

SQL DATA ANALYSIS PROJECT - EMPLOYEES

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1. List of employees by department

Q.1 Write a query to list all employees along with their respective department names. Include employee number, first name, last name, department number, and department name.

QUERY:

```
SELECT e.emp_no, e.first_name, e.last_name, d.dept_no, d.dept_name FROM employees as e
JOIN dept_emp as de
ON e.emp_no = de.emp_no
JOIN departments as d
ON de.dept_no = d.dept_no;
```

OUTPUT:

	emp_no	first_name	last_name	dept_no	dept_name
►	10011	Mary	Sluis	d009	Customer Service
	10038	Huan	Lortz	d009	Customer Service
	10049	Basil	Tramer	d009	Customer Service
	10060	Breannnda	Billingsley	d009	Customer Service
	10088	Jungsoon	Syrzycki	d009	Customer Service
	10098	Sreekrishna	Servieres	d009	Customer Service
	10112	Yuichiro	Swick	d009	Customer Service

2. Salary of an Employee

Q. 2 Write a query to retrieve maximum and all the salary records of an employee-by-employee number. Include employee number, salary, from date.

QUERY:

```
SELECT * FROM salaries  
WHERE emp_no = 290196;
```

```
SELECT * FROM salaries  
WHERE emp_no = 290196 ORDER BY salary DESC  
LIMIT 1;
```

OUTPUT:

	emp_no	salary	from_date	to_date
►	290196	82708	1993-12-08	1994-12-08
	290196	86886	1994-12-08	1995-12-08
	290196	86393	1995-12-08	1996-12-07
	290196	89977	1996-12-07	1997-12-07
	290196	90946	1997-12-07	1998-12-07
	290196	91239	1998-12-07	1999-12-07
	290196	92023	1999-12-07	2000-12-06

	emp_no	salary	from_date	to_date
►	290196	95714	2001-12-06	9999-01-01
*	NULL	NULL	NULL	NULL

3. Employees with specific titles.

Q.3 Write a query to find all the employees who have held a specific title (e.g: 'Engineer'). Include employee number, first name, last name and title.

QUERY:

```
SELECT e.emp_no, e.first_name, e.last_name, t.title from employees as e
JOIN titles as t
ON e.emp_no = t.emp_no
WHERE t.title = 'Engineer';
```

OUTPUT:

	emp_no	first_name	last_name	title
►	10004	Chirstian	Koblick	Engineer
	10009	Sumant	Peac	Engineer
	10010	Duangkaew	Piveteau	Engineer
	10012	Patricio	Bridgland	Engineer
	10014	Berni	Genin	Engineer
	10018	Kazuhide	Peha	Engineer
	10020	Mayuko	Warwick	Engineer

4. Departments with their managers.

Q.4 Write a query to list all the departments with their current managers. Include department number, department name, employee number, first name and last name

QUERY:

```
SELECT d.dept_no, d.dept_name, e.emp_no, e.first_name, e.last_name FROM departments as d
JOIN dept_manager AS dm
ON d.dept_no = dm.dept_no
JOIN employees as e
ON e.emp_no = dm.emp_no;
```

OUTPUT:

	dept_no	dept_name	emp_no	first_name	last_name
►	d009	Customer Service	111692	Tonny	Butterworth
	d009	Customer Service	111784	Marjo	Giarratana
	d009	Customer Service	111877	Xiaobin	Spinelli
	d009	Customer Service	111939	Yuchang	Weedman
	d005	Development	110511	DeForest	Hagimont

5. Employee count by department.

Q.5 Write a query to count the number of employees in each department. Include department number, department name, and employee count.

QUERY:

```
SELECT
    d.dept_no,
    d.dept_name,
    COUNT(de.emp_no) AS emp_count
FROM
    departments as d
JOIN
    dept_emp as de ON d.dept_no = de.dept_no
GROUP BY
    d.dept_no, d.dept_name;
```

OUTPUT:

	dept_no	dept_name	emp_count
▶	d009	Customer Service	23580
	d005	Development	85707
	d002	Finance	17346
	d003	Human Resources	17786
	d001	Marketing	20211

6. Employee by birth year.

Q.6 Write a query to find all the employees born in a specific year (e.g, 1953). Include employee number, first name, last name, birth date.

QUERY:

```
SELECT emp_no, first_name, last_name, birth_date FROM employees  
WHERE year(birth_date) = 1953;
```

OUTPUT:

	emp_no	first_name	last_name	birth_date
►	10001	Georgi	Facello	1953-09-02
	10006	Anneke	Preusig	1953-04-20
	10011	Mary	Sluis	1953-11-07
	10019	Lillian	Haddadi	1953-01-23
	10023	Bojan	Montemayor	1953-09-29

7. Employees hired in the last 34 years.

Q.7 Write a query to find all the employees hired in the last 34 years. Include employee number, first name, last name, hire date.

QUERY:

```
SELECT emp_no, first_name, last_name, hire_date FROM employees
WHERE hire_date >= date_sub(curdate(), INTERVAL 34 YEAR)
ORDER BY hire_date;
```

OUTPUT:

	emp_no	first_name	last_name	hire_date
►	493283	Mansur	Kulisch	1991-01-26
	495645	Naftali	Birta	1991-01-26
	477216	Kristian	Falck	1991-01-26
	479514	Cedric	Plumb	1991-01-26
	482206	Christophe	Muntz	1991-01-26

8. Average salary by department.

Q.8 Write a query to calculate the average salary for each department. Include department number, department name, average salary.

QUERY:

```
SELECT d.dept_no, d.dept_name, AVG(s.salary) as avg_salary FROM departments as d
JOIN dept_emp as de
ON de.dept_no = d.dept_no
JOIN salaries as s
ON de.emp_no = s.emp_no
GROUP BY d.dept_no, d.dept_name;
```

OUTPUT:

	dept_no	dept_name	avg_salary
►	d001	Marketing	71913.2000
	d002	Finance	70489.3649
	d003	Human Resources	55574.8794
	d004	Production	59605.4825
	d005	Development	59478.9012

9. Gender distribution in each department.

Q.9 Write a query to find the gender distribution (number of males and females) in each department. Include department number, department name, count of males and count of females.

QUERY:

```
SELECT d.dept_no, d.dept_name,  
SUM(CASE WHEN e.gender = 'M' THEN 1 ELSE 0 END) AS male_count,  
SUM(CASE WHEN e.gender = 'F' THEN 1 ELSE 0 END) AS female_count  
FROM departments AS d  
JOIN dept_emp AS de ON de.dept_no = d.dept_no  
JOIN employees AS e ON de.emp_no = e.emp_no  
GROUP BY d.dept_no, d.dept_name;
```

OUTPUT:

	dept_no	dept_name	male_count	female_count
►	d009	Customer Service	14132	9448
	d005	Development	51449	34258
	d002	Finance	10331	7015
	d003	Human Resources	10711	7075
	d001	Marketing	12174	8037

10. Longest serving employees.

Q.10 Write a query to find the employees who have served the longest in the company. Include employee number, first name, last name, number of years served.

QUERY:

```
SELECT emp_no, first_name, last_name,  
timestampdiff(YEAR, hire_date, CURDATE()) as years_served  
FROM employees  
ORDER BY years_served DESC;
```

OUTPUT:

	emp_no	first_name	last_name	years_served
►	110022	Margareta	Markovitch	40
	110085	Ebru	Alpin	40
	110114	Isamu	Legleitner	40
	110183	Shirish	Ossenbruggen	40
	110303	Krassimir	Wegerle	40