**SQL Assignment**

**Data Modeling**

Following are the csv to consider

* employee.csv
* departments.csv
* dept\_emp.csv
* dept\_manager.csv
* titles.csv

**Steps of data modeling:**

1. **Design ERD and create tables** to store the data.
2. **Import** CSVs into a **SQL database**.
3. Run different **SQL queries** to extract information.
4. Import SQL database to jupyter notebook using **SQLAlchemy for visulalization**

**ERD**

An Entity Relationship Diagram (ERD) is a snapshot of data structures. An Entity Relationship Diagram shows entities (tables) in a database and relationships between tables within that database. A good database design it is imp to have an Entity Relationship Diagram

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**Data Analysis**

**Tables created**

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--#1. List the following details of each employee: employee number, last name, first name, gender, and salary.

select e.emp\_no,e.last\_name,e.first\_name,e.gender,s.salary

from employee e,salaries s

where e.emp\_no=s.emp\_no

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--#2. List employees who were hired in 1986.

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

FROM employee WHERE hire\_date BETWEEN '1986-01-01' AND '1987-01-01';

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--#3. List the manager of each department with the following information: department number, department name, the manager's employee number, last name, first name, and start and end employment dates.

SELECT dept.dept\_no, dept.dept\_name, dept\_m.emp\_no, employee.last\_name, employee.first\_name, dept\_m.from\_date, dept\_m.to\_date

FROM dept

JOIN dept\_m ON dept.dept\_no = dept\_m.dept\_no

JOIN employee ON dept\_m.emp\_no = employee.emp\_no;

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

SELECT dept\_e.emp\_no, employee.last\_name, employee.first\_name, dept.dept\_name

FROM dept\_e

JOIN employee ON dept\_e.emp\_no = employee.emp\_no

JOIN dept ON dept\_e.dept\_no = dept.dept\_no;

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--#5. List all employees whose first name is "Hercules" and last names begin with "B."

SELECT first\_name, last\_name

FROM employee WHERE first\_name = 'Hercules' AND last\_name LIKE 'B%';

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--#5. List all employees whose first name is "Hercules" and last names begin with "B."

SELECT first\_name, last\_name

FROM employee WHERE first\_name = 'Hercules' AND last\_name LIKE 'B%';

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--#6. List all employees in the Sales department, including their employee number, last name, first name, and department name.

SELECT dept\_e.emp\_no, employee.last\_name, employee.first\_name, dept.dept\_name

FROM dept\_e

JOIN employee ON dept\_e.emp\_no = employee.emp\_no

JOIN dept ON dept\_e.dept\_no = dept.dept\_no

WHERE dept.dept\_name = 'Sales';

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--#7. List all employees in the Sales and Development departments, including their employee number, last name, first name, and department name.

SELECT dept\_e.emp\_no, employee.last\_name, employee.first\_name, dept.dept\_name

FROM dept\_e

JOIN employee ON dept\_e.emp\_no = employee.emp\_no

JOIN dept ON dept\_e.dept\_no = dept.dept\_no

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

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--#8. 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 employee

GROUP BY last\_name

ORDER BY

COUNT(last\_name) DESC;

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