**-- B.D. este angajati**

**--I. Subinterogari monolinie**

**--EX. 1**

-- Sa se afiseze angajatii cu salariul mai mare decat cel al angajatului

-- cu codul 7566.

SELECT ename [Nume], sal Salariu

FROM emp

WHERE sal >

(SELECT sal

FROM emp

WHERE empno = 7566)

-- Rezultatul este:

***Nume*** ***Salariu***

SCOTT 3000.00

KING 5000.00

FORD 3000.00

--Executia are loc in 2 pasi:

--Pasul 1:

-- Se executa subinterogarea (necorelata):

(SELECT sal

FROM emp

WHERE empno = 7566)

-- Rezultatul este: 2975

--Pasul 2:

-- Se executa interogarea externa, cu rezultatul intors de subinterogare:

SELECT ename [Nume], sal Salariu

FROM emp

WHERE sal > 2975

-- Rezultatul este acelasi:

***Nume*** ***Salariu***

SCOTT 3000.00

KING 5000.00

FORD 3000.00

**--EX. 2**

-- Sa se afiseze angajatii cu acelasi job

-- ca cel al angajatului cu codul 7566.

SELECT ename [Nume], job

FROM emp

WHERE job =

(SELECT job

FROM emp

WHERE empno = 7369)

-- Rezultatul este:

***Nume*** ***job***

SMITH CLERK

ADAMS CLERK

JAMES CLERK

MILLER CLERK

**--EX. 3**

-- Sa se afiseze angajatii cu acelasi job

-- ca cel al angajatului cu codul 7566 si cu salariul

-- mai mare decat al angajatului cu codul 7876.

SELECT ename Nume, job, sal Salariu

FROM emp

WHERE job =

(SELECT job

FROM emp

WHERE empno = 7369

)

AND sal >

(SELECT sal

FROM emp

WHERE empno = 7876

)

-- Rezultatul este:

***Nume*** ***job*** ***Salariu***

MILLER CLERK 1300.00

**--EX. 4**

-- Sa se afiseze numele, jobul si salariul angajatilor

-- cu salariul minim.

SELECT ename Nume, job, sal Salariu

FROM emp

WHERE sal = (SELECT MIN(sal) FROM emp)

-- Rezultatul este:

***Nume***  ***job*** ***Salariu***

SMITH CLERK 800.00

**--EX. 5**

-- Sa se afiseze toate departamentele cu salariul

-- minim mai mare decat salariul minim al departamentului 20.

SELECT deptno [Nr. departament], MIN(sal) [Salariu minim depart.]

FROM emp

GROUP BY deptno

HAVING MIN(sal) >

(SELECT MIN(sal)

FROM emp

WHERE deptno = 20

)

-- Rezultatul este:

***Nr. departament*** ***Salariu minim depart.***

10 1300.00

30 950.00

-- Obs.: Subinterogarea executata da rezultatul 800.

**--EX. 6**

-- Afisare job cu cel mai mic salariu mediu

SELECT job, AVG(sal) [salariul mediu minim/job]

FROM emp

GROUP BY job

HAVING AVG(sal) = (SELECT MIN(AVG(sal)) FROM emp GROUP by job)

--OBS!

-- In Oracle merge, aici NU!

-- Mesaj:

Msg 130, Level 15, State 1, Line 39

Cannot perform an aggregate function on an expression containing an aggregate or a subquery..

-- Rescriere pt. Microsoft:

SELECT job,AVG(sal) [Salariul mediu minim/job]

FROM emp

GROUP BY job

HAVING AVG(sal) = (SELECT TOP 1 AVG(sal) FROM emp GROUP by job ORDER BY AVG(sal))

-- Rezultatul este:

***job*** ***Salariul mediu minim/job***

CLERK 1037.500000

--sau

DECLARE @sal\_min REAL

SET @sal\_min = (SELECT TOP 1 AVG(sal) FROM emp GROUP by job ORDER BY AVG(sal))

SELECT job, AVG(sal) [Salariul mediu minim/job]

FROM emp

GROUP BY job

HAVING AVG(sal) = @sal\_min

-- Rezultatul este:

***job*** ***Salariul mediu minim/job***

CLERK 1037.500000

**--II. Subinterogari multi linie**

**--EX. 7**

-- Sa se afiseze numele, salariul si nr departamentului

-- pt. angajatii cu salariul egal cu sal. minim din orice departament

SELECT ename Nume, sal Salariu, deptno [Nr. departament]

FROM emp

WHERE sal IN (SELECT MIN(sal) FROM emp GROUP BY deptno)

-- Rezultatul este:

***Nume*** ***Salariu*** ***Nr. departament***

SMITH 800.00 20

JAMES 950.00 30

MILLER 1300.00 10

--sau cei cu sal. egal cu minimul din depart. lor

SELECT ename Nume, sal Salariu, emp.deptno [Nr. departament]

FROM emp, (SELECT deptno, MIN(sal) minim FROM emp GROUP BY deptno) sal\_min

WHERE sal =sal\_min.minim AND emp.deptno = sal\_min.deptno

-- Rezultatul este:

***Nume*** ***Salariu*** ***Nr. departament***

MILLER 1300.00 10

SMITH 800.00 20

JAMES 950.00 30

--Acelasi lucru, ca interogarea anterioara, dar cu JOIN:

SELECT ename Nume, sal Salariu, emp.deptno [Nr. departament]

FROM emp JOIN (SELECT deptno, MIN(sal) minim FROM emp GROUP BY deptno) sal\_min

ON sal =sal\_min.minim AND emp.deptno = sal\_min.deptno

**--EX. 8**

--Sa se afiseze angajatii cu salariul in valoare de

-- 800, 950 sau 1300.

SELECT ename Nume, sal Salariu, deptno [Nr. departament]

FROM emp

WHERE sal IN (800, 950, 1300)

-- Rezultatul este:

***Nume*** ***Salariu***  ***Nr. departament***

SMITH 800.00 20

JAMES 950.00 30

MILLER 1300.00 10

**--EX. 9**

-- Sa se afiseze codul, numele si jobul angajatilor

-- cu salariul mai mic decat al oricarui functionar

-- si care nu sunt functionari.

SELECT empno Cod, ename Nume, job

FROM emp

WHERE sal < ANY (SELECT sal FROM emp WHERE job = 'clerk')

AND job < > 'clerk'

-- Rezultatul este:

***Cod*** ***Nume*** ***job***

7521 WARD SALESMAN

7654 MARTIN SALESMAN

-- OBS.: < ANY inseamna < maxim

-- > ANY inseamna > minim

-- = ANY inseamna IN

**--EX. 10**

-- Sa se afiseze codul, numele si jobul angajatilor

-- cu salariul mai mare decat media salariilor tuturor departamentelor.

SELECT empno Cod, ename Nume, job

FROM emp

WHERE sal > ALL (SELECT AVG(sal) FROM emp GROUP BY deptno)

-- Rezultatul este:

***Cod*** ***Nume*** ***job***

7566 JONES MANAGER

7788 SCOTT ANALYST

7839 KING PRESIDENT

7902 FORD ANALYST

-- OBS.: > ALL inseamna > maxim

-- < ALL inseamna < minim

**--EX. 11**

--Sa se afiseze angajatii care au subordonati (sunt sefi).

SELECT angajat.empno [Cod sef], angajat.ename [Nume sef]

FROM emp angajat

WHERE angajat.empno IN (SELECT DISTINCT( mgr) FROM emp WHERE mgr IS NOT NULL)

-- Rezultatul este:

***Cod sef*** ***Nume sef***

7566 JONES

7698 BLAKE

7782 CLARK

7788 SCOTT

7839 KING

7902 FORD

--Sa se obtina salariatii care nu au subordonati.

SELECT a.ename

FROM emp a

WHERE a.empno NOT IN (SELECT distinct m.mgr

FROM emp m WHERE mgr is not null);

-- Rezultatul este:

***ename***

SMITH

ALLEN

WARD

MARTIN

TURNER

ADAMS

JAMES

MILLER

**--EX. 12**

-- Afisare angajati cu salariul mai mare decat

-- salariul mediu din depart. din care fac parte

SELECT a.ename [Nume salariat], a.sal [Salariu angajat],a.deptno [Nr. departament], b.salmed [Salariu mediu departament]

FROM emp a, (SELECT deptno, avg(sal) salmed FROM emp b GROUP BY deptno) b

WHERE a.deptno = b.deptno AND a.sal > b.salmed

-- Rezultatul este:

***Nume salariat*** ***Salariu angajat*** ***Nr. departament*** ***Salariu mediu departament***

KING 5000.00 10 2916.666666

FORD 3000.00 20 2175.000000

SCOTT 3000.00 20 2175.000000

JONES 2975.00 20 2175.000000

BLAKE 2850.00 30 1566.666666

ALLEN 1600.00 30 1566.666666

--sau (cu JOIN)

SELECT a.ename [Nume salariat], a.sal [Salariu angajat],a.deptno [Nr. departament], STR(b.salmed,7,2) [Salariu mediu departament]

FROM emp a JOIN (SELECT deptno, avg(sal) salmed FROM emp b GROUP BY deptno) b

ON a.deptno = b.deptno

WHERE a.sal > b.salmed

--ori (tot cu JOIN)

SELECT a.ename [Nume salariat], a.sal [Salariu angajat],a.deptno [Nr. departament], STR(b.salmed,7,2) [Salariu mediu departament]

FROM emp a JOIN (SELECT deptno, avg(sal) salmed FROM emp b GROUP BY deptno) b

ON a.deptno = b.deptno AND a.sal > b.salmed

-- Rezultatul este:

***Nume salariat*** ***Salariu angajat*** ***Nr. departament*** ***Salariu mediu departament***

KING 5000.00 10 2916.666666

FORD 3000.00 20 2175.000000

SCOTT 3000.00 20 2175.000000

JONES 2975.00 20 2175.000000

BLAKE 2850.00 30 1566.666666

ALLEN 1600.00 30 1566.666666

**--EXEMPLE DE SUBINTEROGARI CORELATE SI NECORELATE**

USE library

GO

--1. Exemplu cu tabela (cu specificare explicita coloane) creata de subinterogare

-- (pt. afisare informatii despre membrii imprumutati, cu amenda > 5$)

SELECT TOP 10 m.member\_no [Cod membru], m.lastname [Nume de familie], m.firstname Prenume, suma [Suma amenzilor]

FROM member AS m , ( SELECT lh.member\_no, SUM(fine\_assessed) FROM loanhist AS lh

GROUP BY lh.member\_no ) AS amenda (membru, suma)

WHERE 5 < suma AND m.member\_no = membru

ORDER BY m.lastname, Prenume

-- Rezultatul este (primii 10 membri/41):

***Cod membru*** ***Nume*** ***Prenume*** ***Suma amenzilor***

617 Anderson Peter 182.00

203 Anderson Sarah 78.00

969 Barr Eva 234.00

789 Barr Gary 234.00

1181 Barr Joshua 26.00

778 Barr Teresa 208.00

1852 Brooke Darlene 52.00

1566 Brooke Darlene 156.00

1934 Brooke Jose 104.00

2655 Chen Brian 130.00

--1.1 Rescriere exemplu cu Join

SELECT TOP 10 m.member\_no [Cod membru], m.lastname [Nume], m.firstname [Prenume], SUM( fine\_assessed) [Suma amenzilor]

FROM member AS m JOIN loanhist lh

on m.member\_no = lh.member\_no

GROUP by m.member\_no, m.lastname, m.firstname

HAVING SUM(fine\_assessed ) > 5

ORDER BY [Nume], [Prenume]

-- Rezultatul este (primii 10 membri/41):

***Cod membru*** ***Nume*** ***Prenume*** ***Suma amenzilor***

617 Anderson Peter 182.00

203 Anderson Sarah 78.00

969 Barr Eva 234.00

789 Barr Gary 234.00

1181 Barr Joshua 26.00

778 Barr Teresa 208.00

1852 Brooke Darlene 52.00

1566 Brooke Darlene 156.00

1934 Brooke Jose 104.00

2655 Chen Brian 130.00

--1.2 Rescriere exemplu cu tabela temporara (join modificat-creaza tabela cu subinter.)

SELECT m.member\_no [Cod membru], lastname [Nume], firstname Prenume, b.suma\_am [Suma amenzilor] into #temp

FROM member AS m JOIN

( SELECT member\_no,SUM(fine\_assessed) suma\_am FROM loanhist AS lh GROUP BY member\_no ) b

ON m.member\_no = b.member\_no WHERE b.suma\_am > 5

ORDER BY Nume, Prenume

SELECT TOP 10 \* from #temp ORDER BY [Nume], [Prenume]

-- Rezultatul este (primii 10 membri/41):

***Cod membru*** ***Nume*** ***Prenume*** ***Suma amenzilor***

617 Anderson Peter 182.00

203 Anderson Sarah 78.00

969 Barr Eva 234.00

789 Barr Gary 234.00

1181 Barr Joshua 26.00

778 Barr Teresa 208.00

1852 Brooke Darlene 52.00

1566 Brooke Darlene 156.00

1934 Brooke Jose 104.00

2655 Chen Brian 130.00

--1.3 Rescriere exemplu cu Where pe tabel (fara specificare explicita coloane) creat in Subinterogare

SELECT TOP 10 m.member\_no [Cod membru], lastname [Nume], firstname Prenume, lh.amenda [Suma amenzilor]

FROM member AS m , (SELECT member\_no, SUM( fine\_assessed) amenda

FROM loanhist group by member\_no ) lh

WHERE m.member\_no = lh. member\_no and lh.amenda > 5

ORDER BY [Nume], [Prenume]

-- Rezultatul este (primii 10 membri/41):

***Cod membru*** ***Nume*** ***Prenume*** ***Suma amenzilor***

617 Anderson Peter 182.00

203 Anderson Sarah 78.00

969 Barr Eva 234.00

789 Barr Gary 234.00

1181 Barr Joshua 26.00

778 Barr Teresa 208.00

1852 Brooke Darlene 52.00

1566 Brooke Darlene 156.00

1934 Brooke Jose 104.00

2655 Chen Brian 130.00

--1.4 Rescriere exemplu folosind subinterogare corelata ca expresie

SELECT TOP 10 member\_no [Cod membru], lastname [Nume], firstname Prenume,

(SELECT SUM(fine\_assessed) FROM loanhist AS lh WHERE m.member\_no = lh.member\_no) [Suma amenzilor]

FROM member AS m

WHERE 5 < ( SELECT SUM(fine\_assessed) FROM loanhist AS lh WHERE m.member\_no = lh.member\_no )

ORDER BY [Nume], [Prenume]

-- Rezultatul este (primii 10 membri/41):

***Cod membru*** ***Nume*** ***Prenume*** ***Suma amenzilor***

617 Anderson Peter 182.00

203 Anderson Sarah 78.00

969 Barr Eva 234.00

789 Barr Gary 234.00

1181 Barr Joshua 26.00

778 Barr Teresa 208.00

1852 Brooke Darlene 52.00

1566 Brooke Darlene 156.00

1934 Brooke Jose 104.00

2655 Chen Brian 130.00

--2. Sa se afiseze informatii despre angajatii (cod, nume, job) care au job-uri in categorii profesionale

-- de minim 3 angajati (inclusiv ei).

USE angajati

GO

SELECT empno [Cod angajat], ename [Nume angajat], job

FROM emp a

WHERE 2 < (SELECT COUNT(\*) FROM emp WHERE job = a.job) --subinterogare corelata

ORDER by job, ename

-- Rezultatul este:

***Cod angajat*** ***Nume angajat*** ***job***

7876 ADAMS CLERK

7900 JAMES CLERK

7934 MILLER CLERK

7369 SMITH CLERK

7698 BLAKE MANAGER

7782 CLARK MANAGER

7566 JONES MANAGER

7499 ALLEN SALESMAN

7654 MARTIN SALESMAN

7844 TURNER SALESMAN

7521 WARD SALESMAN

--3. Sa se afiseze informatii despre angajatii (cod, nume, job) care au job-uri

-- in categorii profesionale de minim 3 angajati (fara ei).

SELECT empno [Cod angajat], ename [Nume angajat], job

FROM emp a

WHERE 2 < (SELECT COUNT(\*) FROM emp WHERE job = a.job AND ename <> a.ename )-- subinterogare corelata

ORDER by job, ename;

-- Rezultatul este:

***Cod angajat*** ***Nume angajat***  ***job***

7876 ADAMS CLERK

7900 JAMES CLERK

7934 MILLER CLERK

7369 SMITH CLERK

7499 ALLEN SALESMAN

7654 MARTIN SALESMAN

7844 TURNER SALESMAN

7521 WARD SALESMAN