization chart "

FROM employees

START WITH last\_name = ( SELECT last\_name from employees WHERE manager\_id IS NULL)

CONNECT BY PRIOR employee\_id = manager\_id

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

SELECT LPAD(last\_name, LENGTH(last\_name) + (LEVEL-1)\*2, '-') "organization chart "

FROM employees

START WITH last\_name = ( SELECT last\_name from employees WHERE manager\_id IS NULL)

CONNECT BY PRIOR employee\_id = manager\_id AND last\_name != 'De Haan';

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