Baze de Date
Solutii – Laborator 8 – Saptamana 12

LABORATOR 8 - SAPTAMANA 12

3. Sa se afiseze numele si salariul celor mai prost platiti angajati

din fiecare departament.

```
-- Soluţia 1 (cu sincronizare):
SELECT last_name, salary, department_id
FROM employees e
WHERE salary = (select min(salary)
                from employees
                where e.department_id = department_id
                --group by department_id
                );
```

-- Soluţia 2 (fără sincronizare):

```
SELECT last_name, salary, department_id
FROM employees
WHERE (salary, department_id) IN  (select min(salary), department_id
                                   from employees
                                   group by department_id
                                  );
```

-- Soluţia 3: Subcerere în clauza FROM

```
SELECT e.last_name, e.salary, e.department_id
FROM employees e  join (select department_id, min(salary) min_sal
                        from employees
                        group by department_id
                        ) b
                  on(e.salary = b.min_sal and e.department_id = b.department_id);
```

--sau:

```
SELECT e.last_name, e.salary, e.department_id
FROM employees e  join (select department_id, min(salary) min_sal
                        from employees
                        group by department_id
                        ) b
                  on(e.department_id = b.department_id)
WHERE e.salary = b.min_sal;
```

```
-- 1. c)

--Soluţia 1 (subcerere necorelată în clauza FROM):

SELECT last_name, salary, e.department_id, department_name,
round(sal_med), nr_sal

FROM employees e, departments d,   (SELECT department_id, AVG(salary)
sal_med,

                                    COUNT(*) nr_sal

                                    FROM employees

                                    GROUP BY department_id

                                    ) ac

WHERE e.department_id = d.department_id

AND d.department_id = ac.department_id

AND salary > sal_med;
```

4. Sa se obtina numele si salariul salariatilor care lucreaza intr-un departament

in care exista cel putin 1 angajat cu salariul egal cu

salariul maxim din departamentul 30.

```
-- METODA 1 - IN
select last_name, salary, department_id
from employees
where department_id IN
                ( select department_id
                  from employees
                  where salary = (select max(salary)
                                  from employees
                                  where department_id = 30
                                  )
                 ); -- depart 30, 80, 80


-- METODA 2 - EXISTS
select last_name, salary, department_id
from employees e
where EXISTS
            ( select 'x'
              from employees
              where e.department_id = department_id
              and salary =  ( select max(salary)
                              from employees
                              where department_id = 30
                            ));
```

5. Să se afişeze codul, numele şi prenumele angajaţilor care au cel puţin doi subalterni.

select * from employees;

a)

```
select employee_id, last_name, first_name, manager_id
from employees mgr
where 2 <= (select count(employee_id)
        from employees
        where mgr.employee_id = manager_id
       );

--SAU:
select employee_id, last_name, first_name
from employees e join (select manager_id, count(employee_id)
                from employees
                group by manager_id
                having count(*) >= 2
                ) man
on e.employee_id = man.manager_id;
```

b) Cati subalterni are fiecare angajat? Se vor afisa codul, numele, prenumele si numarul de subalterni.

Daca un angajat nu are subalterni, o sa se afiseze 0 (zero).

```
-- subcerere sincronizata in select
select employee_id, last_name, first_name, (select count(employee_id)
                                            from employees
                                            where manager_id = e.employee_id
                                            ) "Nr subalterni"
from employees e;

-- subcerere nesincronizata in FROM
-- SAU:
select employee_id, last_name, first_name, nvl(NrSub, 0)
from employees e left join (select count(employee_id) NrSub, manager_id
                            from employees
                            group by manager_id
                           ) sub
   on(e.employee_id = sub.manager_id);
```

6. Să se determine locaţiile în care se află cel puţin un departament.

```
select * from departments;


-- REZOLVATI
-- CEREREA TREBUIE SA AFISEZE 7 LOCATII
-- VEZI IMAGINEAZA ATASATA IN LABORATOR


-- IN (care este echivalent cu  = ANY )
select location_id
from locations loc
where location_id IN (select distinct location_id
                      from departments
                      );


-- EXIST
select location_id
from locations loc
where EXISTS(select 'x'
             from departments
             where location_id = loc.location_id
             );
```

7. Să se determine departamentele în care nu există niciun angajat.

```
-- REZOLVATI
-- CEREREA TREBUIE SA RETURNEZE 16 DEPARTAMENTE
-- VEZI IMAGINEAZA ATASATA IN LABORATOR

-- METODA 1 - UTILIZAND NOT IN

SELECT department_id, department_name
FROM departments d
WHERE ___ NOT IN (SELECT ____
                  FROM ____
                  );

-- METODA 2 - UTILIZAND NOT EXISTS

SELECT department_id, department_name
FROM departments d
WHERE ___ (SELECT
           FROM
          );
```

8. Utilizând clauza WITH, să se scrie o cerere care afişează numele departamentelor

şi valoarea totală a salariilor din cadrul acestora.

Se vor considera departamentele a căror valoare totală a salariilor este mai mare

decât media valorilor totale ale salariilor tuturor angajatilor.

```
WITH val_dep AS (SELECT department_name, SUM(salary) AS total
                 FROM departments d join employees e ON (d.department_id = e.department_id)
                 GROUP BY department_name
                 ),

val_medie AS (SELECT SUM(total)/COUNT(total) AS medie
              FROM val_dep
              )

SELECT *
FROM val_dep
WHERE total > (SELECT medie
               FROM val_medie
               )
ORDER BY department_name;
```

9. Să se afişeze codul, prenumele, numele şi data angajării, pentru angajatii condusi de Steven King care au cea mai mare vechime dintre subordonatii lui Steven King. Rezultatul nu va conţine angajaţii din anul 1970.

```
-- subordonatii lui steven king


with subord as ( select employee_id, hire_date
                 from employees
                 where manager_id = (select employee_id
                                     from employees
                                     where lower(first_name || last_name) = 'stevenking'
                                    )
               ),
-- selectam dintre toti subordonatii doar pe cei care au cea mai mare vechime

vechime as (select employee_id
            from subord
            where hire_date = (select min(hire_date)
                               from subord
                               )
            )
```

```
select employee_id, last_name, first_name, salary, hire_date
from employees
where employee_id = (select employee_id
                     from vechime
                    );
```

10. Sa se obtina numele primilor 10 angajati avand salariul maxim. Rezultatul se va afişa în ordine crescătoare a salariilor.

```
-- Solutia 1: subcerere sincronizată

-- numaram cate salarii sunt mai mari decat linia la care a ajuns

select last_name, salary, rownum
from employees e
where 10 >
    (select count(salary)
     from employees
     where e.salary < salary
    );
```

-- Solutia 2: analiza top-n

-- ESTE CORECTA VARIANTA URMATOARE?

```
select employee_id, last_name, salary, rownum
from employees
where rownum <= 10
order by salary desc;
```

```
select employee_id, last_name, salary, rownum
from (select employee_id, salary, last_name
      from employees
      order by salary desc
     )
where rownum <= 10
order by salary;
```

16. Care sunt departamentele (cod si nume) care contin cel putin doua job-uri distincte?