Laborator 6

-- LABORATOR 4

16. Sa se afiseze codul, numele departamentului si numarul de angajati care

lucreaza in acel departament pentru:

a) departamentele in care lucreaza mai putin de 4 angajati;

SELECT e.department\_id, d.department\_name, COUNT(\*)

FROM employees e JOIN departments d ON (d.department\_id = e.department\_id)

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

HAVING COUNT(\*) < 4;

--afisam si departamentele care au 0 angajati

SELECT d.department\_id, d.department\_name, COUNT(employee\_id)

FROM employees e right JOIN departments d ON (d.department\_id = e.department\_id)

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

HAVING COUNT(employee\_id) < 4;

-- varianta 2

SELECT e.department\_id, d. department\_name, COUNT(\*)

FROM departments d JOIN employees e ON (d.department\_id = e.department\_id )

WHERE e.department\_id IN ( SELECT department\_id

FROM employees

GROUP BY department\_id

HAVING COUNT(\*) < 4

)

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

-- not in cu null !!!!!!!!!!!!!!!!!!!

SELECT e.department\_id, d. department\_name, COUNT(\*)

FROM departments d JOIN employees e ON (d.department\_id = e.department\_id )

WHERE e.department\_id NOT IN ( SELECT nvl(department\_id, 0)

FROM employees

GROUP BY department\_id

HAVING COUNT(\*) < 4

)

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

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

-- daca avem NOT IN, iar subcererea returneaza si valori null atunci trebuie sa eliminam/inlocuim valorile null

b) departamentul care are numarul maxim de angajati.

SELECT d.department\_id, d.department\_name, COUNT(employee\_id)

FROM employees e JOIN departments d ON (d.department\_id = e.department\_id)

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

HAVING count(employee\_id) = (select max(count(employee\_id))

from employees

group by department\_id);

17. Sa se afiseze salariatii care au fost angajati în aceeaşi zi a lunii în care cei mai

multi dintre salariati au fost angajati.

-- determinam numarul maxim de angajati dintr-o zi a lunii

select max(count(employee\_id))

from employees

group by to\_char(hire\_date, 'dd'); -- 12 angajati

-- selectam ziua lunii pentru care nr de angajati este egal cu numarul maxim calculat mai sus

select to\_char(hire\_date, 'dd')

from employees

group by to\_char(hire\_date, 'dd')

having count(employee\_id) = (select max(count(employee\_id))

from employees

group by to\_char(hire\_date, 'dd')

); -- ziua 24

-- cererea finala

select employee\_id, hire\_date

from employees

where to\_char(hire\_date, 'dd') = ( select to\_char(hire\_date, 'dd')

from employees

group by to\_char(hire\_date, 'dd')

having count(employee\_id) = (select max(count(employee\_id))

from employees

group by to\_char(hire\_date, 'dd')

)

);

18. Să se obţină numărul departamentelor care au cel puţin 15 angajaţi.

select count(count(department\_id)) "Nr departamente"

from employees

group by department\_id

having count(employee\_id) >= 15;

19. Să se obţină codul departamentelor şi suma salariilor angajaţilor care lucrează în

acestea, în ordine crescătoare. Se consideră departamentele care au mai mult de

10 angajaţi şi al căror cod este diferit de 30.

select department\_id, sum(salary)

from employees

group by department\_id

having count(employee\_id) > 10 and department\_id != 30

order by department\_id;

--sau: (variantele sunt echivalente dar a doua este mai eficienta decat prima)

--deoarece se executa prima data conditia din where

select department\_id, sum(salary)

from employees

where department\_id != 30

group by department\_id

having count(employee\_id) > 10

order by department\_id;

20. Care sunt angajatii care au mai avut cel putin doua joburi?

select employee\_id, count(job\_id)

from job\_history

group by employee\_id

having count(job\_id) >= 2;

21. Să se calculeze comisionul mediu din firmă, luând în considerare toate liniile din

tabel.

select commission\_pct

from employees;

Obs: Funcţiile grup ignoră valorile null ( cu exceptia lui COUNT(\*) ). Prin urmare, instrucţiunea

SELECT AVG(commission\_pct)

FROM employees; -- 0.22

va returna media valorilor pe baza liniilor din tabel pentru care există o valoare diferită

de null. Astfel, reiese că suma valorilor se împarte la numărul de valori diferite de null.

Calculul mediei pe baza tuturor liniilor din tabel se poate realiza utilizând funcţiile NVL,

NVL2 sau COALESCE:

SELECT AVG(NVL(commission\_pct, 0))

FROM employees; -- 0.07

O altă variantă este dată de o cerere de forma:

SELECT SUM(commission\_pct)/COUNT(\*)

FROM employees; -- 0.07

-- sau:

SELECT SUM(commission\_pct)/COUNT(employee\_id)

FROM employees; -- 0.07

-- DECODE]

DECODE(value, if1, then1, if2, then2, ... , ifN, thenN, else);

22. Scrieţi o cerere pentru a afişa job-ul, salariul total pentru job-ul respectiv pe

departamente si salariul total pentru job-ul respectiv pe departamentele 30, 50, 80.

Se vor eticheta coloanele corespunzător. Rezultatul va apărea sub forma de mai jos:

Job Dep30 Dep50 Dep80 Total

------------------------------------------------------------------------------

SELECT job\_id, nvl(SUM(DECODE(department\_id, 30, salary)), 0) Dep30,

nvl(SUM(DECODE(department\_id, 50, salary)), 0) Dep50,

nvl(SUM(DECODE(department\_id, 80, salary)), 0) Dep80,

SUM(salary) Total

FROM employees

GROUP BY job\_id;

Metoda 2: (cu subcereri corelate în clauza SELECT)

SELECT job\_id, (SELECT SUM(salary)

FROM employees

WHERE department\_id = 30 AND job\_id = e.job\_id) Dep30,

(SELECT SUM(salary)

FROM employees

WHERE department\_id = 5 AND job\_id = e.job\_id) Dep50,

(SELECT SUM(salary)

FROM employees

WHERE department\_id = 8 AND job\_id = e.job\_id) Dep80,

SUM(salary) Total

FROM employees e

GROUP BY job\_id;

[Exerciţii – subcereri în clauza FROM]

24. Să se afişeze codul, numele departamentului şi suma salariilor pe departamente.

-- varianta 1

SELECT d.department\_id, department\_name, sum(salary)

FROM departments d join employees e on (d.department\_id = e.department\_id)

GROUP by d.department\_id, department\_name;

--varianta 2

SELECT d.department\_id, department\_name, a.suma

FROM departments d, (SELECT department\_id, SUM(salary) suma

FROM employees

GROUP BY department\_id

) a

WHERE d.department\_id = a.department\_id;

25. Să se afişeze numele, salariul, codul departamentului si salariul mediu din

departamentul respectiv.

--subcerere in FROM

select last\_name, salary, department\_id, SalMed

from employees join (select round(avg(salary)) SalMed, department\_id

from employees

group by department\_id

)

using (department\_id);

-- subcerere in select

select last\_name, salary, department\_id, (select round(avg(salary))

from employees

where e.department\_id = department\_id

) SalMediu

from employees e

where department\_id is not null;

select last\_name, salary, department\_id

from employees;

Ex1 : Sa se afiseze codul, numele departamentului si numarul de angajati care lucreaza in acel

departament pentru departamentul care are numarul minim de angajati.

select d.department\_id, department\_name, count(\*) NumarAng

from employees e join departments d on (e.department\_id=d.department\_id)

group by d.department\_id, department\_name

having count(employee\_id)= (select min(count(\*))

from employees

group by employee\_id

);

Ex2 : Sa se afiseze numele, salariul, titlul jobului, departamentul, orasul si tara

in care lucreaza angajatii condusi direct de „hunoldalexander”.

(exista in tabel numele asta ??)

select ee.last\_name, ee.salary, j.job\_title, d.department\_id, l.city, c.country\_name

from employees e join jobs j on (e.job\_id=j.job\_id)

join departments d on (e.department\_id=d.department\_id)

join locations l on (d.location\_id=l.location\_id)

join countries c on (c.country\_id =l.country\_id)

join employees ee on (e.employee\_id=ee.employee\_id)

where lower(e.manager\_id)='hunoldalexander' and ee.manager\_id=e.manager\_id;

Ex3 : Sa se afiseze numele, salariul, codul departamentului si salariul mediu din departamentul respective

select department\_name, d.department\_id, round(sum(salary)/count(employee\_id)) MedSal

from employees e join departments d on (e.department\_id=d.department\_id)

group by d.department\_id, department\_name;

Ex4 : Sa se afiseze codul, numele departamentului si numarul de angajati

pentru departamentele care au numar minim de angajati.

select d.department\_id, department\_name, count(employee\_id)

from employees e join departments d on (e.department\_id=d.department\_id)

group by d.department\_id, department\_name

having count(employee\_id)= (select min(count(employee\_id))

from employees

group by department\_id);

Ex5 : Să se creeze o cerere prin care să se afişeze numărul total de angajaţi şi,

din acest total, numărul celor care au fost angajaţi în 1997, 1998, 1999 si 2000.

Denumiti capetele de tabel in mod corespunzator. (Laborator 4 – exercitiul 23)

SELECT count(employee\_id) Total, count(DECODE(to\_char(hire\_date,'yyyy'), '1997', employee\_id)) an1997,

count(DECODE(to\_char(hire\_date,'yyyy'), '1998', employee\_id)) an1998,

count(DECODE(to\_char(hire\_date,'yyyy'), '1999', employee\_id)) an1999,

count(DECODE(to\_char(hire\_date,'yyyy'), '2000', employee\_id)) an2000

from employees;