

# SQL Homework - Employee Database: A Mystery in Two Parts

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postgres://readonly:12345@35.225.151.235:5432/postgres

# Create Table

- create table departments (
  - dept\_no VARCHAR(20) not null primary key,
  - dept\_name VARCHAR(20) null,
  - last\_updated TIMESTAMP null default CURRENT\_TIMESTAMP
- );
- create table employees (
  - emp\_no INT not null primary key,
  - emp\_title\_id VARCHAR(20) null references titles(title\_id),
  - birth\_date DATE null,
  - first\_name VARCHAR(100) null,
  - last\_name VARCHAR(100) null,
  - sex VARCHAR(1) null,
  - hire\_date DATE null,
  - last\_updated TIMESTAMP null default CURRENT\_TIMESTAMP
- );

- create table dep\_emp (
  - dept\_emp\_id not null primary key,
  - emp\_no INT null references employees(emp\_no),
  - dept\_no VARCHAR(20) null references departments(dept\_no),
  - last\_updated TIMESTAMP null default CURRENT\_TIMESTAMP
- );
- create table dep\_manager (
  - dept\_manager\_id not null primary key,
  - dept\_no VARCHAR(20) null references departments(dept\_no),
  - emp\_no INT null references employees(emp\_no),
  - last\_updated TIMESTAMP null default CURRENT\_TIMESTAMP
- );

- create table salaries (
  - salary\_id serial not null primary key,
  - emp\_no INT null references employees(emp\_no),
  - salary INT null,
  - last\_updated TIMESTAMP null default CURRENT\_TIMESTAMP
- );

- create table titles (
  - title\_id VARCHAR(20) not null primary key,
  - title VARCHAR(50) null,
  - last\_updated TIMESTAMP null default CURRENT\_TIMESTAMP
- );

# Querys

- --- List the following details of each employee: employee number, last name, first name, sex, and salary.
- SELECT
- e.emp\_no,
- e.last\_name,
- e.first\_name,
- e.sex,
- s.salary
- FROM
- employees e
- JOIN
- salaries s ON s.emp\_no = e.emp\_no;

	123 emp_no	ABC last_name	ABC first_name	ABC sex	123 salary
1	10,005	Maliniak	Kyoichi	M	78,228
2	10,010	Piveteau	Duangkaew	F	72,488
3	10,011	Sluis	Mary	F	42,365
4	10,013	Terkki	Eberhardt	M	40,000
5	10,017	Bouloucos	Cristinel	F	71,380
6	10,035	Chappelet	Alain	M	41,538
7	10,037	Makrucki	Pradeep	M	40,000
8	10,045	Shanbhogue	Moss	M	41,971
9	10,051	Caine	Hidefumi	M	48,817

- --- List first name, last name, and hire date for employees who were hired in 1986.
- **SELECT**
- first\_name,
- last\_name,
- hire\_date
- **FROM**
- employees
- **WHERE**
- hire\_date **BETWEEN** '1986-01-01' **AND** '1987-01-01';

	ABC first_name 🔽	ABC last_name 🔽	🕒 hire_date 🔽
1	Eran	Cusworth	1986-11-14
2	Bojan	Zallocco	1986-10-14
3	Nevio	Demizu	1986-05-18
4	Ziva	Vecchi	1986-07-03
5	Mohit	Speek	1986-01-14
6	Qunsheng	Speer	1986-02-13
7	Dines	Encarnacion	1986-08-02
8	Harngdar	Swick	1986-05-28
9	Freyja	Uhrig	1986-12-20

- --- List the manager of each department with the following information: department number, department name, the manager's employee number, last name, first name.
- **SELECT**
- d.dept\_no,
- d.dept\_name,
- dm.emp\_no,
- e.last\_name,
- e.first\_name
- **FROM**
- departments d
- **JOIN** dept\_manager dm **ON** dm.dept\_no = d.dept\_no
- **JOIN** employees e **ON** dm.emp\_no = e.emp\_no;

	ABC dept_no 🔽	ABC dept_name 🔽	123 emp_no 🔽	ABC last_name 🔽	ABC first_name 🔽
1	d001	Marketing	110,022 ↗	Markovitch	Margareta
2	d001	Marketing	110,039 ↗	Minakawa	Vishwani
3	d002	Finance	110,085 ↗	Alpin	Ebru
4	d002	Finance	110,114 ↗	Legleitner	Isamu
5	d003	Human Resources	110,183 ↗	Ossenbruggen	Shirish
6	d003	Human Resources	110,228 ↗	Sigstam	Karsten
7	d004	Production	110,303 ↗	Wegerle	Krassimir
8	d004	Production	110,344 ↗	Cools	Rosine
9	d004	Production	110,386 ↗	Kieras	Shem

- List the department of each employee with the following information: employee number, last name, first name, and department name.

- SELECT**

- dm.emp\_no,
- e.last\_name,
- e.first\_name,
- d.dept\_name

- FROM**

- dept\_emp dm

- JOIN** employees e **ON** e.emp\_no = dm.emp\_no

- JOIN** departments d **ON** d.dept\_no = dm.dept\_no;

- List the department of each employee with the following information: employee number, last name, first name, and department name.

- SELECT**

- dm.emp\_no,
- e.last\_name,
- e.first\_name,
- d.dept\_name

- FROM**

- dept\_emp dm

- JOIN** employees e **ON** e.emp\_no = dm.emp\_no

- JOIN** departments d **ON** d.dept\_no = dm.dept\_no;

	123 emp_no ↕	ABC last_name ↕	ABC first_name ↕	ABC dept_name ↕
1	10,005 ↗	Maliniak	Kyoichi	Human Resources
2	10,010 ↗	Piveteau	Duangkaew	Production
3	10,010 ↗	Piveteau	Duangkaew	Quality Management
4	10,011 ↗	Sluis	Mary	Customer Service
5	10,013 ↗	Terkki	Eberhardt	Human Resources
6	10,017 ↗	Bouloucos	Cristinel	Marketing
7	10,035 ↗	Chappelet	Alain	Production
8	10,037 ↗	Makrucki	Pradeep	Development
9	10,045 ↗	Shanbhogue	Moss	Production

	ABC first_name ↕	ABC last_name ↕	ABC sex ↕
1	Hercules	Baer	M
2	Hercules	Biron	F
3	Hercules	Birge	F
4	Hercules	Berstel	F
5	Hercules	Bernatsky	M
6	Hercules	Bail	F
7	Hercules	Bodoff	M
8	Hercules	Benantar	F
9	Hercules	Basagni	M

- --- List all employees in the Sales department, including their employee number, last name, first name, and department name.
- **SELECT**
- dm.emp\_no,
- e.last\_name,
- e.first\_name,
- d.dept\_name
- **FROM**
- dept\_emp dm
- **JOIN** employees e **ON** e.emp\_no = dm.emp\_no
- **JOIN** departments d **ON** d.dept\_no = dm.dept\_no
- **WHERE**
- d.dept\_name = 'Sales';

	123 emp_no 🔍	ABC last_name 🔍	ABC first_name 🔍	ABC dept_name 🔍
1	10,002	Simmel	Bezalel	Sales
2	10,016	Cappelletti	Kazuhito	Sales
3	10,034	Swan	Bader	Sales
4	10,041	Lenart	Uri	Sales
5	10,050	Dredge	Yinghua	Sales
6	10,053	Zschoche	Sanjiv	Sales
7	10,060	Billingsley	Breannnda	Sales
8	10,061	Herber	Tse	Sales
9	10,068	Brattka	Charlene	Sales

- --- List all employees in the Sales and Development departments, including their employee number, last name, first name, and department name.
- **SELECT**
- dm.emp\_no,
- e.last\_name,
- e.first\_name,
- d.dept\_name
- **FROM**
- dept\_emp dm
- **JOIN** employees e **ON** e.emp\_no = dm.emp\_no
- **JOIN** departments d **ON** d.dept\_no = dm.dept\_no
- **WHERE**
- d.dept\_name = 'Sales'
- **OR**
- d.dept\_name = 'Development';

	123 emp_no 🔍	ABC last_name 🔍	ABC first_name 🔍	ABC dept_name 🔍
1	10,001	Facello	Georgi	Development
2	10,002	Simmel	Bezalel	Sales
3	10,006	Preusig	Anneke	Development
4	10,008	Kalloufi	Saniya	Development
5	10,012	Bridgland	Patricio	Development
6	10,014	Genin	Berni	Development
7	10,016	Cappelletti	Kazuhito	Sales
8	10,018	Peha	Kazuhide	Development
9	10,021	Erde	Ramzi	Development

- In descending order, list the frequency count of employee last names, i.e., how many employees share each last name.
- SELECT**
- last\_name,
- COUNT(last\_name) AS "Frequency"**
- FROM**
- employees
- GROUP BY**
- last\_name
- ORDER BY**
- COUNT(last\_name) DESC;**

	ABC last_name T↑↓	123 Frequency T↑↓
1	Baba	226
2	Gelosh	223
3	Coorg	223
4	Farris	222
5	Sudbeck	222
6	Adachi	221
7	Osgood	220
8	Neiman	218
9	Masada	218

Create a histogram to visualize the most common salary ranges for employees.



Create a bar chart of average salary by title.

