Vanier College

420-320-VA_Database_I

Lab_12 : Correlated Subqueries

Instructions:

- Run SQL-Plus using **scott/tiger** as user account/pw,
- Spool your work in a file to be named **Lab12_Spool.txt**
- set **linesize** to 200, and **pagesize** to 75
- **Type correctly the appropriate SQL commands and show their corresponding outputs (Q1 to Q6)**
- Please, submit your Work as a compressed file named **Lab12.zip** through LEA OMNIVOX. The submitted file should include the script file **Lab12_Script.sql**, the spool file **Lab12_Spool.txt** and the report file **Lab12_Report.docx**

CORRELATED SUBQUERIES

SQL correlated subquery is a subquery that depends on the outer query. It means that the WHERE clause of the correlated subquery uses the data of the outer query.

The main difference between a correlated subquery and a non-correlated subquery is that you cannot execute a correlated subquery alone (separately) like a non-correlated subquery. In addition, a correlated subquery executes once for each selected row from the outer query.

A correlated subquery is also known as synchronized subquery.

A. Correlated subquery in a SELECT Clause: Q1

B. Correlated subquery in a WHERE Clause: Q2

☞ **Use SCOTT account. Using Correlated Queries, generate the following lists**:

Q1) Print the names of all employees alongside the average salary for each one's department. (employee)

```
SELECT employeeid, lname, fname, deptid,
                                (SELECT AVG(salary)
                                 FROM employee e2
                                 WHERE e2.deptid = e1.deptid
                                ) AS "Dept Salary Avg"
FROM employee e1;
```

EMPLOYEEID	LNAME	FNAME	DEPTID	Dept Salary Avg
111	Smith	John	10	125000
246	Houston	Larry	40	150000
123	Roberts	Sandi	10	125000
433	McCall	Alex	20	73250
543	Dev	Derek	20	73250
200	Shaw	Jinku	30	34750
135	Garner	Stanley	30	34750
222	Chen	Sunny	10	125000

8 rows selected.

Q2) Find the list of all employees whose salary is above average for their departments. (employee)

```
SELECT employeeid, lname, fname, salary, deptid
FROM employee e
WHERE salary > (
                SELECT AVG(salary)
                FROM employee
                WHERE deptid = e.deptid
               );
```

EMPLOYEEID	LNAME	FNAME	SALARY	DEPTID
111	Smith	John	265000	10
543	Dev	Derek	80000	20
135	Garner	Stanley	45000	30

☞ **Use HR account. Using Correlated Queries, generate the following lists**:

Q3) What are the names of the employees and their department names? (employees, departments)

Steven	King	Executive
Neena	Kochhar	Executive
Lex	De Haan	Executive
Alexander	Hunold	IT
Bruce	Ernst	IT
David	Austin	IT
Valli	Pataballa	IT
Diana	Lorentz	IT
Nancy	Greenberg	Finance
Daniel	Faviet	Finance
John	Chen	Finance
Ismael	Sciarra	Finance
Jose Manuel	Urman	Finance
Luis	Popp	Finance
Den	Raphaely	Purchasing
Alexander	Khoo	Purchasing
Shelli	Baida	Purchasing
Sigal	Tobias	Purchasing
Guy	Himuro	Purchasing
Karen	Colmenares	Purchasing

107 rows selected.

Q4) List the IDs and names of all of the departments along with the manager's name as "Manager" (employees, departments)

10	Administration	Jennifer Whalen
20	Marketing	Michael Hartstein
30	Purchasing	Den Raphaely
40	Human Resources	Susan Mavris
50	Shipping	Adam Fripp
60	IT	Alexander Hunold
70	Public Relations	Hermann Baer
80	Sales	John Russell
90	Executive	Steven King
100	Finance	Nancy Greenberg
110	Accounting	Shelley Higgins
120	Treasury	
130	Corporate Tax	
140	Control And Credit	
150	Shareholder Services	
160	Benefits	
170	Manufacturing	
180	Construction	
190	Contracting	
200	Operations	
210	IT Support	
220	NOC	
230	IT Helpdesk	
240	Government Sales	
250	Retail Sales	
260	Recruiting	
270	Payroll	

27 rows selected.

Q5) List the names of all the departments and their average salaries, whose average salary is higher than the average salary in its region. (employees, departments, locations, countries)

DEPARTMENT_NAME	AVG(SALARY)
Public Relations	10000
Accounting	10154
Finance	8601.33333
Sales	8955.88235
Marketing	9500
Executive	19333.3333
IT	5760

7 rows selected.