SQL DATA ANALYST PROJECT

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1. List Of Employees

Question: 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 :

```sql
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	Breannda	Billingsley	d009	Customer Service
10088	Jungsoon	Syrzycki	d009	Customer Service

2. Current and Past Salaries of an Employee

Question: Write a query to retrieve all the salary records of a given employee (by employee number). Include employee number, salary, from_date, and to_date and find the highest salary.

Query :

```sql
select * from salaries
where emp_no = '42645' order by salary desc
limit 1;
```

Output

emp_no	salary	from_date	to_date
42645	48976	2001-12-22	9999-01-01
NULL	NULL	NULL	NULL

3. Employees with Specific Titles

Question: Write a query to find all 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
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

4. Departments with Their Managers

Question: Write a query to list all departments along with their current managers. Include department number, department name, manager's employee number, first name, and last name.

Query

```sql
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
d005	Development	110567	Leon	DasSarma

5. Employee Count by Department

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

Query

```sql
select d.dept_no, 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 dept_name,dept_no;
```

Output

dept_no	dept_name	emp_count
d009	Customer Service	23580
d005	Development	85707
d002	Finance	17346
d003	Human Resources	17786
d001	Marketing	20211
d004	Production	73485

6. Employees' Birthdates in a Given Year

Question: Write a query to find all employees born in a specific year (e.g., 1954). Include employee number, first name, last name, and birth date.

Query

```sql
select emp_no, first_name, last_name, birth_date from  employees
where year(birth_date) = '1954';
```

Output

emp_no	first_name	last_name	birth_date
10004	Chirstian	Koblick	1954-05-01
10018	Kazuhide	Peha	1954-06-19
10053	Sanjiv	Zschoche	1954-09-13
10057	Ebbe	Callaway	1954-05-30
10058	Berhard	McFarlin	1954-10-01
10072	Shir	McClurg	1954-02-23

7. Employees Hired in the Last 45 Years

Question: Write a query to find all employees hired in the last 45 years.
Include employee number, first name, last name, and hire date

Query

```sql
select emp_no, first_name, last_name, hire_date from employees
where hire_date >= date_sub(curdate(),INTERVAL 45 year) ;
```

Output

emp_no	first_name	last_name	hire_date
10001	Georgi	Facello	1986-06-26
10002	Bezalel	Simmel	1985-11-21
10003	Parto	Bamford	1986-08-28
10004	Chirstian	Koblick	1986-12-01
10005	Kyoichi	Maliniak	1989-09-12
10006	Anneke	Preusig	1989-06-02

8. Average Salary by Department

Question: Write a query to calculate the average salary for each department. Include department number, department name, and average salary.

Query

```sql
select d.dept_no, d.dept_name, avg(s.salary) as avg_salary from departments as d
join dept_emp as de
on d.dept_no = de.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
d006	Quality Management	57251.2710

9. Gender Distribution in Each Department

Question: 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

```sql
select d.dept_no, d.dept_name,
sum(case when e.gender='M' then 1 or 0 end) as male_count,
sum(case when e.gender='F' then 1 or 0 end) as female_count from departments as d
join dept_emp as de on d.dept_no = de.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
d004	Production	43036	28540

10. Longest Serving Employees

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

Query

```sql
select emp_no, first_name, last_name,
timestampdiff(year,hire_date,current_date()) as served_years
from employees
order by served_years desc
limit 10;
```

Output

emp_no	first_name	last_name	served_years
10126	Kayoko	Valtorta	39
10198	Pranav	Furedi	39
10137	Maren	Hutton	39
10098	Sreekrishna	Servieres	39
10195	Annemarie	Redmiles	39
10116	Dayanand	Czap	39