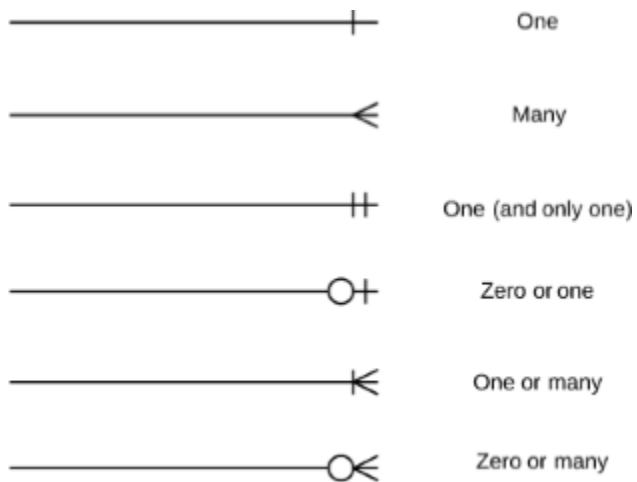# SQL JOIN
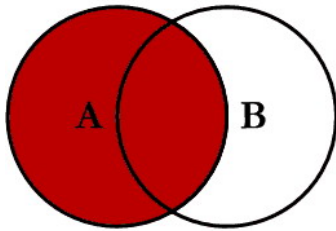
PostgreSQL or Postgres
password: postgres1
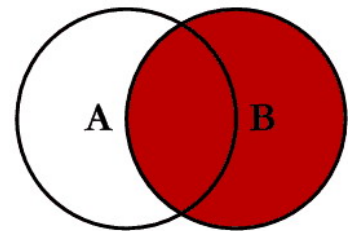
- Primary Key
  - Natural Key
  - Surrigate Key
- Foreign Key

Symbol	Meaning
────────┼	One
────────<	Many
────────╫	One (and only one)
───────○┼	Zero or one
───────<	One or many
───────○<	Zero or many

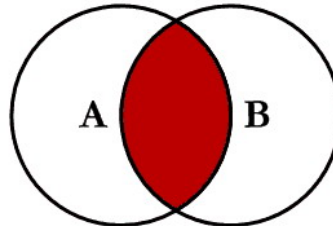# SQL JOINS

SELECT <select_list>
FROM TableA A
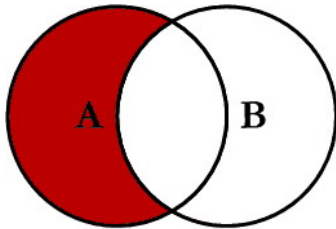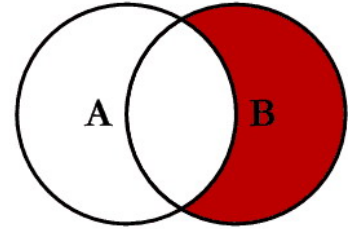LEFT JOIN TableB B
ON A.Key = B.Key

SELECT <select_list>
FROM TableA A
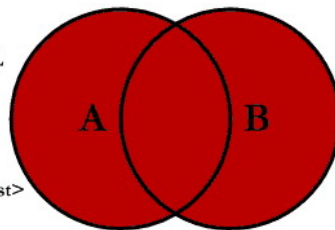INNER JOIN TableB B
ON A.Key = B.Key

SELECT <select_list>
FROM TableA A
RIGHT JOIN TableB B
ON A.Key = B.Key

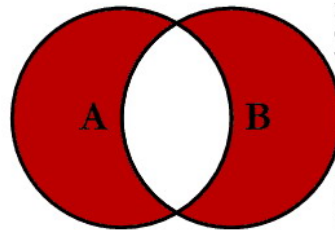SELECT <select_list>
FROM TableA A
LEFT JOIN TableB B
ON A.Key = B.Key
WHERE B.Key IS NULL

SELECT <select_list>
FROM TableA A
RIGHT JOIN TableB B
ON A.Key = B.Key
WHERE A.Key IS NULL

SELECT <select_list>
FROM TableA A
FULL OUTER JOIN TableB B
ON A.Key = B.Key

SELECT <select_list>
FROM TableA A
FULL OUTER JOIN TableB B
ON A.Key = B.Key
WHERE A.Key IS NULL
OR B.Key IS NULL

© C.L. Moffatt, 2008

Complete SELECT query

```sql
SELECT DISTINCT column, AGG_FUNC(column_or_expression), …
FROM mytable
    JOIN another_table
      ON mytable.column = another_table.column
    WHERE constraint_expression
    GROUP BY column
    HAVING constraint_expression
    ORDER BY column ASC/DESC
    LIMIT count OFFSET COUNT;
```

PostgreSQL Order of *Evaluation*

The order in which SQL is **written** is similar to the way that we might ask a question. However, SQL statements are not **processed** in the order in which it is written. SQL Statements are processed in a sequence …

FROM defines the sources, **WHERE** filters the source rows, **GROUP BY** aggregates the data, **HAVING** filters the aggregate rows, **SELECT** defines the returned attributes (columns) **DISTINCT** removes duplicate rows, **ORDER BY** sorts the result rows, and **LIMIT** restricts the number of rows returned

FROM
↓
WHERE
↓
GROUP BY
↓
HAVING
↓
SELECT
↓
DISTINCT
↓
ORDER BY
↓
LIMIT

Question: Is there a way to use exponents in numbers in SQL?
Answer: All the fun math functions in PostgreSQL at
https://www.postgresql.org/docs/7.3/functions-math.html

Giving feedback on your group partners (TPS report)

https://te-reign.azureedge.net/
user: email
password: TechElevatorStudent