

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 l-name, hire-date from emp where dept-id = (select dept-id
from emp where l-name = 'Zlotkey') and l-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 emp-id, l-name, salary from emp where salary >
(select avg(salary) from emp) 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 emp-id, l-name from empl where dep-id in
(select dep-id from empl where l-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 l-name, dep-id, job-id from empl where
loc-id in (select job-id from empl where department
id in (select dept-id from dept where loc-id=1700));

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

select l-name, salary from empl where manager-id =
(select emp-id from empl where l-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 dept-id, l-name, job-id from empl where dept-id
= (select dept-id from dept where dept-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 emp-id, l-name, sal. from empl where sal >
(select avg(sal) from empl) and dept-id in (select
dept-id from empl where l-name like '%-u%')

Evaluation Procedure	Marks awarded
Query(5)	5
Execution (5)	5
Viva(5)	5
Total (15)	15
Faculty Signature	R.M

Practice Questions

1. Ellen Abel is an employee who has received a \$2,000 raise. Display her first name and last name, her current salary, and her new salary. Display both salaries with a \$ and two decimal places. Label her new salary column AS New Salary.

select f-name, l-name, CONCAT('\$', format(salary, 2)) as current_salary, CONCAT('\$', FORMAT(salary + 2000, 2)) AS 'New Salary' FROM empl WHERE f-name = 'Ellen' AND l-name = 'Abel';

2. On what day of the week and date did Global Fast Foods' promotional code 110 Valentine's Special begin?

select promo-code, start-date, DAYNAME(start-date) AS day-of-week from promotions where promo-code = '110';

3. Create one query that will convert 25-Dec-2004 into each of the following (you will have to convert 25-Dec-2004 to a date and then to character data):

December 25th, 2004

DECEMBER 25TH, 2004

25th december, 2004

select to_char(to_date('25-Dec-2004', 'DD-Mon-YYYY'), 'FMMONTH DDth, YYYY') AS "Format 1", to_char(to_date('25-Dec-2004', 'DD-Mon-YYYY'), 'FMMONTH, DDth, YYYY') AS "Format 2", to_char(to_date('25-Dec-2004', 'DD-Mon-YYYY'), 'FMMONTH DDth YYYY') AS "Format 3";
from dual;

4. Create a query that will format the DJs on Demand d_packages columns, low-range and high-range package costs, in the format \$2500.00.

select to_char(low-range, '\$99,999.00') AS "Low Range Cost", to_char(high-range, '\$99,999.00') AS "High Range Cost"
from d_packages;

5. Convert JUNE192004 to a date using the fx format model.

select to_date('JUNE192004', 'FMMONTHDDYYYY') AS "Converted Date"
from dual;

6. What is the distinction between implicit and explicit datatype conversion? Give an example of each.

select * from employees WHERE employee-id = '10';
select * from employees WHERE hire-date > to_date('01-JAN-2023', 'DD-MON-YYYY');

7. Why is it important from a business perspective to have datatype conversions?

Data Integration: Business collect data from many sources. This data rarely arrives in the correct format. Conversions are necessary to extract, transform and load this data. For example a web API might send sales figures as a string which must be explicitly converted to a number before it can be stored and used in a database warehouse.