

Database



Subqueries

Empno	ename	sal
1150	Martin	700
1112	jones	1500
8759	Mark	3000
3255	jemmy	1000
7444	Allen	2500

ename
Mark
Allen

Main Query



“Which employees have a salary greater than Jones’ salary?”

Subquery



“What is Jones’ salary?”



Subqueries

```
Select  ename from emp where sal > (select sal from emp  
where ename ='jones')
```

Example 1

- Write a query to retrieve the information (name and job) of the employees whose job is the same as employee with number 7369 ?

Example 1

```
SQL> SELECT      ename, job
      2  FROM      emp
      3  WHERE      job =
      4              (SELECT      job
      5                      FROM      emp
      6                      WHERE      empno = 7369) ;
```

ENAME	JOB
JAMES	CLERK
SMITH	CLERK
ADAMS	CLERK
MILLER	CLERK

Example 2

- Write a query to retrieve the information (name and job) of the employees whose job is the same as employee with number 7369 and their salary is greater than the salary of employee 7876?

Example 2

```
SQL> SELECT  ename, job
2  FROM      emp
3  WHERE     job =
4             (SELECT  job
5  FROM      emp
6  WHERE     empno = 7369)
7  AND      sal >
8             (SELECT  sal
9  FROM      emp
10 WHERE     empno = 7876) ;
```

CLERK

1100

ENAME	JOB
-----	-----
MILLER	CLERK

Example 3

- Write a query to retrieve the information (name and job) of the employees whose job is the same as employee with number 7369 and their salary equal the salary of employee 7369?

Example 3

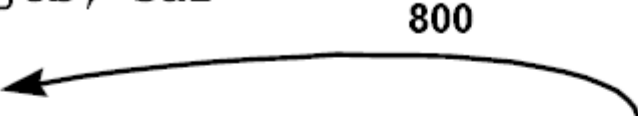
```
Select  ename,job from emp where (job,sal) in (select  
job,sal from emp where empno=7369)
```

Example 4

- Write a query to retrieve the information (name , job and salary) of the lowest paid employees?

Example 4

```
SQL> SELECT  ename, job, sal
2  FROM      emp
3  WHERE     sal =
4              (SELECT MIN(sal)
5                  FROM emp);
```



ENAME	JOB	SAL
-----	-----	-----
SMITH	CLERK	800

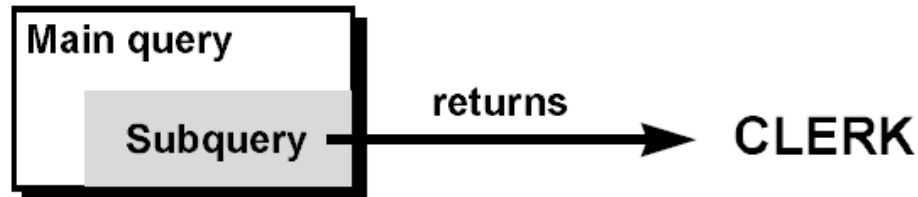
Example 5- any / all / in

```
SQL> SELECT  empno, ename, job 1300
2 FROM      emp      1100
3 WHERE     sal < ANY  800
4           (SELECT  sal
5             FROM    emp
6             WHERE   job = 'CLERK')
7 AND       job <> 'CLERK';
950
```

EMPNO	ENAME	JOB
7654	MARTIN	SALESMAN
7521	WARD	SALESMAN

Single-row vs Multiple-row

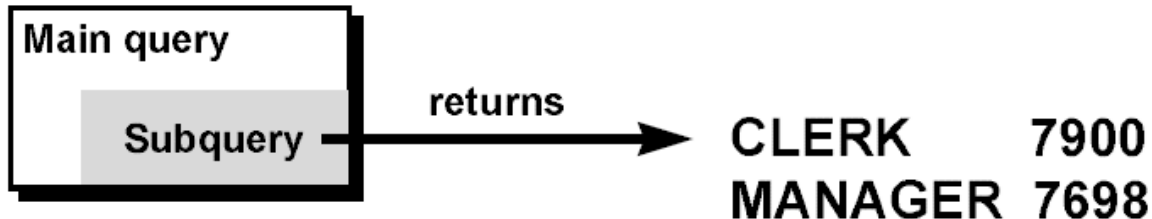
- **Single-row subquery**



- **Multiple-row subquery**



- **Multiple-column subquery**



Example 6

- Write a query to display the employees whose department name length is more than 4 characters

❖ Sql> select emp.name from emp, dep where dep.id = emp.d_id
and length(dep.name) > 4 <Using join>

❖ Sql> select name from emp where d_id in (select id from dep
where length(name) > 4) <Using sub-query>

Example 7

- List the employees who are senior to BLAKE working at CHICAGO & BOSTON.
- ❖ `select ename from emp where hiredate < (select hiredate from emp where ename = 'BLAKE') and deptno in (Select deptno from dept where loc in ('CHICAGO', 'BOSTON'));`

Example 8

- List all departments that have a minimum salary greater than the minimum salary of department 20.
- ❖ Select deptno, Min(sal) from emp group by deptno Having Min(sal) > (select Min(sal) from emp where deptno = 20);

Example 9

- List the departments' names which are having max number of employees working in them.

❖ select dname from dept where deptno in (select deptno
from emp group by deptno having count (deptno) = (select
max(count(deptno)) from emp group by deptno));