

(77)

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  
last\_name = 'Zlotkey' AND last\_name <> 'Zlotkey');~~

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 salary > (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 department_id FROM  
Employees WHERE last_name LIKE 'C%.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 last_name , department_id , job_id FROM employees  
WHERE department_id IN (Select department_id FROM  
departments WHERE location_id = 1700);
```

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

```
SELECT last_name , salary FROM Employees WHERE  
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 department_id , last_name , job_id FROM  
employees WHERE department_id = (SELECT department_id  
FROM departments WHERE department_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  
department_id FROM employee WHERE last_name  
LIKE '%.U%'));
```

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Evaluation Procedure	Marks awarded
Query(5)	5
Execution (5)	5
Viva(5)	5
Total (15)	15
Faculty Signature	<u>DPL</u>