Information System - Lab work 4

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Database

- employees (emp_no, birth_date, first_name, last_name, gender)

- departments (dept_no, dept_name)

- dept_emp (emp_no, dept_no, from_date, to_date)

- dept_manager (dept_no, emp_no, from_date, to_date)

- titles (emp_no, title, from_date, to_date)

- salaries (emp_no, salary, from_date, to_date)

SQL queries

1. What is the average salary of each employee?

```
SELECT emp_no, AVG(salary)
FROM salaries
GROUP BY emp_no;
```

2. How much was each employee paid in total?

```
SELECT emp_no, SUM(salary)
FROM salaries
GROUP BY emp_no;
```

3. Minimum, maximum and total salaries of each departments?

```
SELECT dept_no, MAX(salary), MIN(salary), SUM(salary)
FROM dept_emp JOIN salaries
ON dept_emp.emp_no = salaries.emp_no
GROUP BY dept_no;
```

4. Which departments have paid more than 20 billion dollars for their employees?

```
SELECT dept_no, SUM(salary)
FROM dept_emp JOIN salaries
ON dept_emp.emp_no = salaries.emp_no
GROUP BY dept_no
HAVING SUM(salary) > 20000000000;
```

5. Total salaries of male employees in each departments?

```
SELECT dept_no, SUM(salary)
FROM dept_emp
JOIN employees
ON dept_emp.emp_no = employees.emp_no
JOIN salaries
ON dept_emp.emp_no = salaries.emp_no
WHERE gender = "M"
GROUP BY dept_no;
```

6. Total salaries of department managers for each department, from highest to lowest?

```
SELECT dept_no, sum(salary)
FROM dept_manager JOIN salaries
ON salaries.emp_no = dept_manager.emp_no
GROUP BY dept_no
ORDER BY SUM(salary) DESC;
```

Results

The figure below presents the results after implement 11 queries (limit from 1 to 10 for some long results) above:

```
+--------+------------+        +--------+------------+        +---------+------------+------------+------------+
| emp_no | AVG(salary)|        | emp_no | SUM(salary)|        | dept_no | MAX(salary)| MIN(salary)| SUM(salary)|
+--------+------------+        +--------+------------+        +---------+------------+------------+------------+
|  10002 | 68854.5000 |        |  10002 |     413127 |        |  d001   |     145128 |      39127 | 13725425266|
|  10003 | 43030.2857 |        |  10003 |     301212 |        |  d002   |     142395 |      38812 | 11650834677|
|  10004 | 56512.2500 |        |  10004 |     904196 |        |  d003   |     141953 |      38735 |  9363811425|
|  10005 | 87275.7692 |        |  10005 |    1134585 |        |  d004   |     138273 |      38623 | 41554438942|
|  10006 | 50514.9167 |        |  10006 |     606179 |        |  d005   |     144434 |      38849 | 48179456393|
|  10007 | 70826.7143 |        |  10007 |     991574 |        |  d006   |     132103 |      38786 | 10865203635|
|  10008 | 49307.6667 |        |  10008 |     147923 |        |  d007   |     158220 |      39169 | 40030089342|
|  10009 | 78284.5556 |        |  10009 |    1409122 |        |  d008   |     130211 |      38851 | 11969730427|
|  10010 | 76723.0000 |        |  10010 |     460338 |        |  d009   |     144866 |      38836 | 13143639841|
|  10011 | 49782.0000 |        |  10011 |     348474 |        +---------+------------+------------+------------+
            Query 1                         Query 2                              Query 3

+---------+------------+        +---------+------------+        +---------+------------+
| dept_no | SUM(salary)|        | dept_no | SUM(salary)|        | dept_no | sum(salary)|
+---------+------------+        +---------+------------+        +---------+------------+
|  d004   | 41554438942|        |  d001   |  8352455367|        |  d006   |    4162118 |
|  d005   | 48179456393|        |  d002   |  6940675318|        |  d004   |    3374004 |
|  d007   | 40030089342|        |  d003   |  5619533959|        |  d009   |    3187661 |
+---------+------------+        |  d004   | 24873889749|        |  d001   |    3093009 |
            Query 4             |  d005   | 28961357095|        |  d007   |    2915118 |
                                |  d006   |  6472073211|        |  d008   |    2558661 |
                                |  d007   | 24051537190|        |  d002   |    2549372 |
                                |  d008   |  7174578852|        |  d003   |    2098298 |
                                |  d009   |  7865587983|        |  d005   |    2028376 |
                                +---------+------------+        +---------+------------+
                                            Query 5                         Query 6
```

Figure 1: Results