9 - SQL Homework - Steve Reiss

# —ERD CHART—

<https://app.quickdatabasediagrams.com/#/d/X9uBNG>

employees

emp\_no INTEGER PK emp\_title\_id VARCHAR birth\_date DATE first\_name VARCHAR last\_name VARCHAR sex VARCHAR hire\_date DATE

departments dept\_no PK VARCHAR dept\_name VARCHAR

dept\_emp -

emp\_no INTEGER FK >- employees.emp\_no dept\_no VARCHAR FK >- departments.dept\_no

dept\_manager

-

dept\_no VARCHAR

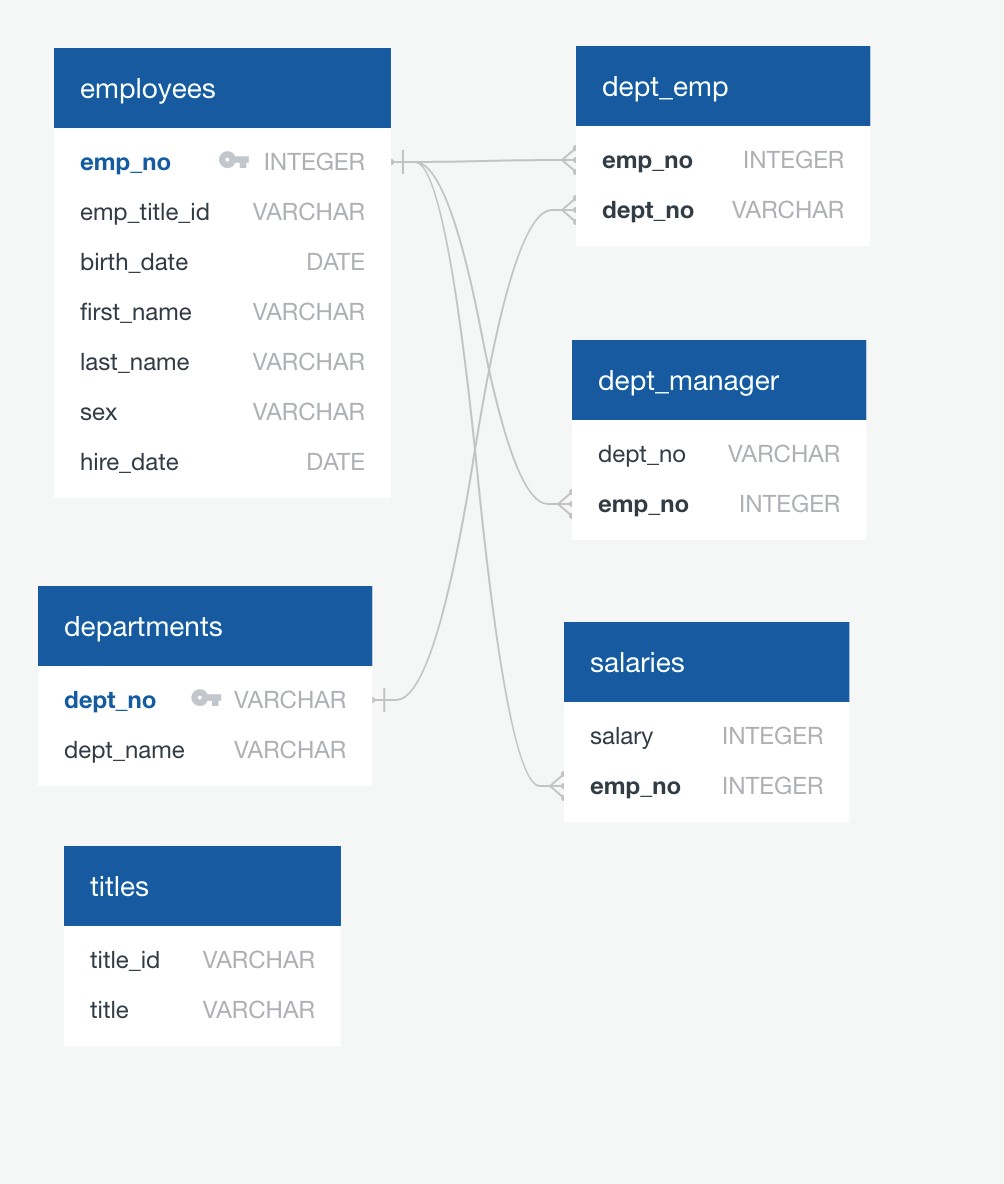
emp\_no INTEGER FK >- employees.emp\_no

salaries salary INTEGER

emp\_no INTEGER FK >- employees.emp\_no

titles

title\_id VARCHAR title VARCHAR



# —UPLOAD DATA FILES—

— employees.csv — DROP TABLE employees

CREATE TABLE employees ( emp\_no INT NOT NULL, emp\_title\_id VARCHAR (10) NOT NULL, birth\_date DATE, first\_name VARCHAR (25) NOT NULL, last\_name VARCHAR(25) NOT NULL, sex VARCHAR (2) NOT NULL , hire\_date DATE,

PRIMARY KEY (emp\_no)

);

—departments.csv— DROP TABLE departments

CREATE TABLE departments ( dept\_no VARCHAR (10), dept\_name VARCHAR(25),

PRIMARY KEY (dept\_no)

);

—dept\_emp.csv— DROP TABLE dept\_emp

CREATE TABLE dept\_emp ( emp\_no INT *NOT NULL,* dept\_no VARCHAR (10) NOT NULL,

FOREIGN KEY (emp\_no) REFERENCES employees(emp\_no),

FOREIGN KEY (dept\_no) REFERENCES departments(dept\_no)

);

—dept\_manager.csv— DROP TABLE dept\_manager CREATE TABLE dept\_manager ( dept\_no VARCHAR(10), emp\_noINT,

FOREIGN KEY (emp\_no) REFERENCES employees(emp\_no)

);

—salaries.csv— DROP TABLE salaries

CREATE TABLE salaries ( emp\_noINT, salary INT,

FOREIGN KEY (emp\_no) REFERENCES employees (emp\_no)

);

—titles.csv— DROP TABLE titles

CREATE TABLE titles ( title\_id VARCHAR (10),

title VARCHAR (25)

);

# —UNIQUE TEST for primary key columns—

SELECT count(dept\_no) FROM departments WHERE dept\_no = Null;

SELECT count (emp\_no) FROM employees

WHERE emp\_no = Null;

—No Nulls for employees— (NOTE, primary keys cannot have nulls, just checking) —No Nulls for departments—

SELECT COUNT(emp\_no)

FROM employees

GROUP BY emp\_no

ORDER BY emp\_no desc;

SELECT COUNT(dept\_no)

FROM departments GROUP BY dept\_no

ORDER BY dept\_no desc;

—No dups for employees— (NOTE, primary keys cannot have dups, just checking) —No dups for departments—

# —DATA ANALYSIS—

—1—

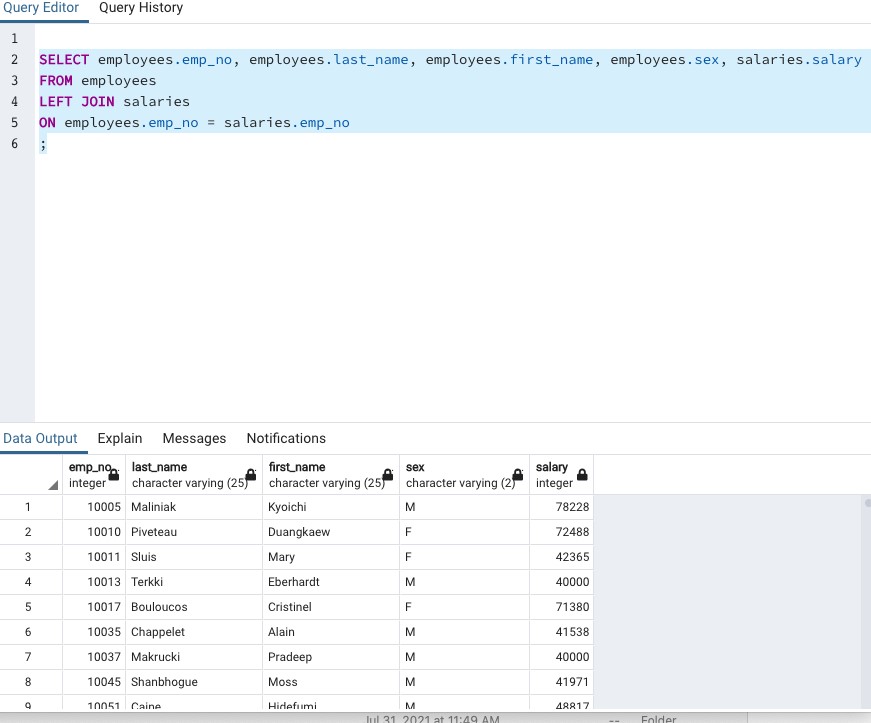
SELECT employees.emp\_no, employees.last\_name, employees.first\_name, employees.sex, salaries.salary

FROM employees

LEFT JOIN salaries

ON employees.emp\_no = salaries.emp\_no

;



—2—

SELECT employees.first\_name, employees.last\_name, employees.hire\_date

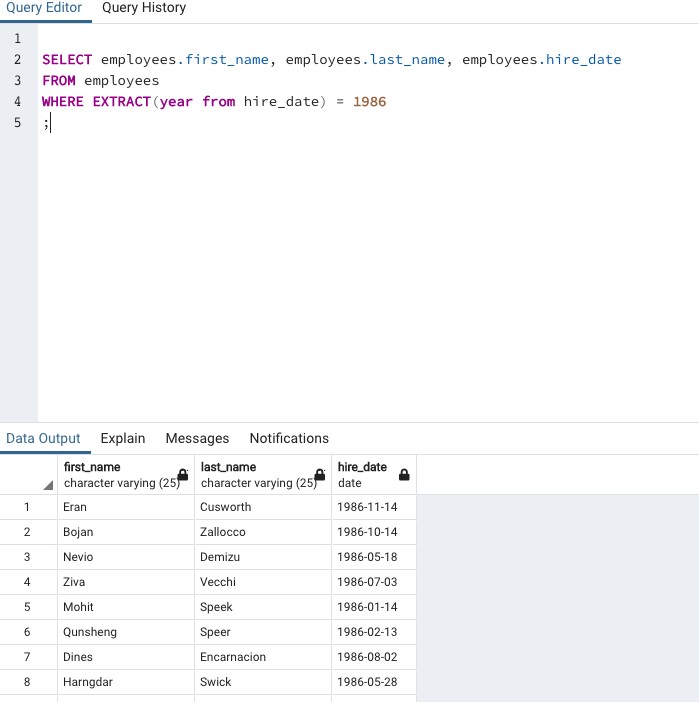
FROM employees

WHERE EXTRACT(year from hire\_date) = 1986

;

*NOTE: add if you want to sort (not specified)*

*ORDER BY hire\_date ASC;*



—3—

SELECT dept\_manager.dept\_no, departments.dept\_name, employees.emp\_no, employees.first\_name, employees.last\_name

FROM dept\_manager

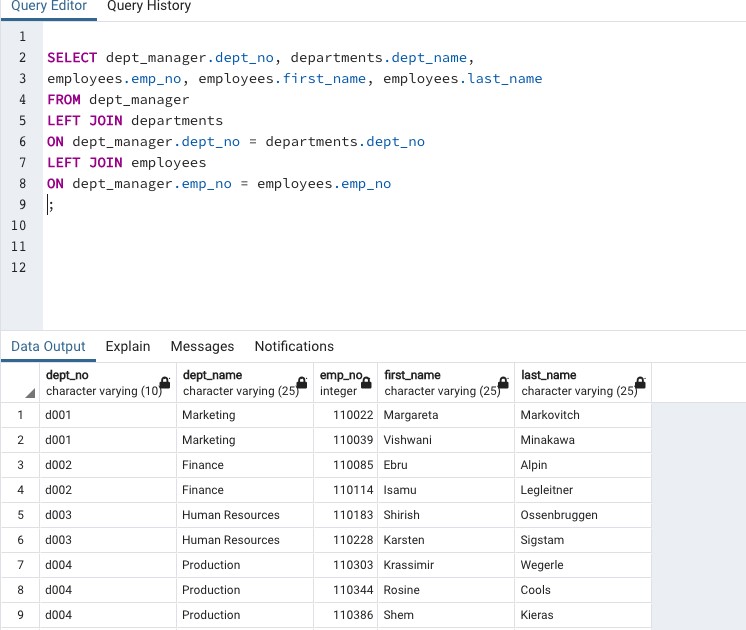
LEFT JOIN departments

ON dept\_manager.dept\_no = departments.dept\_no

LEFT JOIN employees

ON dept\_manager.emp\_no = employees.emp\_no

;



—4—

SELECT

employees.emp\_no, employees.last\_name, employees.first\_name,

departments.dept\_name FROM employees

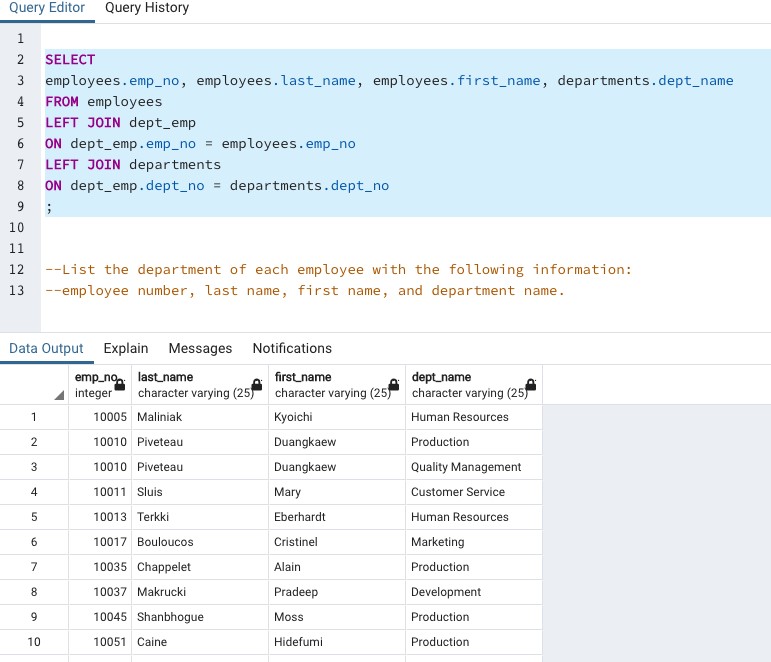
LEFT JOIN dept\_emp

ON dept\_emp.emp\_no = employees.emp\_no

LEFT JOIN departments

ON dept\_emp.dept\_no = departments.dept\_no

;

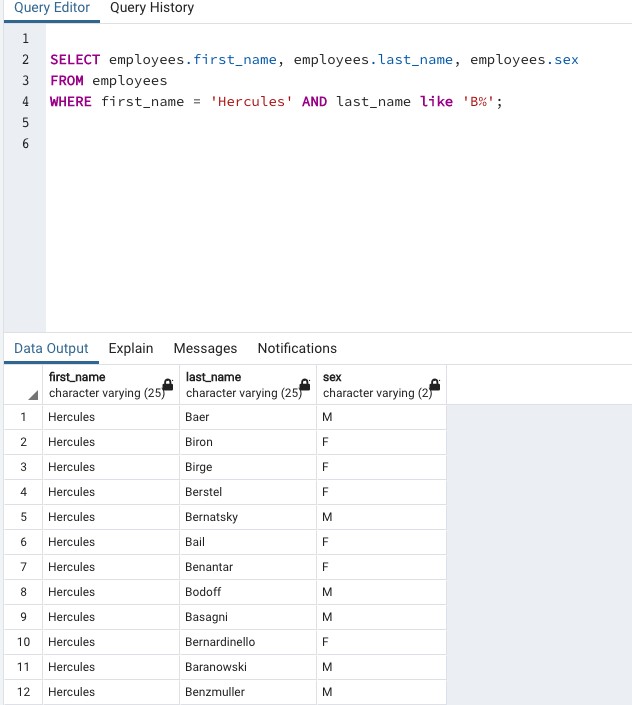


—5—

SELECT employees.first\_name, employees.last\_name, employees.sex

FROM employees

WHERE first\_name = 'Hercules' AND last\_name like 'B%';



—6—

SELECT employees.emp\_no, employees.last\_name, employees.first\_name, departments.dept\_name

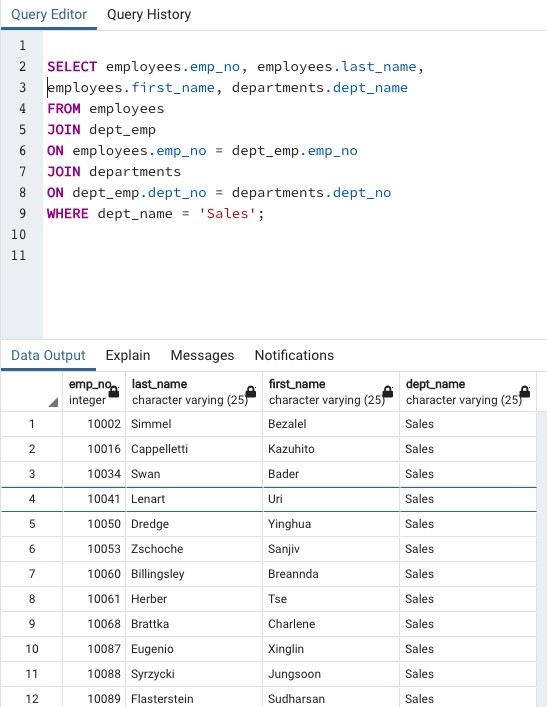
FROM employees

JOIN dept\_emp

ON employees.emp\_no = dept\_emp.emp\_no

JOIN departments

ON dept\_emp.dept\_no = departments.dept\_no WHERE dept\_name = 'Sales';



—7—

SELECT employees.emp\_no, employees.last\_name, employees.first\_name, departments.dept\_name

FROM employees

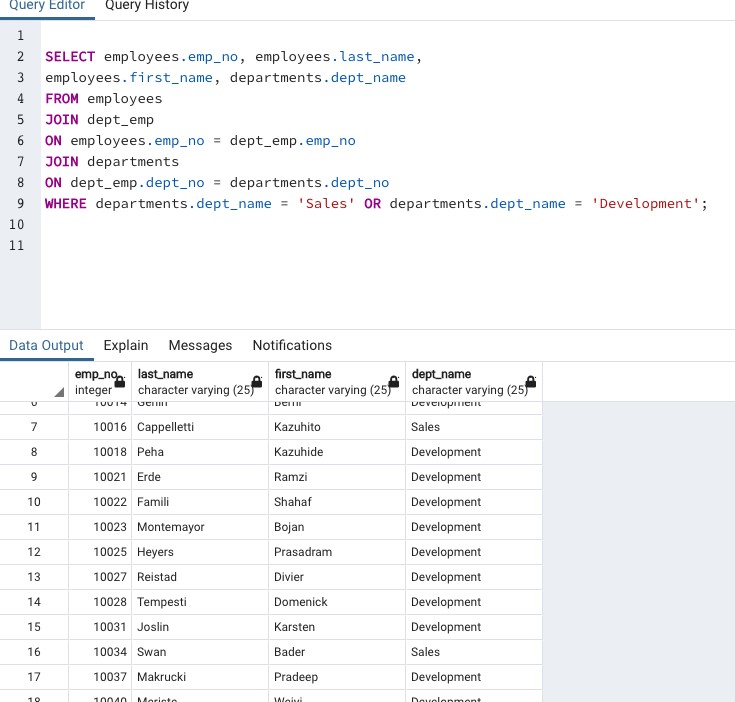
JOIN dept\_emp

ON employees.emp\_no = dept\_emp.emp\_no

JOIN departments

ON dept\_emp.dept\_no = departments.dept\_no

WHERE departments.dept\_name = 'Sales' OR departments.dept\_name = 'Development';



—8—

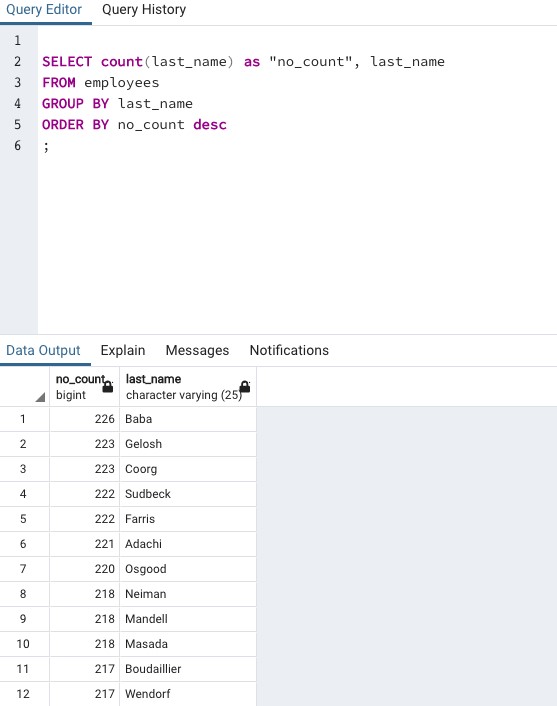
SELECT count(last\_name) as "no\_count", last\_name

FROM employees

GROUP BY last\_name

ORDER BY no\_count desc

;



—EPILOGUE—

