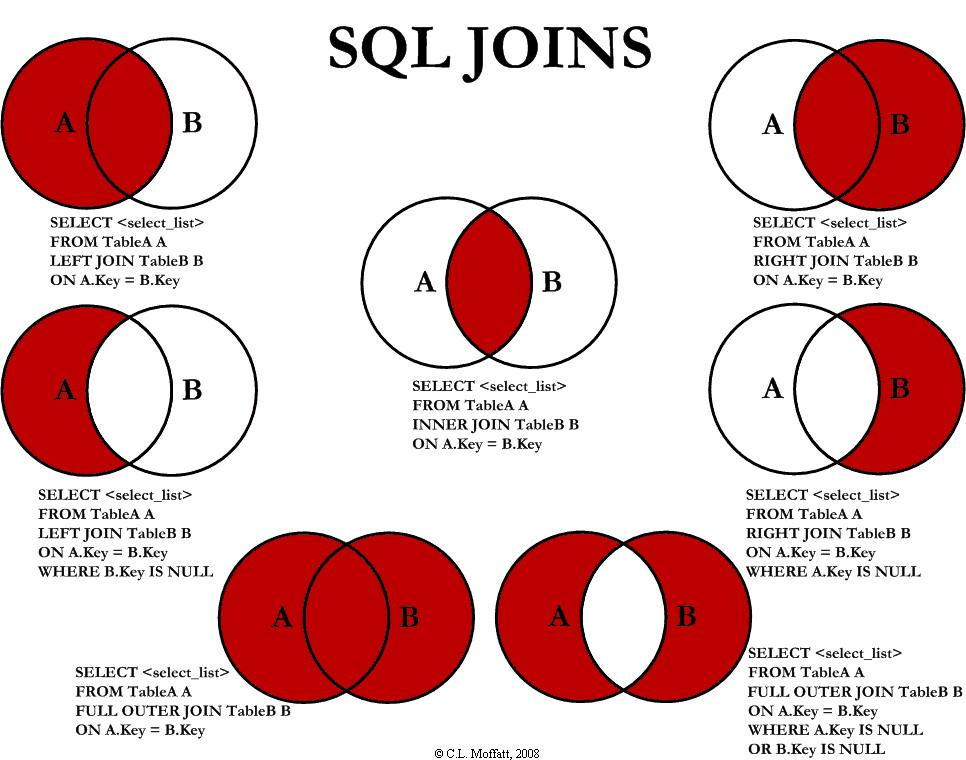
**SQL JOINS and Views**

**SQL JOIN**

JOIN, as the name implies, means to combine something. In SQL, JOIN means to join two or more tables. A JOIN clause joins rows from two or more tables based on a common column.

There are different types of joins in SQL.



And the different joins are:

1. Inner Join

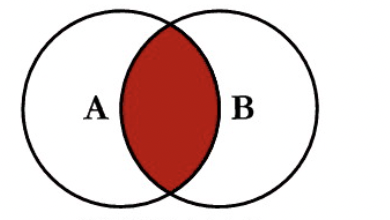
2. Left Join

3. Right Join

4. Outer Join

**INNER JOIN**

The INNER JOIN keyword selects records from both tables that have matching values.



Syntax

SELECT *column(s)*

FROM *table\_1*

INNER JOIN *table\_2*

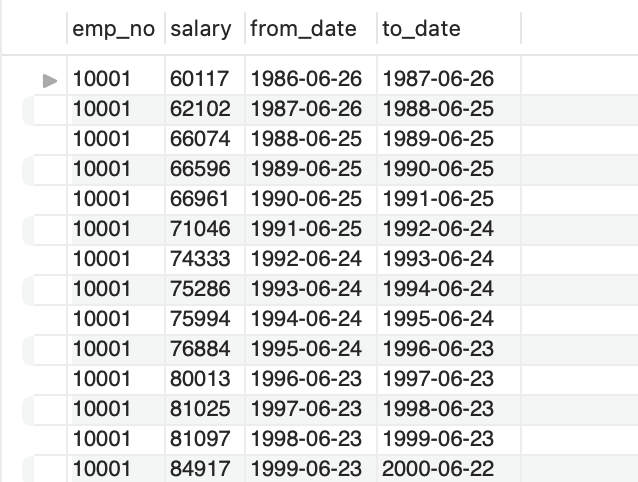
ON *table\_1.column* = *table\_2.column*;

Example

A selection from the "Employees" table is shown below.



A selection from the "Salaries" table is shown below.



In the above two tables, the common column is emp\_no. Therefore, we will use the inner join on this column to join both tables.

SELECT employees.first\_name, salaries.salary

FROM employees

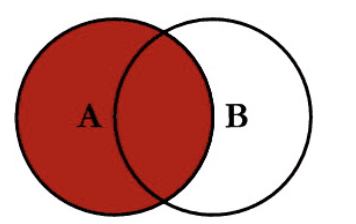
INNER JOIN salaries ON employees.emp\_no = salaries.salary;

This returns the matching values of both tables.



**LEFT JOIN**

Left join returns all of the values from the left table and any matching values from the right table; if no matching join values are found, it returns NULL.



Syntax

SELECT table1.column1, table2.column2,....

FROM table1

LEFT JOIN table2

ON table1.column\_field = table2.column\_field;

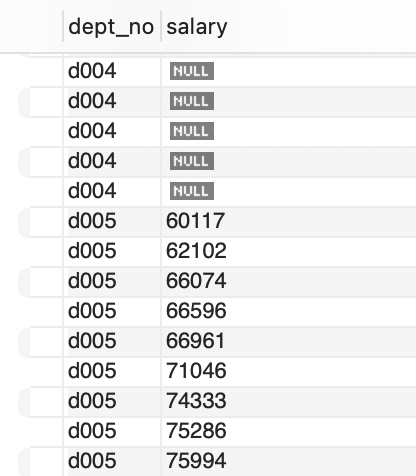
Example

SELECT dept\_emp.dept\_no, salaries.salary

FROM dept\_emp

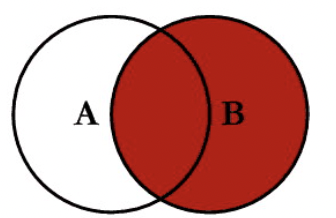
LEFT JOIN salaries

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



**RIGHT JOIN**

Right join returns all of the values from the right table and any matching values from the left table; if no matching join values are found, it returns NULL.



Syntax

SELECT table1.column1, table2.column2.....

FROM table1

RIGHT JOIN table2

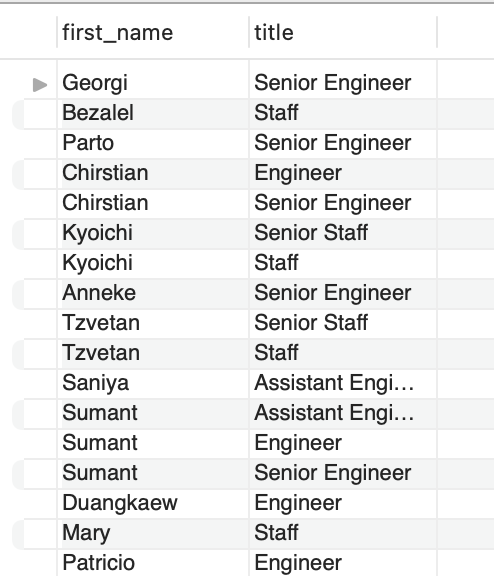
ON table1.column\_field = table2.column\_field;

Example

SELECT first\_name, title FROM titles

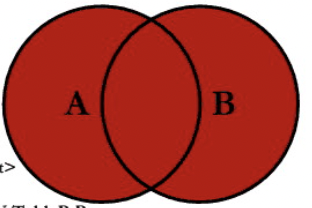
RIGHT JOIN employees

ON titles.emp\_no = employees.emp\_no



**OUTER JOIN**

The SQL FULL OUTER JOIN joins two tables based on a common column and selects records with matching values in these columns as well as any remaining rows from both tables.



Syntax

SELECT table1.column1, table2.column2.....

FROM table1

FULL OUTER JOIN table2

ON table1.column\_name = table2.column\_name

WHERE condition;

Example

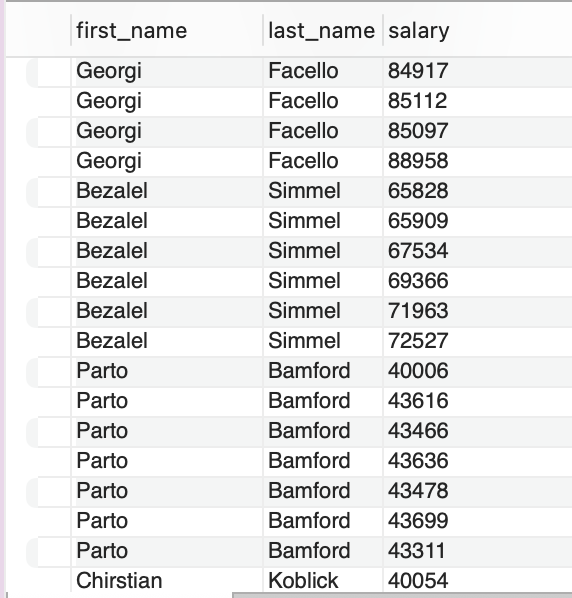
In MySQL, we use JOIN instead of OUTER JOIN.

SELECT first\_name, last\_name,salary

FROM employees

JOIN salaries

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



**UNION Operator**

The UNION operator joins the results of two or more SELECT statements. Within UNION, every SELECT statement must have the same number of columns. The columns must also be of the same data type. Every SELECT statement's columns must also be in the same order.

SELECT column(s) FROM table1

UNION

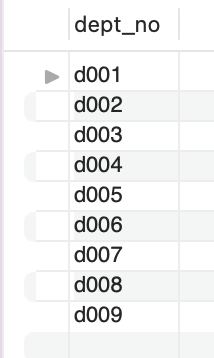
SELECT column(s) FROM table2;

Example

SELECT dept\_no FROM dept\_emp

UNION

SELECT dept\_no FROM dept\_manager;



**UNION ALL OPERATOR**

UNION deals with distinct values, but UNION ALL returns duplicate values.

Syntax

SELECT *column\_name(s)* FROM *table1*

UNION ALL

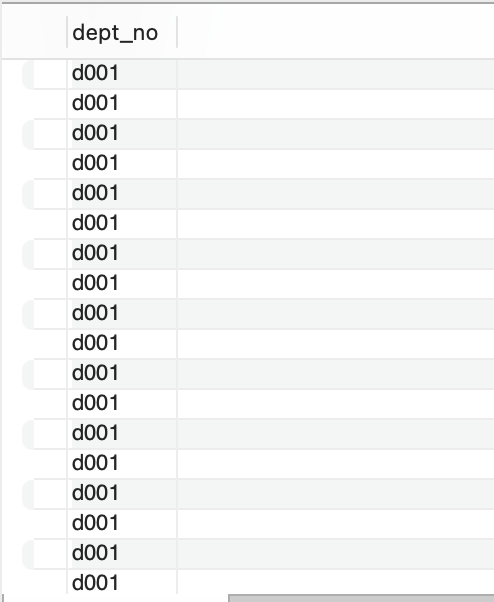
SELECT *column\_name(s)* FROM *table2*;

Example

SELECT dept\_no FROM dept\_emp

UNION

SELECT dept\_no FROM dept\_manager;



**INTERSECT OPERATOR**

The INTERSECT operator is used to find records that are shared by two SELECT statements or data sets. If a record exists in one query but not in the other, the INTERSECT results will exclude it.

Syntax

SELECT column1 , column2 ....

FROM table\_names

WHERE condition

INTERSECT

SELECT column1 , column2 ....

FROM table\_names

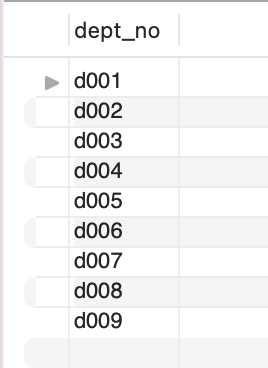
WHERE condition

**Example**

SELECT dept\_no FROM dept\_emp

INTERSECT

SELECT dept\_no FROM dept\_manager

****

**SQL SUBQUERY**

A subquery is simply a query contained within another query. In other words, a Subquery is a query that is embedded within the WHERE clause of another SQL query.

Syntax

SELECT column\_name

FROM table\_name

WHERE column\_name *expression operator*

( SELECT COLUMN\_NAME FROM TABLE\_NAME WHERE ... );

Example

Write an SQL query to find employees who earn more than the average salary of the employees.

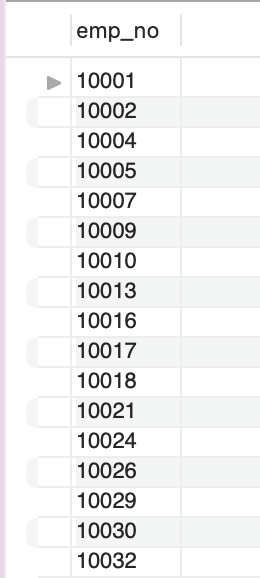
SELECT emp\_no

FROM salaries

WHERE salary >

( SELECT AVG(salary)

FROM salaries )



**SQL Views**

Views in SQL are essentially virtual tables. A view, like a real table in the database, has rows and columns. We can create a view by selecting fields from one or more database tables.

Syntax

CREATE VIEW view\_name AS

SELECT column1, column2.....

FROM table\_name

WHERE condition;

Example

Let us create a virtual table of emp\_no, first\_name and last\_name using CREATE VIEW.

CREATE VIEW emp\_names AS

SELECT emp\_no, first\_name, last\_name

FROM employees;

Let us look at the emp\_names table.

SELECT \* FROM emp\_names;

