SQL part 6.2. Advanced subqueries.

1. Find departments without employees. Use correlated subquery.

```
 dept_id |      dept_name       |     address
---------+----------------------+-----------------
      50 | OPERATIONAL RESEARCH | PLAINFIELD ROAD
```

2. Find employees who earn more than average salary for their jobs.

```
 surname |    job    | salary
---------+-----------+---------
 Lewis   | ASSISTANT | 1971.00
 White   | LECTURER  | 2845.50
 Wilson  | PROFESSOR | 3960.00
 Young   | ASSISTANT | 1889.00
```

3. Add to result of previous query an average salary for each job (you can use subquery in a SELECT clause or a subquery in a FROM clause).

```
 surname |    job    | salary  | avg_sal_for_job
---------+-----------+---------+-----------------
 Lewis   | ASSISTANT | 1971.00 |         1887.43
 White   | LECTURER  | 2845.50 |         2727.85
 Wilson  | PROFESSOR | 3960.00 |         3402.50
 Young   | ASSISTANT | 1889.00 |         1887.43
```

4. Find employees who earn at least 60% of their bosses salaries.

```
 surname  |    job    | salary
----------+-----------+---------
 Bell     | ASSISTANT | 1850.00
 Johnson  | PROFESSOR | 3230.00
 Jones    | PROFESSOR | 3350.00
 Lewis    | ASSISTANT | 1971.00
 White    | LECTURER  | 2845.50
 Williams | PROFESSOR | 3070.00
 Wilson   | PROFESSOR | 3960.00
```

5. Find the maximal sum of departments employees' salaries (use subquery in a FROM clause).

```
  max_sum
----------
 17325.20
```

6. Add to result of a previous query a department name (use previous query as a subquery in HAVING clause of a new query). Alternative solution: use two subqueries in a FROM clause.

```
      dept_name       | sum_of_sal
----------------------+------------
 DISTRIBUTED SYSTEMS |   17325.20
```

7. For each department display department's name and surname and salary of department's best paid employee. Use ONLY subqueries in a FROM clause (join them). Skip departments without employees. Order result set by names of departments.

department	employee	max_salary
ADMINISTRATION	Smith	4730
ALGORITHMS	Jones	3350
DISTRIBUTED SYSTEMS	Wilson	3960
EXPERT SYSTEMS	Williams	3070

8. Find surnames and salaries of three best-paid employees (use correlated subquery).

surname	salary
Smith	4730.00
Wilson	3960.00
Jones	3350.00