

Displays employees who are not IT programmers and whose salary is less than that of any IT programmer. The maximum salary that a programmer earns is \$9,000.

< ANY means less than the maximum. >ANY means more than the minimum. =ANY is equivalent to IN.

Using the ALL Operator in Multiple-Row Subqueries

```
SELECT employee_id, last_name, job_id, salary  
FROM employees  
WHERE salary < ALL (SELECT salary FROM employees WHERE job_id = 'IT_PROG')  
AND job_id <> 'IT_PROG';
```

Displays employees whose salary is less than the salary of all employees with a job ID of IT_PROG and whose job is not IT_PROG.

➤ ALL means more than the maximum, and <ALL means less than the minimum.

The NOT operator can be used with IN, ANY, and ALL operators.

Null Values in a Subquery

```
SELECT emp.last_name FROM employees emp  
WHERE emp.employee_id NOT IN (SELECT mgr.manager_id FROM employees mgr);
```

Notice that the null value as part of the results set of a subquery is not a problem if you use the IN operator. The IN operator is equivalent to =ANY. For example, to display the employees who have subordinates, use the following SQL statement:

```
SELECT emp.last_name  
FROM employees emp  
WHERE emp.employee_id IN (SELECT mgr.manager_id FROM employees mgr);
```

Display all employees who do not have any subordinates:

```
SELECT last_name FROM employees  
WHERE employee_id NOT IN (SELECT manager_id FROM employees WHERE manager_id IS  
NOT NULL);
```

Find the Solution for the following:

1. The HR department needs a query that prompts the user for an employee last name. The query then displays the last name and hire date of any employee in the same department as the employee whose name they supply (excluding that employee). For example, if the user enters Zlotkey, find all employees who work with Zlotkey (excluding Zlotkey).

```
SELECT last_name, hire_date FROM employees WHERE department_id =  
    (SELECT department_id FROM employees WHERE last_name =  
        UPPER('employee-last-name')) AND last_name <> UPPER('employee-  
        last-name')
```

2. Create a report that displays the employee number, last name, and salary of all employees who earn more than the average salary. Sort the results in order of ascending salary.

```
SELECT employee_id, last_name, salary  
FROM employees  
WHERE > (SELECT AVG(salary) FROM employees)  
ORDER BY salary ASC;
```

3. Write a query that displays the employee number and last name of all employees who work in a department with any employee whose last name contains a *u*.

```
SELECT employee_id, last_name FROM employees  
WHERE department_id IN (SELECT DISTINCT department_id  
FROM employees WHERE LOWER(last_name) LIKE '%u%');
```

4. The HR department needs a report that displays the last name, department number, and job ID of all employees whose department location ID is 1700.

```
SELECT e.last_name, e.department_id, e.job_id  
FROM employees e  
WHERE e.department_id IN (SELECT d.department_id FROM  
departments d WHERE d.location_id = 1700);
```

5. Create a report for HR that displays the last name and salary of every employee who reports to King.

```
SELECT e.last_name, e.salary  
FROM employees e WHERE e.manager_id = (SELECT employee_id FROM employees WHERE  
last_name = 'King');
```

6. Create a report for HR that displays the department number, last name, and job ID for every employee in the Executive department.

```
SELECT e.department_id, e.last_name, e.job_id  
FROM employees e WHERE e.department_id = (SELECT department_id FROM departments WHERE  
departments_name = 'Executive');
```

7. Modify the query 3 to display the employee number, last name, and salary of all employees who earn more than the average salary and who work in a department with any employee whose last name contains a *u*.

```
SELECT employee_id, last_name, salary  
FROM employees  
WHERE salary > (SELECT AVG(salary) FROM employees)  
AND department_id IN (SELECT DISTINCT department_id  
FROM employees  
WHERE LOWER(last_name) LIKE '%u%')  
ORDER BY salary ASC;
```