SQL Assignment

Tasks and Solutions

1. **Create a SQL statement to list all managers and their titles.**

```
MariaDB [employees]> SELECT dm.emp_no, e.first_name, e.last_name, t.title
    -> FROM dept_manager dm
    -> JOIN employees e ON dm.emp_no = e.emp_no
    -> JOIN titles t ON e.emp_no = t.emp_no;
+--------+------------+-----------+--------------------+
| emp_no | first_name | last_name | title              |
+--------+------------+-----------+--------------------+
|  10001 | Georgi     | Facello   | Senior Engineer    |
|  10002 | Bezalel    | Simmel    | Staff              |
|  10003 | Parto      | Bamford   | Senior Engineer    |
|  10008 | Saniya     | Kalloufi  | Assistant Engineer |
+--------+------------+-----------+--------------------+
4 rows in set (0.000 sec)
```

2. **Create a SQL statement to show the salary of all employees and their department name.**

```
MariaDB [employees]> SELECT de.emp_no, e.first_name, e.last_name, d.dept_name, s.salary
    -> FROM dept_emp de
    -> JOIN employees e ON de.emp_no = e.emp_no
    -> JOIN departments d ON de.dept_no = d.dept_no
    -> JOIN salaries s ON e.emp_no = s.emp_no;
+--------+------------+-----------+----------------+--------+
| emp_no | first_name | last_name | dept_name      | salary |
+--------+------------+-----------+----------------+--------+
|  10001 | Georgi     | Facello   | Development    |  60117 |
|  10001 | Georgi     | Facello   | Development    |  62102 |
|  10002 | Bezalel    | Simmel    | Sales          |  66074 |
|  10003 | Parto      | Bamford   | Production     |  66596 |
|  10004 | Chirstian  | Koblick   | Production     |  66961 |
|  10005 | Kyoichi    | Maliniak  | Human Resources |  71046 |
|  10006 | Anneke     | Preusig   | Development    |  74333 |
+--------+------------+-----------+----------------+--------+
7 rows in set (0.001 sec)
```

3. **Create a SQL statement to show the hire date and birth date who belongs to HR department**

```
MariaDB [employees]> SELECT e.emp_no, e.first_name, e.last_name, e.hire_date, e.birth_date
    -> FROM employees e
    -> JOIN dept_emp de ON e.emp_no = de.emp_no
    -> JOIN departments d ON de.dept_no = d.dept_no
    -> WHERE d.dept_name = 'Human Resources';
+--------+-----------+-----------+-----------+------------+
| emp_no | first_name | last_name | hire_date  | birth_date |
+--------+-----------+-----------+-----------+------------+
|  10005 | Kyoichi    | Maliniak  | 1989-09-12 | 1955-01-21 |
+--------+-----------+-----------+-----------+------------+
1 row in set (0.010 sec)
```

4. **Create a SQL statement to show all departments and their department's managers.**

```
MariaDB [employees]> SELECT d.dept_name, e.first_name, e.last_name
    -> FROM departments d
    -> JOIN dept_manager dm ON d.dept_no = dm.dept_no
    -> JOIN employees e ON dm.emp_no = e.emp_no;
+-----------------+------------+-----------+
| dept_name       | first_name | last_name |
+-----------------+------------+-----------+
| Marketing       | Georgi     | Facello   |
| Finance         | Bezalel    | Simmel    |
| Production      | Parto      | Bamford   |
| Finance         | Saniya     | Kalloufi  |
| Human Resources | Mary       | Sluis     |
| Human Resources | Patricio   | Bridgland |
| Marketing       | Eberhardt  | Terkki    |
| Production      | Berni      | Genin     |
+-----------------+------------+-----------+
8 rows in set (0.000 sec)
```

5. **Create a SQL statement to show a list of HR's employees who were hired after 1986**

```
MariaDB [employees]> SELECT e.emp_no, e.first_name, e.last_name, e.hire_date
    -> FROM employees e
    -> JOIN dept_emp de ON e.emp_no = de.emp_no
    -> JOIN departments d ON de.dept_no = d.dept_no
    -> WHERE d.dept_name = 'Human Resources' AND e.hire_date > '1986-12-31';
+--------+------------+-----------+------------+
| emp_no | first_name | last_name | hire_date  |
+--------+------------+-----------+------------+
|  10005 | Kyoichi    | Maliniak  | 1989-09-12 |
+--------+------------+-----------+------------+
1 row in set (0.009 sec)
```

6. **Create a SQL statement to increase any employee's salary up to 2%. Assume the employee has just phoned in with his/her last name.**

Changing the salary of Simmel

```
MariaDB [employees]> UPDATE salaries s
    -> JOIN employees e ON s.emp_no = e.emp_no
    -> SET s.salary = s.salary * 1.02
    -> WHERE e.last_name = 'Simmel';
Query OK, 1 row affected (0.011 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Displaying new salary

```
MariaDB [employees]> SELECT e.emp_no, e.first_name, e.last_name, s.salary
    -> FROM employees e
    -> JOIN salaries s ON e.emp_no = s.emp_no
    -> WHERE e.last_name = 'Simmel';
+--------+------------+-----------+--------+
| emp_no | first_name | last_name | salary |
+--------+------------+-----------+--------+
|  10002 | Bezalel    | Simmel    |  67395 |
+--------+------------+-----------+--------+
1 row in set (0.001 sec)
```

7. **Create a SQL statement to delete employee's record who belongs to marketing department and name start with A**

Deleting the records

```
MariaDB [employees]> DELETE e.*
    -> FROM employees e
    -> JOIN dept_emp de ON e.emp_no = de.emp_no
    -> JOIN departments d ON de.dept_no = d.dept_no
    -> WHERE d.dept_name = 'Marketing' AND e.first_name LIKE 'A%';
Query OK, 0 rows affected (0.012 sec)
```

0 rows affected means that no data was changed due to there being no employee's record who belongs to the marketing department and the name starting with A.

8. **Create a database view to list the full names of all departments' managers and their salaries.**

View creation:

```
MariaDB [employees]> CREATE VIEW managers_view_table AS
    -> SELECT e.first_name, e.last_name, s.salary, d.dept_name
    -> FROM dept_manager dm
    -> JOIN employees e ON dm.emp_no = e.emp_no
    -> JOIN (
    ->     SELECT emp_no, salary
    ->     FROM salaries
    ->     WHERE (emp_no, from_date) IN (
    ->         SELECT emp_no, MAX(from_date)
    ->         FROM salaries
    ->         GROUP BY emp_no
    ->     )
    -> ) s ON e.emp_no = s.emp_no
    -> JOIN departments d ON dm.dept_no = d.dept_no;
Query OK, 0 rows affected (0.005 sec)
```

Displaying the view:

```
MariaDB [employees]> SELECT * FROM managers_view_table;
+------------+-----------+--------+------------+
| first_name | last_name | salary | dept_name  |
+------------+-----------+--------+------------+
| Georgi     | Facello   |  62102 | Marketing  |
| Bezalel    | Simmel    |  67395 | Finance    |
| Parto      | Bamford   |  66596 | Production |
| Saniya     | Kalloufi  |  75994 | Finance    |
+------------+-----------+--------+------------+
4 rows in set (0.001 sec)
```

9. **Create a database view to list all departments and their department's managers, who were hired between 1980 and 1990.**

```
MariaDB [employees]> CREATE VIEW departments_managers_hired_1980_1990 AS
    -> SELECT d.dept_name, e.first_name, e.last_name, e.hire_date
    -> FROM departments d
    -> JOIN dept_manager dm ON d.dept_no = dm.dept_no
    -> JOIN employees e ON dm.emp_no = e.emp_no
    -> WHERE e.hire_date BETWEEN '1980-01-01' AND '1990-12-31';
Query OK, 0 rows affected (0.013 sec)

MariaDB [employees]> SELECT * FROM departments_managers_hired_1980_1990;
+-----------------+------------+-----------+------------+
| dept_name       | first_name | last_name | hire_date  |
+-----------------+------------+-----------+------------+
| Marketing       | Georgi     | Facello   | 1986-06-26 |
| Finance         | Bezalel    | Simmel    | 1985-11-21 |
| Production      | Parto      | Bamford   | 1986-08-28 |
| Human Resources | Mary       | Sluis     | 1990-01-22 |
| Marketing       | Eberhardt  | Terkki    | 1985-10-20 |
| Production      | Berni      | Genin     | 1987-03-11 |
+-----------------+------------+-----------+------------+
6 rows in set (0.001 sec)
```

10. **Create a SQL statement to increase salaries of all department's managers up to 10% who are working since 1990.**

```
MariaDB [employees]> UPDATE salaries s
    -> JOIN dept_manager dm ON s.emp_no = dm.emp_no
    -> SET s.salary = s.salary * 1.1
    -> WHERE s.from_date >= '1990-01-01' AND dm.to_date = '9999-01-01';
Query OK, 1 row affected (0.010 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [employees]> SELECT s.emp_no, e.first_name, e.last_name, s.salary, s.from_date, s.to_date
    -> FROM salaries s
    -> JOIN dept_manager dm ON s.emp_no = dm.emp_no
    -> JOIN employees e ON dm.emp_no = e.emp_no
    -> WHERE s.from_date >= '1990-01-01' AND dm.to_date = '9999-01-01';
+--------+------------+-----------+--------+------------+------------+
| emp_no | first_name | last_name | salary | from_date  | to_date    |
+--------+------------+-----------+--------+------------+------------+
|  10008 | Saniya     | Kalloufi  |  83593 | 1994-06-24 | 1995-06-24 |
+--------+------------+-----------+--------+------------+------------+
1 row in set (0.000 sec)
```

Appendix. Initial Data

```
MariaDB [employees]>  SELECT * FROM dept_manager;
+--------+---------+------------+------------+
| emp_no | dept_no | from_date  | to_date    |
+--------+---------+------------+------------+
|  10001 | d001    | 1991-10-01 | 9999-01-01 |
|  10002 | d002    | 1985-01-01 | 1989-12-17 |
|  10003 | d004    | 1988-09-09 | 1992-08-02 |
|  10008 | d002    | 1989-12-17 | 9999-01-01 |
|  10011 | d003    | 1992-03-21 | 9999-01-01 |
|  10012 | d003    | 1985-01-01 | 1992-03-21 |
|  10013 | d001    | 1985-01-01 | 1991-10-01 |
|  10014 | d004    | 1985-01-01 | 1988-09-09 |
+--------+---------+------------+------------+
8 rows in set (0.000 sec)
```

```
MariaDB [employees]> SELECT * FROM employees;
+--------+------------+------------+-----------+--------+------------+
| emp_no | birth_date | first_name | last_name | gender | hire_date  |
+--------+------------+------------+-----------+--------+------------+
|  10001 | 1953-09-02 | Georgi     | Facello   | M      | 1986-06-26 |
|  10002 | 1964-06-02 | Bezalel    | Simmel    | F      | 1985-11-21 |
|  10003 | 1959-12-03 | Parto      | Bamford   | M      | 1986-08-28 |
|  10004 | 1954-05-01 | Chirstian  | Koblick   | M      | 1986-12-01 |
|  10005 | 1955-01-21 | Kyoichi    | Maliniak  | M      | 1989-09-12 |
|  10006 | 1953-04-20 | Anneke     | Preusig   | F      | 1989-06-02 |
|  10007 | 1957-05-23 | Tzvetan    | Zielinski | F      | 1989-02-10 |
|  10008 | 1958-02-19 | Saniya     | Kalloufi  | M      | 1994-09-15 |
|  10009 | 1952-04-19 | Sumant     | Peac      | F      | 1985-02-18 |
|  10010 | 1963-06-01 | Duangkaew  | Piveteau  | F      | 1989-08-24 |
|  10011 | 1953-11-07 | Mary       | Sluis     | F      | 1990-01-22 |
|  10012 | 1960-10-04 | Patricio   | Bridgland | M      | 1992-12-18 |
|  10013 | 1963-06-07 | Eberhardt  | Terkki    | M      | 1985-10-20 |
|  10014 | 1956-02-12 | Berni      | Genin     | M      | 1987-03-11 |
+--------+------------+------------+-----------+--------+------------+
14 rows in set (0.000 sec)
```

```
MariaDB [employees]> SELECT * FROM titles;
+--------+--------------------+------------+------------+
| emp_no | title              | from_date  | to_date    |
+--------+--------------------+------------+------------+
|  10001 | Senior Engineer    | 1986-06-26 | 9999-01-01 |
|  10002 | Staff              | 1996-08-03 | 9999-01-01 |
|  10003 | Senior Engineer    | 1995-12-03 | 9999-01-01 |
|  10004 | Engineer           | 1986-12-01 | 1995-12-01 |
|  10004 | Senior Engineer    | 1995-12-01 | 9999-01-01 |
|  10005 | Senior Staff       | 1996-09-12 | 9999-01-01 |
|  10005 | Staff              | 1989-09-12 | 1996-09-12 |
|  10006 | Senior Engineer    | 1990-08-05 | 9999-01-01 |
|  10007 | Senior Staff       | 1996-02-11 | 9999-01-01 |
|  10007 | Staff              | 1989-02-10 | 1996-02-11 |
|  10008 | Assistant Engineer | 1998-03-11 | 2000-07-31 |
+--------+--------------------+------------+------------+
11 rows in set (0.009 sec)
```

```
MariaDB [employees]> SELECT * FROM salaries;
+--------+--------+------------+------------+
| emp_no | salary | from_date  | to_date    |
+--------+--------+------------+------------+
|  10001 |  60117 | 1986-06-26 | 1987-06-26 |
|  10001 |  62102 | 1987-06-26 | 1988-06-25 |
|  10002 |  66074 | 1988-06-25 | 1989-06-25 |
|  10003 |  66596 | 1989-06-25 | 1990-06-25 |
|  10004 |  66961 | 1990-06-25 | 1991-06-25 |
|  10005 |  71046 | 1991-06-25 | 1992-06-24 |
|  10006 |  74333 | 1992-06-24 | 1993-06-24 |
|  10007 |  75286 | 1993-06-24 | 1994-06-24 |
|  10008 |  75994 | 1994-06-24 | 1995-06-24 |
+--------+--------+------------+------------+
9 rows in set (0.000 sec)
```

```
MariaDB [employees]> SELECT * FROM departments;
+---------+--------------------+
| dept_no | dept_name          |
+---------+--------------------+
| d009    | Customer Service   |
| d005    | Development        |
| d002    | Finance            |
| d003    | Human Resources    |
| d001    | Marketing          |
| d004    | Production         |
| d006    | Quality Management |
| d008    | Research           |
| d007    | Sales              |
+---------+--------------------+
9 rows in set (0.000 sec)
```

```
MariaDB [employees]> SELECT * FROM dept_emp;
+--------+---------+------------+------------+
| emp_no | dept_no | from_date  | to_date    |
+--------+---------+------------+------------+
|  10001 | d005    | 1986-06-26 | 9999-01-01 |
|  10002 | d007    | 1996-08-03 | 9999-01-01 |
|  10003 | d004    | 1995-12-03 | 9999-01-01 |
|  10004 | d004    | 1986-12-01 | 9999-01-01 |
|  10005 | d003    | 1989-09-12 | 9999-01-01 |
|  10006 | d005    | 1990-08-05 | 9999-01-01 |
|  10014 | d005    | 1993-12-29 | 9999-01-01 |
+--------+---------+------------+------------+
7 rows in set (0.000 sec)
```