a) Tulosta kymmenen aakkosjärjestyksessä ensimmäisen työntekijän tiedot sukunimen mukaan lajiteltuna. *Vihje:* LIMIT rajoittaa tulostettavien tietojen määrän.

mysql> select * FROM employees ORDER BY last_name ASC LIMIT 10;

```
mysql> select * FROM employees ORDER BY last_name ASC LIMIT 10;
+--------+------------+------------+-----------+--------+------------+
| emp_no | birth_date | first_name | last_name | gender | hire_date  |
+--------+------------+------------+-----------+--------+------------+
|  11761 | 1964-07-17 | Bartek     | Aamodt    | M      | 1991-06-12 |
|  15427 | 1959-03-06 | Aluzio     | Aamodt    | M      | 1985-03-03 |
|  18182 | 1963-02-23 | Dekang     | Aamodt    | F      | 1988-05-25 |
|  16572 | 1956-11-26 | Matt       | Aamodt    | M      | 1987-06-16 |
|  12791 | 1960-06-16 | Mokhtar    | Aamodt    | M      | 1994-08-14 |
|  12516 | 1958-06-25 | Sreenivas  | Aamodt    | F      | 1990-03-06 |
|  12982 | 1952-12-08 | Sachem     | Aamodt    | F      | 1992-01-11 |
|  17400 | 1962-03-22 | Basim      | Aamodt    | F      | 1991-09-15 |
|  19898 | 1957-03-09 | Vidar      | Aamodt    | M      | 1988-08-06 |
|  17885 | 1954-02-01 | Takanari   | Aamodt    | M      | 1996-08-19 |
+--------+------------+------------+-----------+--------+------------+
10 rows in set (0.17 sec)
```

b) Sama kuten edellä, mutta sukunimen JA etunimen mukaan lajiteltuna.

mysql> select * FROM employees ORDER BY last_name ASC, first_name ASC LIMIT 10;

```
mysql> select * FROM employees ORDER BY last_name ASC, first_name ASC LIMIT 10;
+--------+------------+------------+-----------+--------+------------+
| emp_no | birth_date | first_name | last_name | gender | hire_date  |
+--------+------------+------------+-----------+--------+------------+
| 258641 | 1961-05-23 | Abdelkader | Aamodt    | M      | 1994-12-02 |
| 258005 | 1953-02-17 | Adhemar    | Aamodt    | F      | 1991-01-21 |
| 455773 | 1960-05-04 | Aemilian   | Aamodt    | M      | 1988-04-21 |
| 436560 | 1959-03-16 | Alagu      | Aamodt    | F      | 1991-10-17 |
| 266651 | 1959-05-28 | Aleksander | Aamodt    | F      | 1989-03-29 |
| 487598 | 1962-03-03 | Alexius    | Aamodt    | M      | 1994-12-30 |
| 216963 | 1960-07-16 | Alois      | Aamodt    | M      | 1995-08-24 |
|  15427 | 1959-03-06 | Aluzio     | Aamodt    | M      | 1985-03-03 |
| 100860 | 1964-06-20 | Amabile    | Aamodt    | F      | 1993-02-06 |
| 107070 | 1954-04-24 | Anestis    | Aamodt    | M      | 1990-10-30 |
+--------+------------+------------+-----------+--------+------------+
10 rows in set (0.14 sec)
```

c) Tulosta viiden viimeksi palkatun työntekijän tiedot.

mysql> select * FROM employees ORDER BY hire_date DESC LIMIT 5;

```
mysql> select * FROM employees ORDER BY hire_date DESC LIMIT 5;
+--------+------------+------------+-----------+--------+------------+
| emp_no | birth_date | first_name | last_name | gender | hire_date  |
+--------+------------+------------+-----------+--------+------------+
| 463807 | 1964-06-12 | Bikash     | Covnot    | M      | 2000-01-28 |
| 428377 | 1957-05-09 | Yucai      | Gerlach   | M      | 2000-01-23 |
| 499553 | 1954-05-06 | Hideyuki   | Delgrande | F      | 2000-01-22 |
| 222965 | 1959-08-07 | Volkmar    | Perko     | F      | 2000-01-13 |
|  47291 | 1960-09-09 | Ulf        | Flexer    | M      | 2000-01-12 |
+--------+------------+------------+-----------+--------+------------+
5 rows in set (0.13 sec)
```

d) Kenellä on suurin palkka ? Tulosta etunimi, sukunimi ja palkka.

mysql> select employees.first_name, employees.last_name, salaries.salary FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no ORDER BY salaries.salary DESC LIMIT 1;

```
mysql> select employees.first_name, employees.last_name, salaries.salary
 FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no
ORDER BY salaries.salary DESC LIMIT 1;
+------------+-----------+--------+
| first_name | last_name | salary |
+------------+-----------+--------+
| Tokuyasu   | Pesch     | 158220 |
+------------+-----------+--------+
1 row in set (1.68 sec)
```

e) Kenellä on pienin palkka ? Tulosta etunimi, sukunimi ja palkka.

mysql> select employees.first_name, employees.last_name, salaries.salary FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no ORDER BY salaries.salary ASC LIMIT 1;

```
mysql> select employees.first_name, employees.last_name, salaries.salary
 FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no
ORDER BY salaries.salary ASC LIMIT 1;
+------------+-----------+--------+
| first_name | last_name | salary |
+------------+-----------+--------+
| Olivera    | Baek      |  38623 |
+------------+-----------+--------+
1 row in set (1.96 sec)
```

f) Tulosta työntekijät (etunimi, sukunimi, palkka), jotka ansaitsevat yli 150000.

mysql> select employees.first_name, employees.last_name, MAX(salaries.salary) AS salary FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no WHERE salaries.salary >150000 GROUP BY employees.emp_no, employees.first_name, employees.last_name ORDER BY salary DESC;

```
mysql> select employees.first_name, employees.last_name, MAX(salaries.salary)
AS salary FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_
no WHERE salaries.salary >150000 GROUP BY employees.emp_no, employees.first_na
me, employees.last_name ORDER BY salary DESC;
+------------+-----------+--------+
| first_name | last_name | salary |
+------------+-----------+--------+
| Tokuyasu   | Pesch     | 158220 |
| Honesty    | Mukaidono | 156286 |
| Xiahua     | Whitcomb  | 155709 |
| Sanjai     | Luders    | 155513 |
| Tsutomu    | Alameldin | 155377 |
| Willard    | Baca      | 154459 |
| Lidong     | Meriste   | 154376 |
| Charmane   | Griswold  | 153715 |
| Weijing    | Chenoweth | 152710 |
| Weicheng   | Hatcliff  | 152687 |
| Shin       | Birdsall  | 152412 |
| Mitsuyuki  | Stanfel   | 152220 |
| Mohammed   | Moehrke   | 150740 |
| Ibibia     | Junet     | 150345 |
| Lansing    | Kambil    | 150052 |
+------------+-----------+--------+
15 rows in set (1.68 sec)
```

g) Kuinka monta työntekijää työskentelee myynnissä (Sales) ? Entä markkinoinnissa (Marketing) ?

mysql> select departments.dept_name, COUNT(*) AS count_of_employees FROM departments INNER JOIN dept_emp ON departments.dept_no = dept_emp.dept_no WHERE departments.dept_name IN ('Marketing','Sales') GROUP BY departments.dept_name;

```
mysql> select departments.dept_name, COUNT(*) AS count_of_employees FROM
departments INNER JOIN dept_emp ON departments.dept_no = dept_emp.dept_no
 WHERE departments.dept_name IN ('Marketing','Sales') GROUP BY department
s.dept_name;
+-----------+--------------------+
| dept_name | count_of_employees |
+-----------+--------------------+
| Marketing |              20211 |
| Sales     |              52245 |
+-----------+--------------------+
2 rows in set (0.02 sec)
```

h) **Tulosta kaikkien osastonjohtajien (Department Managers) etunimi, sukunimi ja osasto, jolla työskentelee.**

mysql> select employees.first_name, employees.last_name, departments.dept_name FROM employees INNER JOIN dept_manager ON employees.emp_no = dept_manager.emp_no INNER JOIN departments ON dept_manager.dept_no = departments.dept_no;

```
mysql> select employees.first_name, employees.last_name, departments.dept_name
FROM employees INNER JOIN dept_manager ON employees.emp_no = dept_manager.emp_n
o INNER JOIN departments ON dept_manager.dept_no = departments.dept_no;
+------------+--------------+--------------------+
| first_name | last_name    | dept_name          |
+------------+--------------+--------------------+
| Tonny      | Butterworth  | Customer Service   |
| Marjo      | Giarratana   | Customer Service   |
| Xiaobin    | Spinelli     | Customer Service   |
| Yuchang    | Weedman      | Customer Service   |
| DeForest   | Hagimont     | Development        |
| Leon       | DasSarma     | Development        |
| Ebru       | Alpin        | Finance            |
| Isamu      | Legleitner   | Finance            |
| Shirish    | Ossenbruggen | Human Resources    |
| Karsten    | Sigstam      | Human Resources    |
| Margareta  | Markovitch   | Marketing          |
| Vishwani   | Minakawa     | Marketing          |
| Krassimir  | Wegerle      | Production         |
| Rosine     | Cools        | Production         |
| Shem       | Kieras       | Production         |
| Oscar      | Ghazalie     | Production         |
| Peternela  | Onuegbe      | Quality Management |
| Rutger     | Hofmeyr      | Quality Management |
| Sanjoy     | Quadeer      | Quality Management |
| Dung       | Pesch        | Quality Management |
| Arie       | Staelin      | Research           |
| Hilary     | Kambil       | Research           |
| Przemyslawa | Kaelbling   | Sales              |
| Hauke      | Zhang        | Sales              |
+------------+--------------+--------------------+
24 rows in set (0.00 sec)
```

i) Mikä on myynnissä työskentelevien keskipalkka ? Entä markkinoinnissa ?

mysql> select departments.dept_name, AVG(salary) AS avg_salary FROM employees INNER JOIN dept_emp ON employees.emp_no = dept_emp.emp_no INNER JOIN departments ON dept_emp.dept_no = departments.dept_no INNER JOIN salaries ON employees.emp_no = salaries.emp_no WHERE departments.dept_name IN ('Marketing','Sales') AND salaries.to_date = '9999-01-01' GROUP BY departments.dept_name;

```
mysql> select departments.dept_name, AVG(salary) AS avg_salary FROM
employees INNER JOIN dept_emp ON employees.emp_no = dept_emp.emp_no
INNER JOIN departments ON dept_emp.dept_no = departments.dept_no INN
ER JOIN salaries ON employees.emp_no = salaries.emp_no WHERE departm
ents.dept_name IN ('Marketing','Sales') AND salaries.to_date = '9999
-01-01' GROUP BY departments.dept_name;
+-----------+------------+
| dept_name | avg_salary |
+-----------+------------+
| Marketing | 80014.6861 |
| Sales     | 88842.1590 |
+-----------+------------+
2 rows in set (1.10 sec)
```

^(nykyisten palkkojen keskiarvo myynnissä ja markkinoinnissa)

Raakile yhteyksiä suunnitellessa tehtävässä i:

employees DB --> departments --> dept_no, **dept_name**
employees DB --> dept_emp --> dept_no, emp.no
employees DB --> employees --> first_name, last_name, emp_no
employees DB --> salaries --> **salary**, to_date, from_date, emp_no