

# SQL Literacy

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# Outline

Intro

Database Basics

Powers

Considerations

## Why SQL Databases?

- ▶ built for data storage and retrieval
- ▶ fast and optimized for this task
- ▶ data integrity
- ▶ relational

once your data reaches thousands/tens of thousands of records, doing the processing in javascript will be unfeasably slow and memory intensive.

- ▶ 15s page load -> 0.01s page load

# How this will work

- ▶ live coding

## Tools

- ▶ pgcli <https://github.com/dbcli/pgcli>
- ▶ dbeaver <https://dbeaver.io/>
- ▶ postico <https://eggerapps.at/postico/>

# Structure

- ▶ tables
- ▶ columns
- ▶ data type
- ▶ indexes
- ▶ constraints (pk, unique, check, fk)
- ▶ foreign key

# Querying

- ▶ insert
- ▶ update
- ▶ delete
- ▶ select

# Joins

## Relationships

- ▶ many-to-many
- ▶ one-to-many
- ▶ many-to-one

## Join Types

- ▶ left join
- ▶ inner join

# Aggregations

count things, sum things.

- ▶ count
- ▶ sum
- ▶ avg

aggregates can use

- ▶ group by



# Geolocation

- ▶ GeoJSON
- ▶ ST\_ functions

<https://postgis.net/>

# Your ORM

- ▶ turns query results into objects.
- ▶ simplifies querying the database
- ▶ isn't magic

To become more comfortable with your ORM and SQL

- ▶ log your sql queries
- ▶ all ORM's have raw query ability for a reason.