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DATA BASE MANAGEMENT SYSTEM-DBMS

1. Write the Query

•Problem: −Create a list of all tables whose first two characters in the name of the table is JO −The tables must be owned by the current Oracle User

•Tables Used: −User\_tables

SELECT table\_name

FROM user\_tables

WHERE table\_name LIKE 'JO%';

1. Write the Query

• Problem: − Create a list that includes the first initial of every employee's first name, a space, and the last name of the employee

• Tables Used: − Employees

SELECT CONCAT(SUBSTR(first\_name, 1, 1), ' ', last\_name) AS employee\_name

FROM employees;

1. Write the Query

• Problem: − Create a list of every employee's first name concatenated to a space and the employee's last name, and the email of all employees where the email address contains the string 'IN'

• Tables Used: − Employees

SELECT first\_name || ' ' || last\_name AS full\_name,

email

FROM employees

WHERE email LIKE '%IN%';

1. Write the Query

• Problem: − Create a list of 'smallest' last name and the 'highest' last name from the employees table

• Tables Used: − Employees

SELECT MIN(last\_name) AS smallest\_last\_name,

MAX(last\_name) AS highest\_last\_name

FROM employees;

1. Write the Query

• Problem: − Create a list of weekly salaries from the employees table where the weekly salary is between 700 and 3000 − The salaries should be formatted to include a $ sign and have two decimal points like: $9999.99

• Tables Used: − Employees

SELECT TO\_CHAR(salary, '$9999.99') AS formatted\_salary

FROM employees

WHERE salary BETWEEN 700 AND 3000;

1. Write the Query

• Problem: − Create a list of every employee and his related job title sorted by job\_title

• Tables Used: − Employees, Jobs

SELECT e.first\_name,

e.last\_name,

j.job\_title

FROM employees e

JOIN jobs j ON e.job\_id = j.job\_id

ORDER BY j.job\_title;

1. Write the Query

•Problem: −Create a list of every employee’s job, the salary ranges within the job, and the employee's salary −List the lowest and highest salary range within each job with a dash to separate the salaries like this: 100 –200

•Tables Used: −Employees, Jobs

SELECT j.job\_title,

CONCAT(TO\_CHAR(j.min\_salary, '9999'), ' – ', TO\_CHAR(j.max\_salary, '9999')) AS salary\_range,

e.salary

FROM employees e

JOIN jobs j ON e.job\_id = j.job\_id

ORDER BY j.job\_title;

1. Write the Query

• Problem: − Using an ANSII join method, create a list of every employee's first initial and last name, and department name −Make sure the tables are joined on all of the foreign keys declared between the two tables

• Tables Used: − Employees, Departments

SELECT CONCAT(SUBSTR(e.first\_name, 1, 1), '.') AS first\_initial,

e.last\_name,

d.department\_name

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id;

1. Write the Query

• Problem: − Change the previous listing to join only on the department\_idcolumn

• Tables Used: − Employees, Departments

SELECT CONCAT(SUBSTR(e.first\_name, 1, 1), '.') AS first\_initial,

e.last\_name,

d.department\_name

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id;

1. Write the Query

• Problem: − Create a list of every employee's last name, and the word nobody or somebody depending on whether or not the employee has a manager − Use the Oracle DECODE function to create the list

• Tables Used: − Employees

SELECT last\_name,

DECODE(manager\_id, NULL, 'nobody', 'somebody') AS manager\_status

FROM employees;

1. Write the Query

• Problem: − Create a list of every employee's first initial and last name, salary, and a yes or no to show whether or not an employee makes a commission − Fix this query to produce the result

• QUERY: Write the Query Query Result: SELECT SUBSTR(first\_name,1 1)||' '|last\_name, "Employee Name", salary "Salary", DEC(commission\_pctNULL, 'No', 'Yes')'Commission' FROM employees

SELECT SUBSTR(first\_name, 1, 1) || ' ' || last\_name AS "Employee Name",

salary AS "Salary",

DECODE(commission\_pct, NULL, 'No', 'Yes') AS "Commission"

FROM employees;

1. Write the Query

• Problem: − Create a list of every employee's last name, department name, city, and state\_province − Include departments without employees − An outer join is required

• Tables Used: − Employees, Departments, Locations

SELECT d.department\_name,

e.last\_name,

l.city,

l.state\_province

FROM departments d

LEFT OUTER JOIN employees e ON d.department\_id = e.department\_id

LEFT OUTER JOIN locations l ON d.location\_id = l.location\_id;

1. Write the Query

•Problem: −Create a list of every employee's first and last names, and the first occurrence of: commission\_pct, manager\_id, or -1 −If an employee gets commission, display the commission\_pctcolumn; if no commission, then display his manager\_id; if he has neither commission nor manager, then the number -1

•Tables Used: −Employees

SELECT first\_name,

last\_name,

COALESCE(commission\_pct, manager\_id, -1) AS "Commission/Manager/Default"

FROM employees;

1. Write the Query

• Problem: − Create a list of every employee's last name, salary, and job\_gradefor all employees working in departments with a department\_idgreater than 50

• Tables Used: − Employees, job\_grades

SELECT e.last\_name,

e.salary,

j.job\_grade

FROM employees e

JOIN job\_grades j ON e.job\_id = j.job\_id

WHERE e.department\_id > 50;

1. Write the Query

•Problem: −Create a list of every employee's first and last names, and the first occurrence of: commission\_pct, manager\_id, or -1 −If an employee gets commission, display the commission\_pctcolumn; if no commission, then display his manager\_id; if he has neither commission nor manager, then the number -1

•Tables Used: −Employees

SELECT first\_name,

last\_name,

COALESCE(commission\_pct, manager\_id, -1) AS "Commission/Manager/Default"

FROM employees;

1. Write the Query

• Problem: − Create a list of every employee's last name, salary, and job\_gradefor all employees working in departments with a department\_idgreater than 50

• Tables Used: − Employees, job\_grades

SELECT e.last\_name,

e.salary,

j.job\_grade

FROM employees e

JOIN job\_grades j ON e.job\_id = j.job\_id

WHERE e.department\_id > 50;

1. Write the Query

• Problem: − Produce a list of every employee's last name and department name − Include both employees without departments, and departments without employees

• Tables Used: − Employees, Departments

SELECT e.last\_name,

d.department\_name

FROM employees e

FULL OUTER JOIN departments d ON e.department\_id = d.department\_id;

1. Write the Query

•Problem: −Create a treewalkinglist of every employee's last name, his manager’s last name, and his position in the company −The top level manager has position 1, this manager's subordinates position 2, their subordinates position 3, and so on −Start the listing with employee number 100

•Tables Used: −Employees

SELECT LEVEL AS position,

e.last\_name AS employee\_last\_name,

m.last\_name AS manager\_last\_name

FROM employees e

LEFT JOIN employees m ON e.manager\_id = m.employee\_id

START WITH e.employee\_id = 100

CONNECT BY PRIOR e.employee\_id = e.manager\_id

ORDER BY LEVEL, e.last\_name;

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1. Write the Query

• Problem: − Produce a list of the earliest hire date, the latest hire date, and the number of employees from the employees table

• Tables Used: − Employees

SELECT

MIN(hire\_date) AS earliest\_hire\_date,

MAX(hire\_date) AS latest\_hire\_date,

COUNT(\*) AS number\_of\_employees

FROM employees;

1. Write the Query

• Problem: − Create a list of department names and the departmental costs (salaries added up) − Include only departments whose salary costs are between 1500 and 31000, and sort the listing by the cost

• Tables Used: − Employees, Departments

SELECT MIN(hire\_date) AS earliest\_hire\_date,

MAX(hire\_date) AS latest\_hire\_date,

COUNT(\*) AS number\_of\_employees

FROM employees;

1. Write the Query

• Problem: − Create a list of department names, the manager id, manager name (employee last name) of that department, and the average salary in each department

• Tables Used: − Employees, Departments

SELECT d.department\_name,

SUM(e.salary) AS departmental\_cost

FROM departments d

JOIN employees e ON d.department\_id = e.department\_id

GROUP BY d.department\_name

HAVING SUM(e.salary) BETWEEN 1500 AND 31000

ORDER BY departmental\_cost;

1. Write the Query

• Problem: − Show the highest average salary for the departments in the employees table − Round the result to the nearest whole number

• Tables Used: − Employees

SELECT ROUND(MAX(avg\_salary)) AS highest\_avg\_salary

FROM (

SELECT department\_id, AVG(salary) AS avg\_salary

FROM employees

GROUP BY department\_id

);

1. Write the Query

• Problem: − Create a list of department names and their monthly costs (salaries added up)

• Tables Used: − Employees, Departments

SELECT d.department\_name, SUM(e.salary) AS monthly\_cost

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

GROUP BY d.department\_name;

1. Write the Query

• Problem: − Create a list of department names, and job\_ids − Calculate the monthly salary cost for each job\_idwithin a department, for each department, and for all departments added together

• Tables Used: − Employees, Departments

SELECT

d.department\_name,

e.job\_id,

SUM(e.salary) AS monthly\_salary\_cost

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

GROUP BY d.department\_name, e.job\_id

UNION ALL

SELECT

'All Departments' AS department\_name,

e.job\_id,

SUM(e.salary) AS monthly\_salary\_cost

FROM employees e

GROUP BY e.job\_id;

1. Write the Query

•Problem: −Create a list of department names, and job\_ids −Calculate the monthly salary cost for each job\_idwithin a department, for each department, for each group of job\_idsirrespective of the department, and for all departments added together (Hint: Cube) •Tables Used: −Employees, Departments

SELECT

d.department\_name,

e.job\_id,

SUM(e.salary) AS monthly\_salary\_cost

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

GROUP BY CUBE(d.department\_name, e.job\_id);

1. Write the Query

• Problem: − Expand the previous list to also show if the department\_idor job\_id was used to create the subtotals shown in the output (Hint: Cube, Grouping)

• Tables Used: − Employees, Departments

SELECT

d.department\_name,

e.job\_id,

SUM(e.salary) AS monthly\_salary\_cost,

CASE

WHEN GROUPING(d.department\_name) = 1 THEN 'Subtotal for All Departments'

WHEN GROUPING(e.job\_id) = 1 THEN 'Subtotal for All Job IDs'

ELSE 'Detailed Data'

END AS subtotal\_indicator

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

GROUP BY CUBE(d.department\_name, e.job\_id);

1. Write the Query

• Problem: − Create a list that includes the monthly salary costs for each job title within a department − In the same list, display the monthly salary cost per city. (Hint: Grouping Sets)

• Tables Used: − Employees, Departments, Locations

SELECT

d.department\_name,

e.job\_id,

l.city,

SUM(e.salary) AS monthly\_salary\_cost,

CASE

WHEN GROUPING(d.department\_name) = 1 THEN 'Subtotal for All Departments'

WHEN GROUPING(e.job\_id) = 1 THEN 'Subtotal for All Job Titles'

WHEN GROUPING(l.city) = 1 THEN 'Subtotal for All Cities'

ELSE 'Detailed Data'

END AS subtotal\_indicator

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

JOIN locations l ON d.location\_id = l.location\_id

GROUP BY GROUPING SETS (

(d.department\_name, e.job\_id),

(l.city)

);

1. Write the Query

•Problem: −Create a list of employee names as shown and department ids −In the same report, list the department ids and department names. And finally, list the cities −The rows should not be joined, just listed in the same report. (Hint: Union)

•Tables Used: −Employees, Departments, Locations

-- List of employee names and their department IDs

SELECT

CONCAT(e.first\_name, ' ', e.last\_name) AS employee\_name,

e.department\_id AS department\_id,

NULL AS department\_name,

NULL AS city

FROM employees e

UNION ALL

-- List of department IDs and department names

SELECT

NULL AS employee\_name,

d.department\_id AS department\_id,

d.department\_name AS department\_name,

NULL AS city

FROM departments d

UNION ALL

-- List of cities

SELECT

NULL AS employee\_name,

NULL AS department\_id,

NULL AS department\_name,

l.city AS city

FROM locations l;

1. Write the Query

• Problem: − Create a list of each employee's first initial and last name, salary, and department name for each employee earning more than the average for his department

• Tables Used: − Departments, Employees

SELECT

SUBSTR(e.first\_name, 1, 1) AS first\_initial,

e.last\_name,

e.salary,

d.department\_name

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

WHERE e.salary > (

SELECT AVG(e2.salary)

FROM employees e2

WHERE e2.department\_id = e.department\_id

);