Tema 3 Laborator Baze de Date

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Ex1: (20p) Sa se afiseze salariatii care au fost angajati în aceeaşi zi a lunii în care cei mai multi dintre salariati au fost angajati. (ziua lunii insemnand numarul zilei, indiferent de luna si an). Explicati solutia implementata.

```
SELECT last_name || ' ' || first_name "Numele Angajatului"
FROM employees
WHERE TO_CHAR(hire_date, 'DD') = (
    SELECT TO_CHAR(hire_date, 'DD')
    FROM employees
    HAVING COUNT(employee_id) = (
            SELECT MAX(employees_count)
            FROM (
              SELECT COUNT(employee_id) AS employees_count
              FROM employees
              GROUP BY TO_CHAR(hire_date, 'DD')
              )
            )
    GROUP BY TO_CHAR(hire_date, 'DD')
  );
```

	Numele Angajatului
1	Baida Shelli
2	Tobias Sigal
3	Bernstein David
4	Marvins Mattea
5	Ande Sundar
6	Fox Tayler
7	Bates Elizabeth
8	Taylor Jonathon
9	Grant Kimberely
10	Taylor Winston
11	Dellinger Julia
12	Walsh Alana

Explicatie: Din moment ce nu se specifica ce coloane trebuie afisate, aleg sa selectez numele concatenat cu prenumele si asociez un alias acestei coloane. In cadrul primei selectii folosesc conditia in clauza WHERE prin intermediul a mai multor subcereri. In prima subcerere selectez, tot din employees, ziua care va fi conditionata folosind HAVING pentru ca folosesc COUNT (vreau ziua cu un anumit numar de angajati). In a doua subcerere selectez numarul maxim de angajati pe care il accesez folosind un alias declarat in ultima subcerere(employees_count) care sa numere angajatii pentru fiecare zi a lunii.

Ex2: (10p) Cati subalterni are fiecare angajat? Se vor afisa codul, numele, prenumele si numarul de subalterni. Daca un angajat nu are subalterni se va afisa pentru numarul de angajati valoarea 0 (zero). Sa se rezolve folosind doua metode, atat subcerere in clauza SELECT, cat si subcerere in FROM.

Subcerere in FROM:

```
SELECT employee_id "Codul Angajatului", last_name "Nume", first_name "Prenume",
NVL(numar_angajati, 0) "Numarul de subalterni"
   FROM employees e,
   (SELECT manager_id, COUNT(employee_id) numar_angajati
        FROM employees
        GROUP BY manager_id
   ) mng
   WHERE mng.manager_id (+) = e.employee_id
   ORDER BY NVL(numar_angajati, 0) DESC;
```

Subcerere in SELECT:

```
SELECT employee_id "Codul Angajatului", last_name "Nume", first_name "Prenume",
   (SELECT COUNT(e.employee_id)
      FROM employees
      WHERE e.employee_id = manager_id
   ) "Numarul de subalterni"
FROM employees e
ORDER BY "Numarul de subalterni" DESC;
```

	Codul Angajatului	Nume	Prenume	Numarul de subalterni
1	100	King	Steven	14
2	123	Vollman	Shanta	8
3	122	Kaufling	Payam	8
4	121	Fripp	Adam	8
5	120	Weiss	Matthew	8
6	124	Mourgos	Kevin	8
7	147	Errazuriz	Alberto	6
8	148	Cambrault	Gerald	6
9	145	Russell	John	6
10	146	Partners	Karen	6
11	149	Zlotkey	Eleni	6
12	114	Raphaely	Den	5
13	108	Greenberg	Nancy	5
14	101	Kochhar	Neena	5
15	103	Hunold	Alexander	4
16	102	De Haan	Lex	1
17	205	Higgins	Shelley	1
18	201	Hartstein	Michael	1
19	104	Ernst	Bruce	0
20	105	Austin	David	0
21	106	Pataballa	Valli	0
22	107	Lorentz	Diana	0
23	109	Faviet	Daniel	0
24	110	Chen	John	0
25	111	Sciarra	Ismael	0
26	112	Urman	Jose Manuel	0
27	113	Popp	Luis	0
28	115	Khoo	Alexander	0
29	116	Baida	Shelli	0

Sunt 107 de valori(corespunzatoare celor 107 angajati din employees), insa nu pot incapea toti in poza.

EX3: (20p) Sa se listeze pentru fiecare angajat orasul in care a lucrat cele mai multe zile. Explicati solutia implementata.

```
WITH emp_history AS (
    SELECT e.employee_id, last_name, first_name, city, ROUND(end_date - start_date) zile
    FROM employees e JOIN job_history h ON (e.employee_id = h.employee_id)
        JOIN departments d ON (e.department_id = d.department_id)
        JOIN locations l ON (d.location_id = l.location_id)
  ),
  emp_emp AS (
    SELECT e.employee_id, last_name, first_name, city, ROUND(sysdate - hire_date) zile
    FROM employees e JOIN departments d ON (e.department_id = d.department_id)
        JOIN locations l ON (d.location_id = l.location_id)
  ),
  emp_emp_history AS (
    SELECT * FROM emp_history
    UNION
    SELECT * FROM emp_emp
  ),
  sum_zile AS (
    SELECT employee_id, last_name, first_name, city, SUM(zile) zile
    FROM emp_emp_history
    GROUP BY employee_id, last_name, first_name, city
  )

SELECT employee_id, last_name, first_name, city, zile
FROM sum_zile s_d
WHERE zile = ( SELECT max(zile)
    FROM sum_zile
```

```
    WHERE s_d.employee_id = employee_id
    )
ORDER BY employee_id;
```

	EMPLOYEE_ID	LAST_NAME	FIRST_NAME	CITY	ZILE
1	100	King	Steven	Seattle	12493
2	101	Kochhar	Neena	Seattle	14397
3	102	De Haan	Lex	Seattle	12474
4	103	Hunold	Alexander	Southlake	11562
5	104	Ernst	Bruce	Southlake	11059
6	105	Austin	David	Southlake	8832
7	106	Pataballa	Valli	Southlake	8607
8	107	Lorentz	Diana	Southlake	8240
9	108	Greenberg	Nancy	Seattle	9875
10	109	Faviet	Daniel	Seattle	9876
11	110	Chen	John	Seattle	8737
12	111	Sciarra	Ismael	Seattle	8735
13	112	Urman	Jose Manuel	Seattle	8577
14	113	Popp	Luis	Seattle	7937
15	114	Raphaely	Den	Seattle	10410
16	115	Khoo	Alexander	Seattle	9601
17	116	Baida	Shelli	Seattle	8650
18	117	Tobias	Sigal	Seattle	8803
19	118	Himuro	Guy	Seattle	8324
20	119	Colmenares	Karen	Seattle	8056
21	120	Weiss	Matthew	South San Francisco	9174
22	121	Fripp	Adam	South San Francisco	8908
23	122	Kaufling	Payam	South San Francisco	9982
24	123	Vollman	Shanta	South San Francisco	8725
25	124	Mourgos	Kevin	South San Francisco	7958
26	125	Nayer	Julia	South San Francisco	8811
27	126	Mikkilineni	Irene	South San Francisco	8372
28	127	Landry	James	South San Francisco	8264

Explicatie:

Am folosit clauza WITH pentru a crea 4 noi tabele aditionale temporare:

- emp_history - de unde selectez angajatii care au lucrat in trecut calculand numarul de zile lucrate in fiecare oras
- emp_emp – din care selectez angajatii care lucreaza in prezent calculand numarul de zile lucrate in orasul curent
- em_emp_history - aici practic reunesc cele doua tabele anterioare pentru a calcula numarul de zile in cazul in care un angajat a lucrat in mai multe orase in urmatorul tabel: sum_zile, problema este redusa, astfel, la o subcerere prin care afisez pentru fiecare angajat orasul in care a lucrat cele mai multe zile.