

## PROBLEM 1

Borrowed from <https://www.w3resource.com/sql-exercises/subqueries/index.php>

### DATABASE INSTANCE:

#### **Emp\_details**

EMP_IDNO	EMP_FNAME	EMP_LNAME	EMP_DEPT
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

#### **Emp\_department**

DPT_CODE	DPT_NAME	DPT_ALLOTMENT
57	IT	65000
63	Finance	15000
47	HR	240000
27	RD	55000
89	QC	75000

### QUESTION

**Write a SQL query to find the *names of departments* where *more than two employees* are working.**

## SOLUTIONS

Also see <https://www.w3resource.com/sql-exercises/subqueries/sql-subqueries-inventory-exercise-38.php>

Here is the output when running the query on the given instance:

```
dpt_name
-----
IT
HR
Finance
```

(Shana's soln)

```
SELECT d.dpt_name
FROM Emp_details e, Emp_department d
WHERE e.emp_dept = d.dpt_code
GROUP BY d.dpt_name
HAVING COUNT(*) > 2;
```

(Soln from w3resource.com)

```
SELECT dpt_name FROM emp_department
WHERE dpt_code IN
(
    SELECT emp_dept
    FROM emp_details
    GROUP BY emp_dept
    HAVING COUNT(*) >2
);
```

## PROBLEM 2

Borrowed from <https://www.w3resource.com/sql-exercises/subqueries/index.php>

### DATABASE INSTANCE:

#### Emp\_details

EMP_IDNO	EMP_FNAME	EMP_LNAME	EMP_DEPT
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

#### Emp\_department

DPT_CODE	DPT_NAME	DPT_ALLOTMENT
57	IT	65000
63	Finance	15000
47	HR	240000
27	RD	55000
89	QC	75000

### QUESTION

Write a query in SQL to find the *first name* and *last name* of employees working for departments whose allotment is *second lowest*.

## SOLUTIONS

Also see <https://www.w3resource.com/sql-exercises/subqueries/sql-subqueries-inventory-exercise-39.php>

Here is the output when running the query on the given instance:

emp_fname	emp_lname
-----	-----
Alan	Snappy
George	Mardy

Here is some SQL. This initial solution heavily uses WHERE subqueries to filter out the allocations that are not the second lowest. Pro: may be easier to write. Con: cannot draw RA directly from this solution.

```
SELECT e.emp_fname, e.emp_lname
FROM emp_details e, emp_department d
WHERE e.emp_dept = d.dpt_code
AND d.dpt_allotment = (
    SELECT MIN(d2.dpt_allotment)
    FROM emp_department d2
    WHERE d2.dpt_allotment > (
        SELECT MIN(d3.dpt_allotment)
        FROM emp_department d3));
```

Another SQL solution:

```
SELECT e.emp_fname, e.emp_lname
FROM emp_details e, emp_department d,
    (SELECT MIN(x.dpt_allotment) AS minallot2
     FROM (SELECT dpt_allotment
           FROM emp_department
           EXCEPT
           SELECT MIN(dpt_allotment) AS dpt_allotment
           FROM emp_department) x
    ) m
WHERE e.emp_dept = d.dpt_code
AND d.dpt_allotment = m.minallot2
```