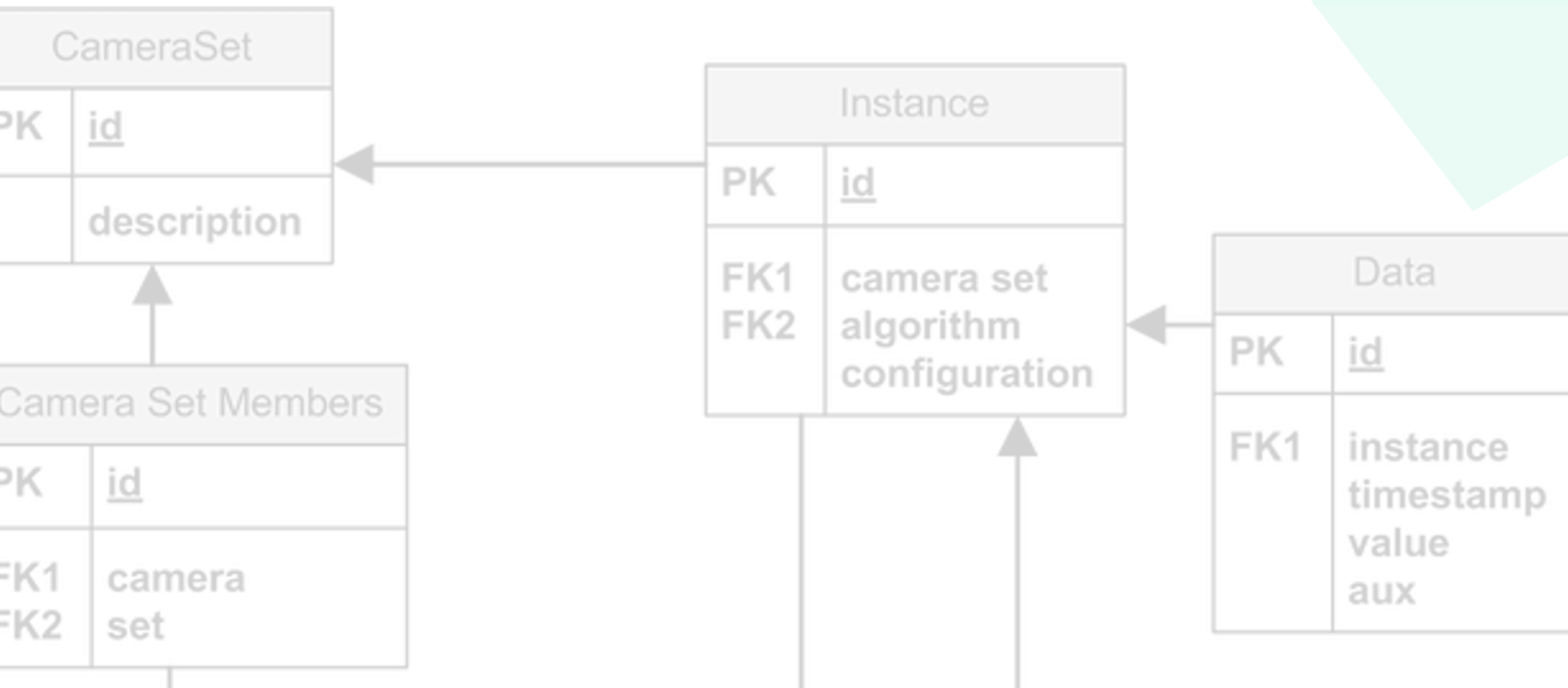


# *The ABC's of DBs*

Database Design and Content Management



# About Me

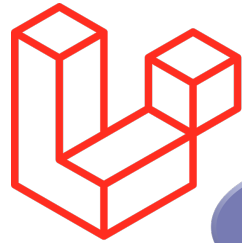
Web Developer, Programmer Analyst 2, Designer

## Work

*UNM Early  
Childhood  
Services Center*



## Web Dev



# *UNM ECSC*

University of New Mexico Early Childhood Services Center



- Web Designer (2019 – 2020)
- Programmer Analyst 2 (2020-Present)
- Build and maintain all ECSC websites, applications, and databases:
  - [www.newmexicokids.org](http://www.newmexicokids.org)
  - [search.newmexicokids.org](http://search.newmexicokids.org)

# About Me

Web Developer, Programmer Analyst 2, Designer

## Work

*UNM Early  
Childhood  
Services Center*

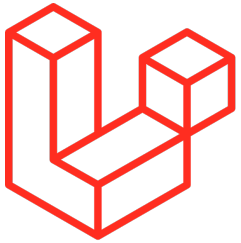


## Web Dev



# Developer

PHP, Laravel, JavaScript, MySQL



- 5+ years experience with Laravel



- 7+ years experience with PHP + MySQL



- 10+ years experience with HTML, CSS, JavaScript

# About Me

Web Developer, Programmer Analyst 2, Designer

## Work

*UNM Early  
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Services Center*



## Web Dev



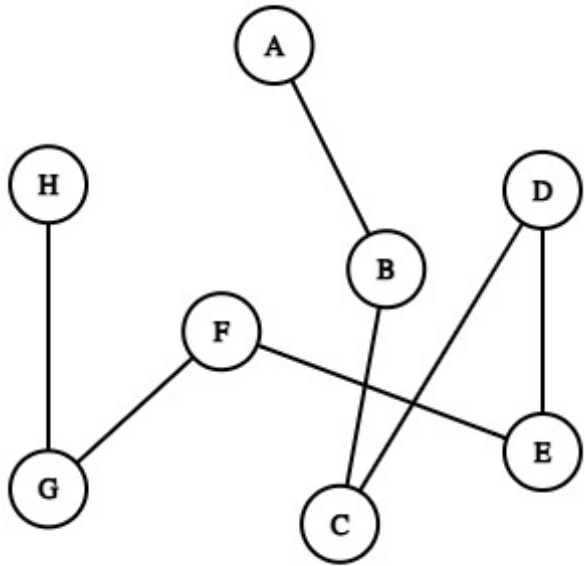
# *What is a Database?*

ABC's of DBs

# *What is a Database?*

ABC's of DBs

ORGANIZED

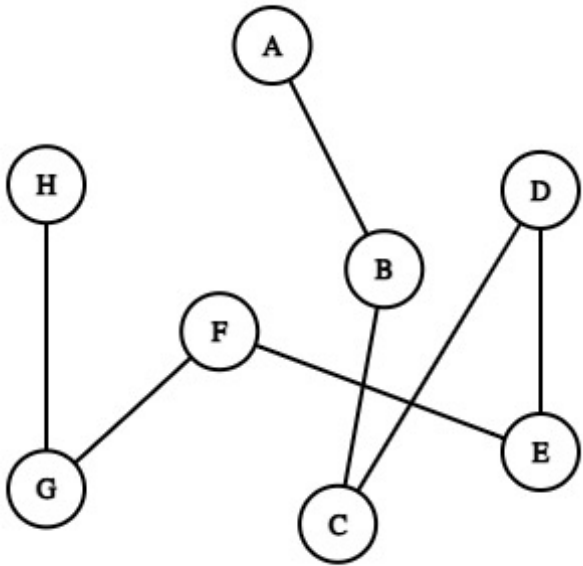




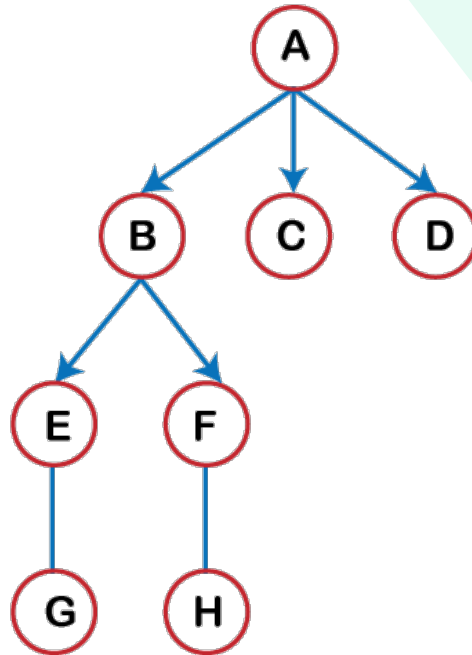
# *What is a Database?*

ABC's of DBs

ORGANIZED



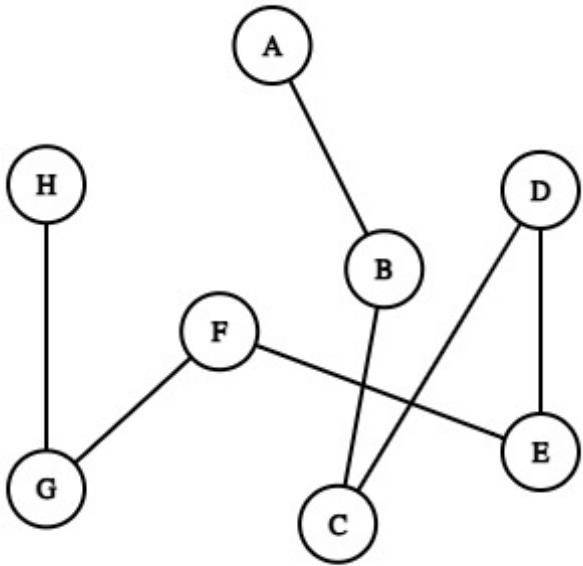
STRUCTURED



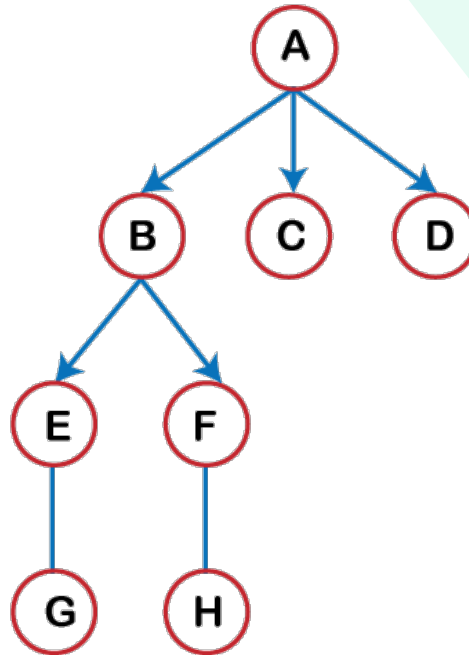
# What is a Database?

ABC's of DBs

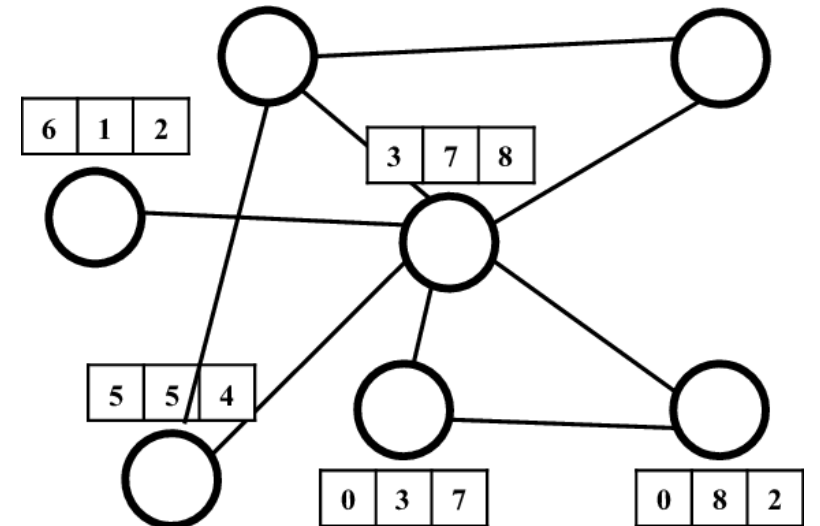
ORGANIZED



STRUCTURED



COLLECTION



# *Database Organization*

## Organization

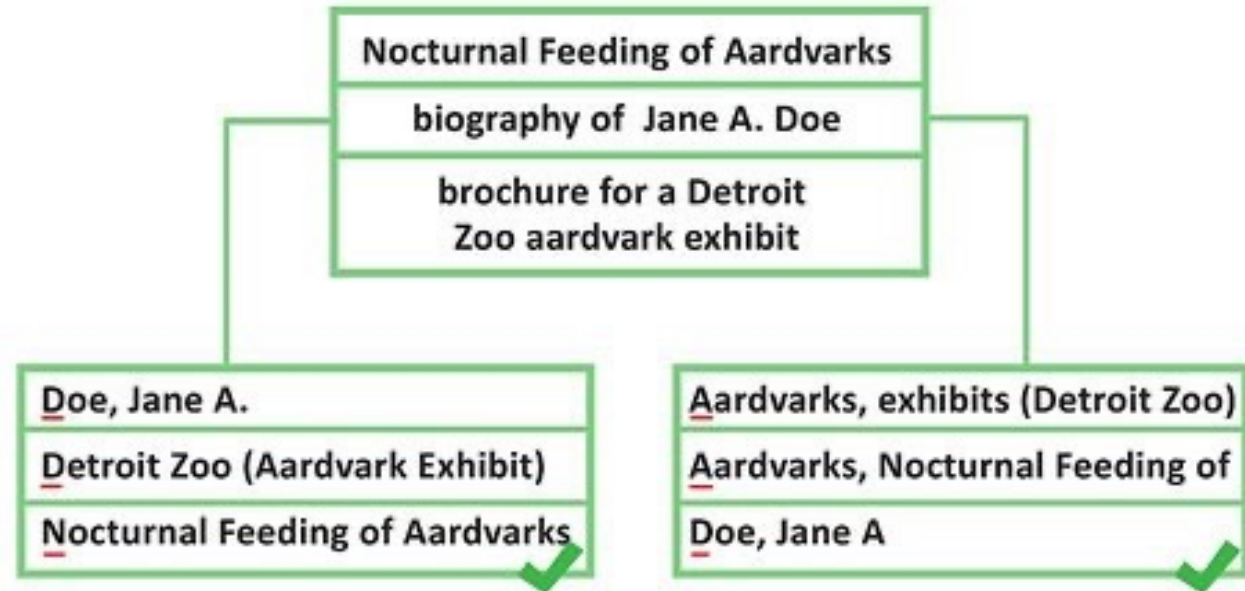
- Alphabetic Organization
- Numeric Organization
- Object Organization
- Graph Organization

# Database Organization

## Organization

- Alphabetic Organization
- Numeric Organization
- Object Organization
- Graph Organization

Order files alphabetically according to their indexed name



# *Database Organization*

## Organization

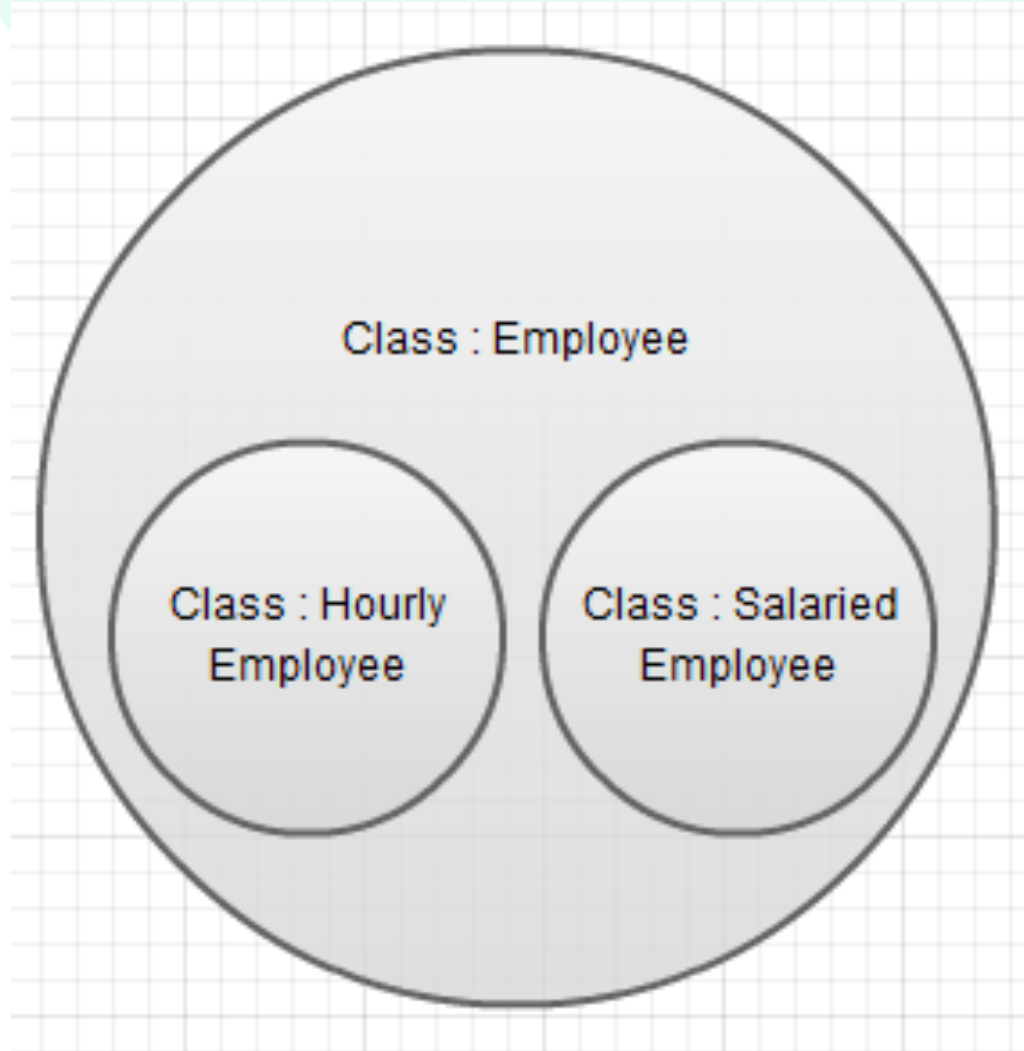
- Alphabetic Organization
- Numeric Organization
- Object Organization
- Graph Organization

1. Item One
2. Item Two
3. Item Three

# *Database Organization*

## Organization

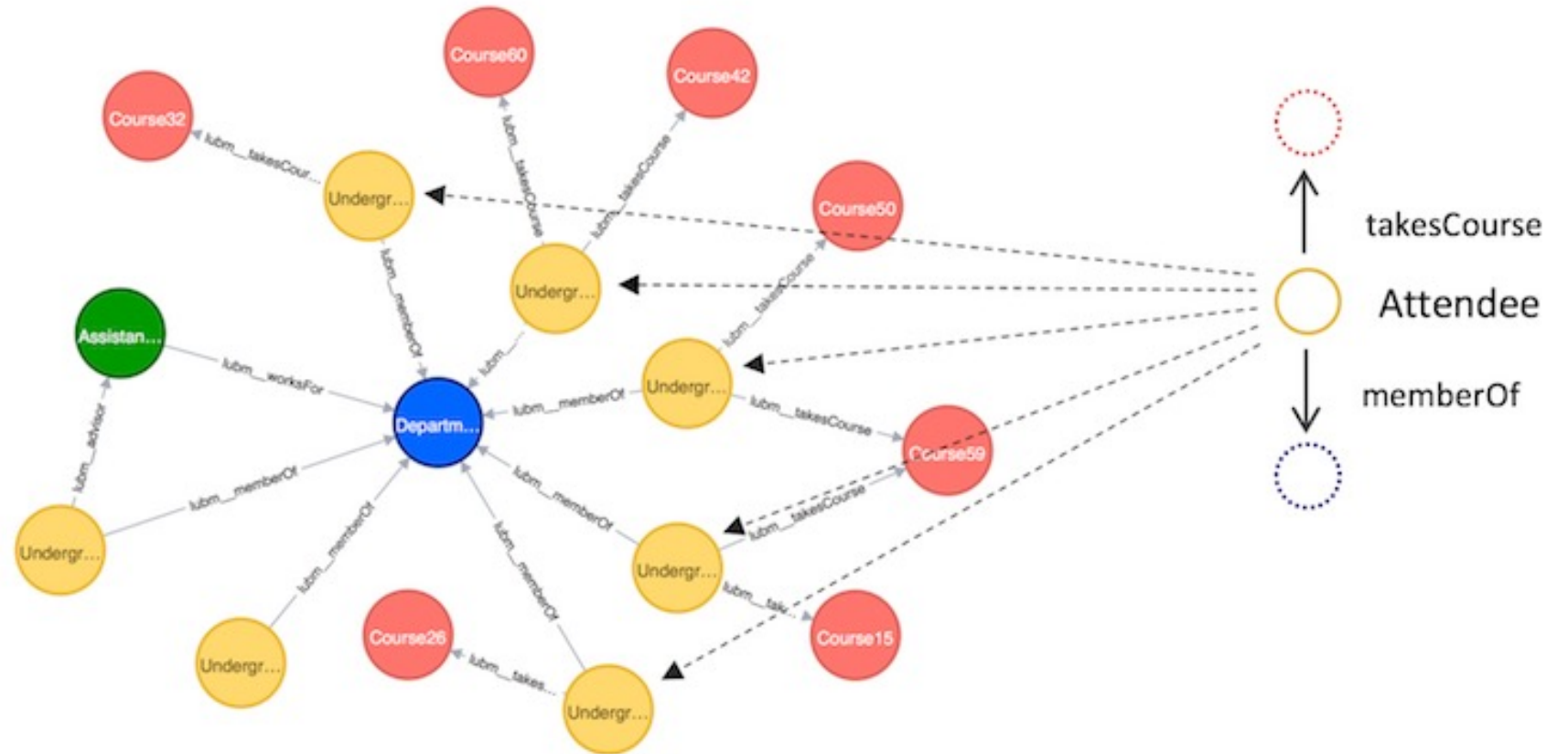
- Alphabetic Organization
- Numeric Organization
- Object Organization
- Graph Organization



# Database Organization

## Organization

- Alphabetic Organization
- Numeric Organization
- Object Organization
- Graph Organization



# *Relational Databases*

Data Tables — The most common database type

table	
column	type

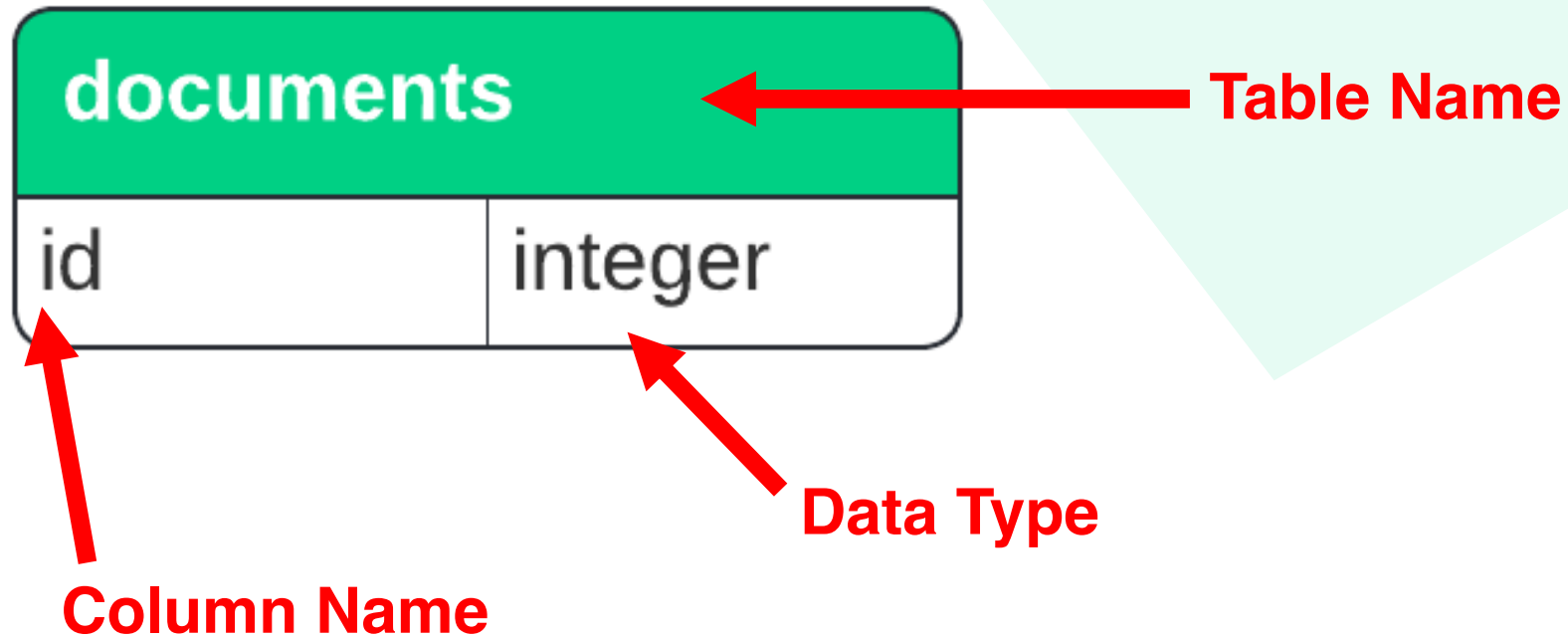
The most common databases today use tables that organize information into COLUMNS and ROWS.

Columns have a data-type, and a row contains multiple columns.



# *Relational Databases*

Data Tables — The most common database type



# *Relational Databases*

Data Tables — The most common database type

documents	
id	integer
title	text
body	text
created_at	datetime
last_update	datetime
author	text

# *Relational Databases*

## Example Data

<b>SELECT * FROM documents WHERE id=4732;</b>	
id	4732
title	Example
body	this is an exa[...]
created_at	2022-05-12 13:02:13
last_update	2022-05-14 17:22:01
author	Garrett Massey

# Relational Databases

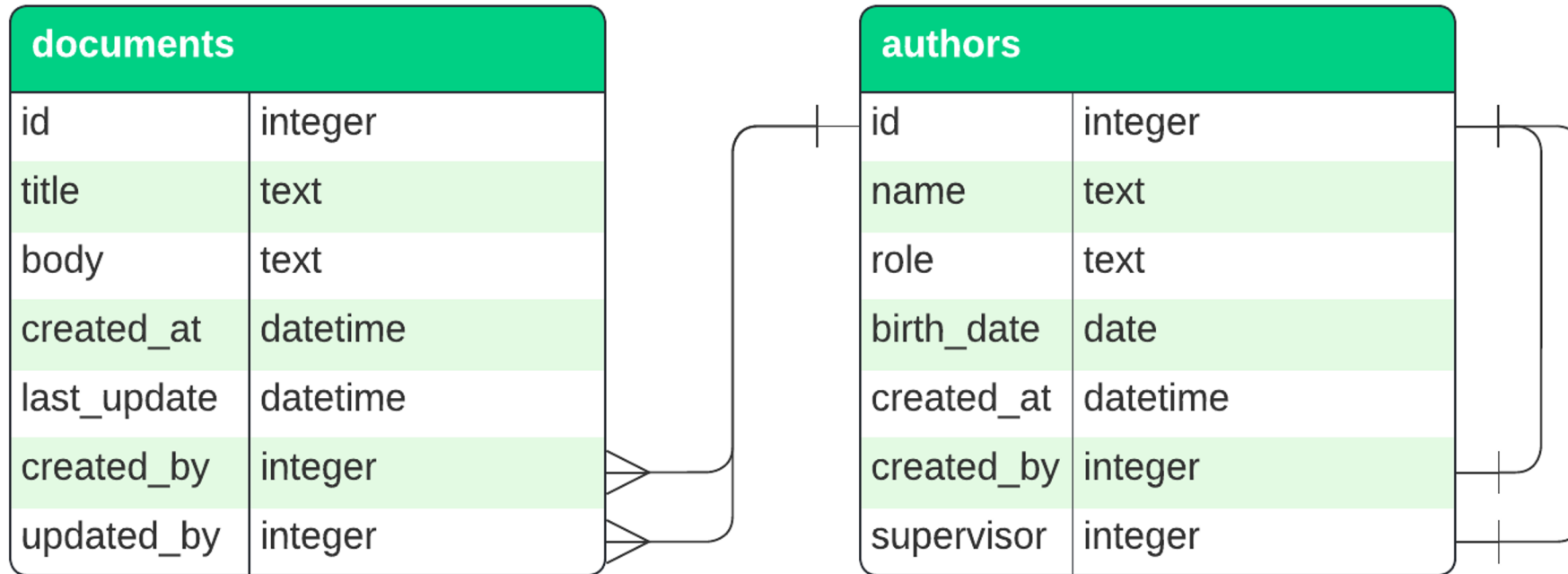
## Example Data

<b>SELECT * FROM documents WHERE id=4732;</b>	
id	4732
title	Example
body	this is an exa[...]
created_at	2022-05-12 13:02:13
last_update	2022-05-14 17:22:01
author	Garrett Massey

What if we wanted to include additional author information, like date of birth, or number of documents, or the author's role in a team?

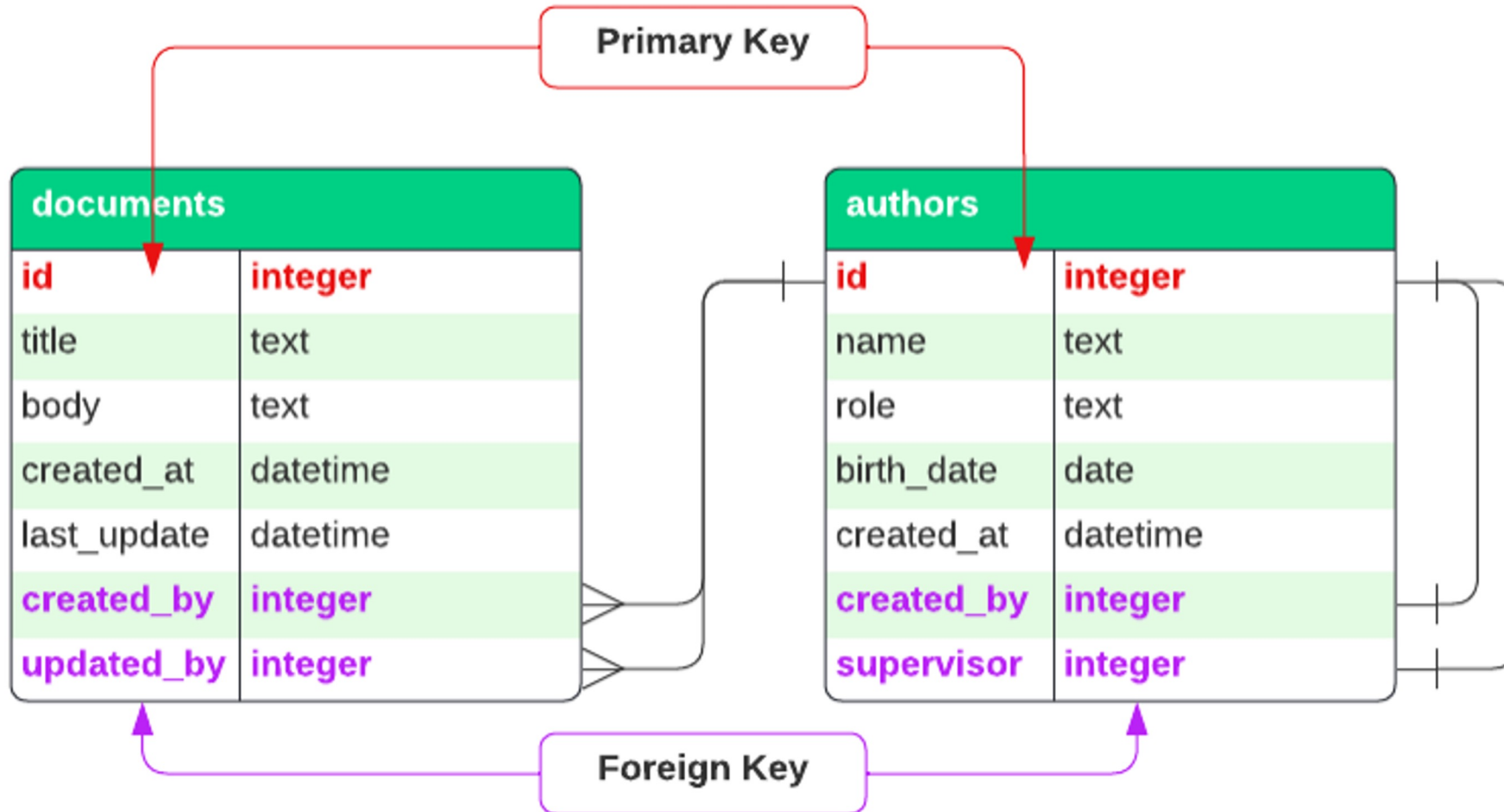
# Relational Databases

## Primary and Foreign Keys



# Relational Databases

## Primary and Foreign Keys

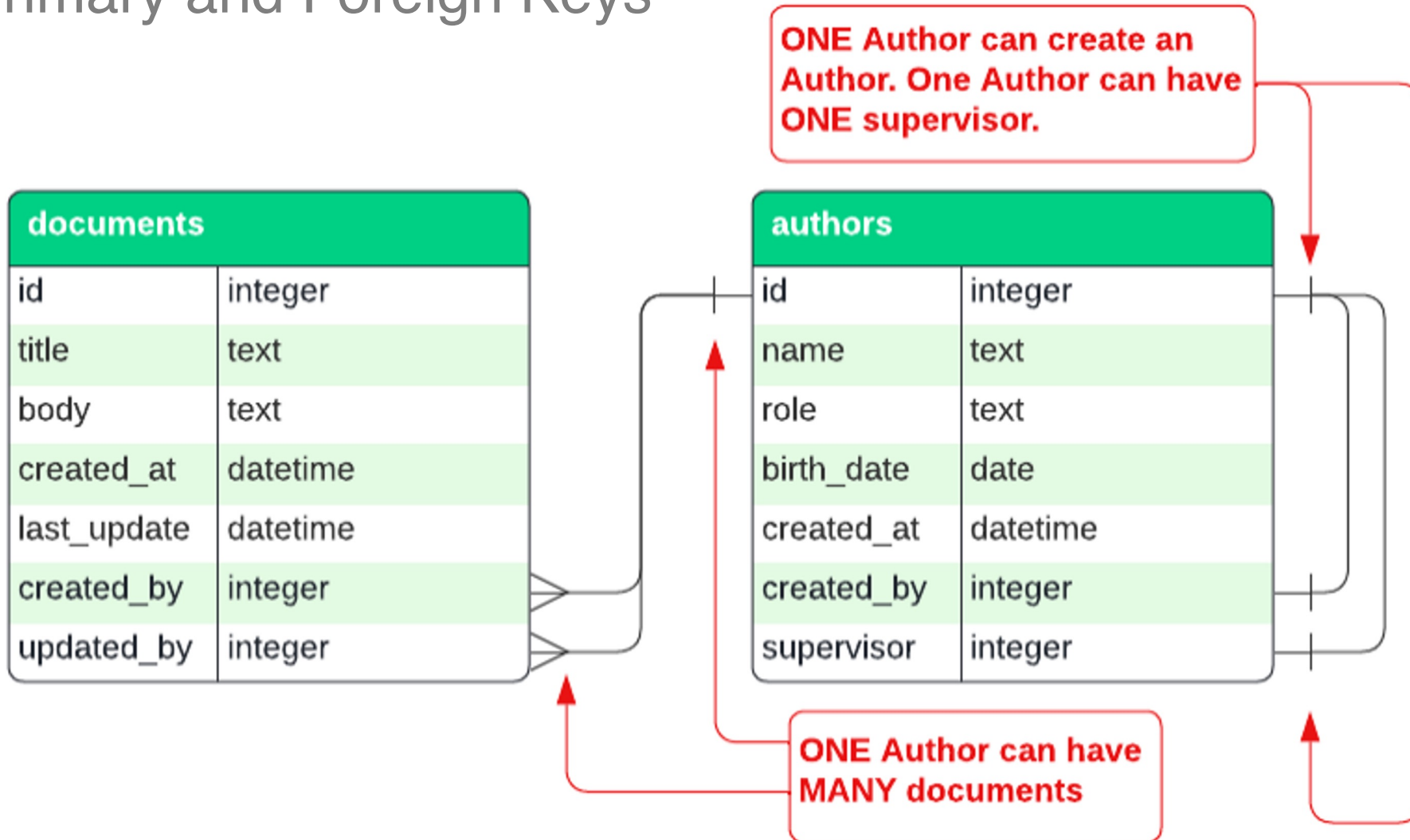


Primary Keys are the unique identifier of an item in the table.

Foreign Keys reference a Primary Key on a different table.

# Relational Databases

## Primary and Foreign Keys



Tip:

A cross means “one” and the fork means “many”. Cross leading to fork is read as “one x has many y”

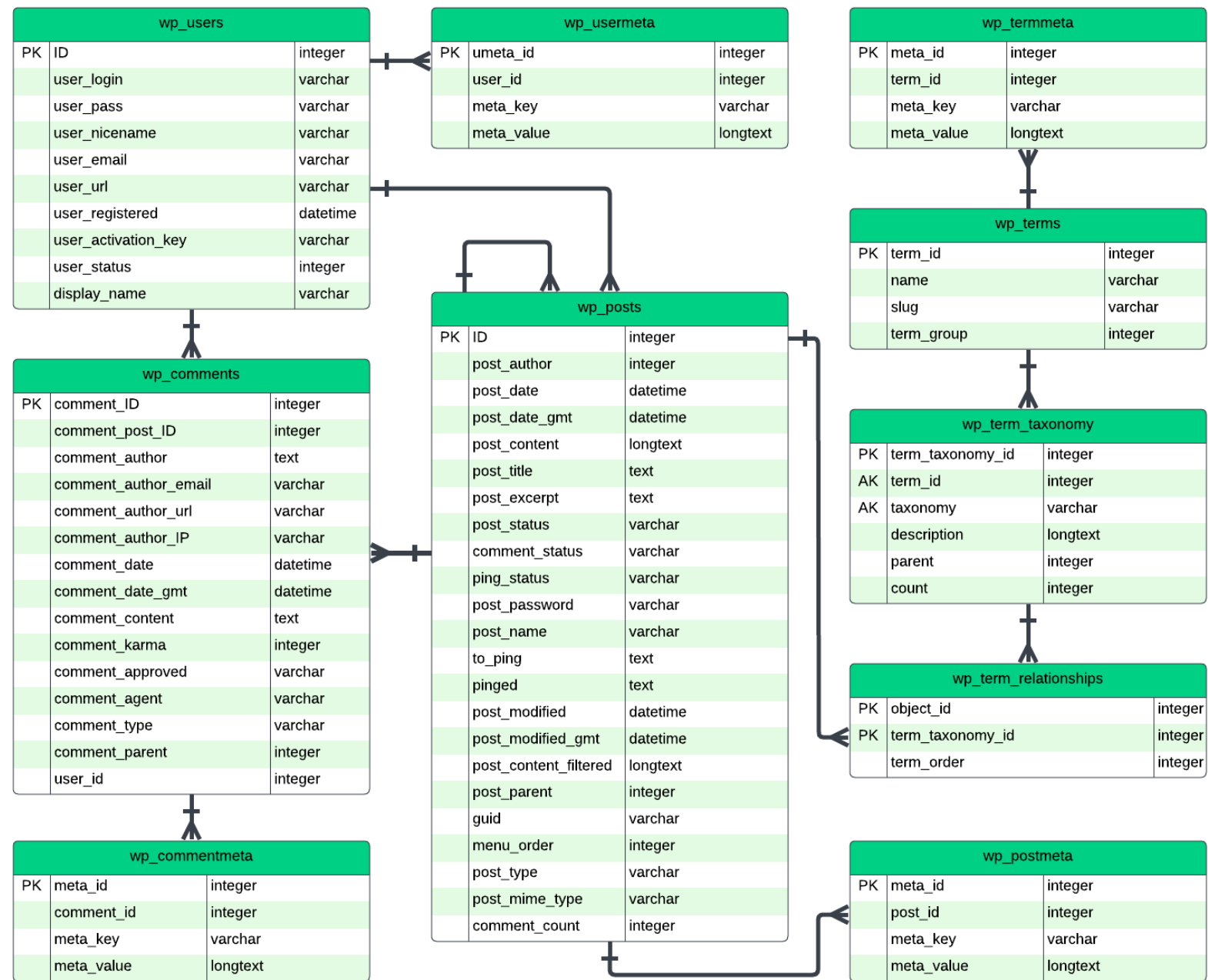
# *Relational Databases*

Real World Example:

The WordPress Content Management  
System Database



# The WordPress Database

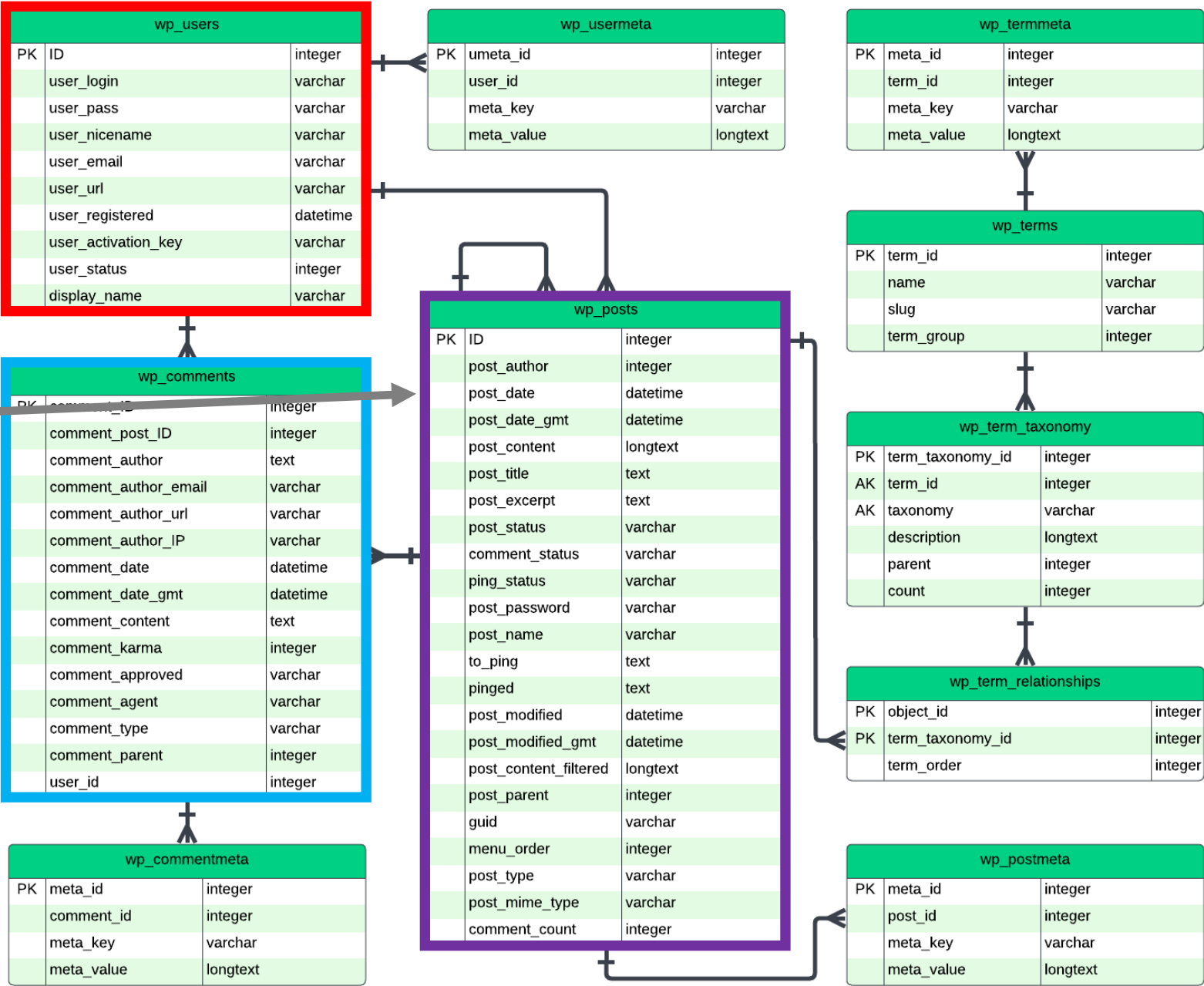


# The WordPress Database

ONE **user** can have MANY **posts**.

ONE **user** has MANY **comments**

ONE **post** has MANY **comments**



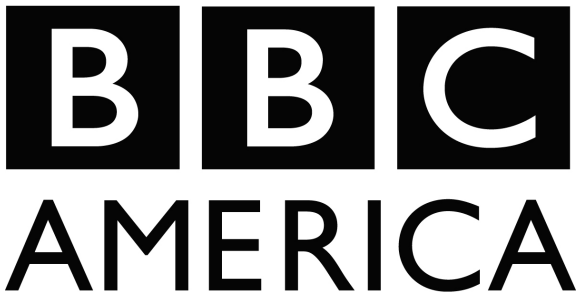
Groups using WordPress



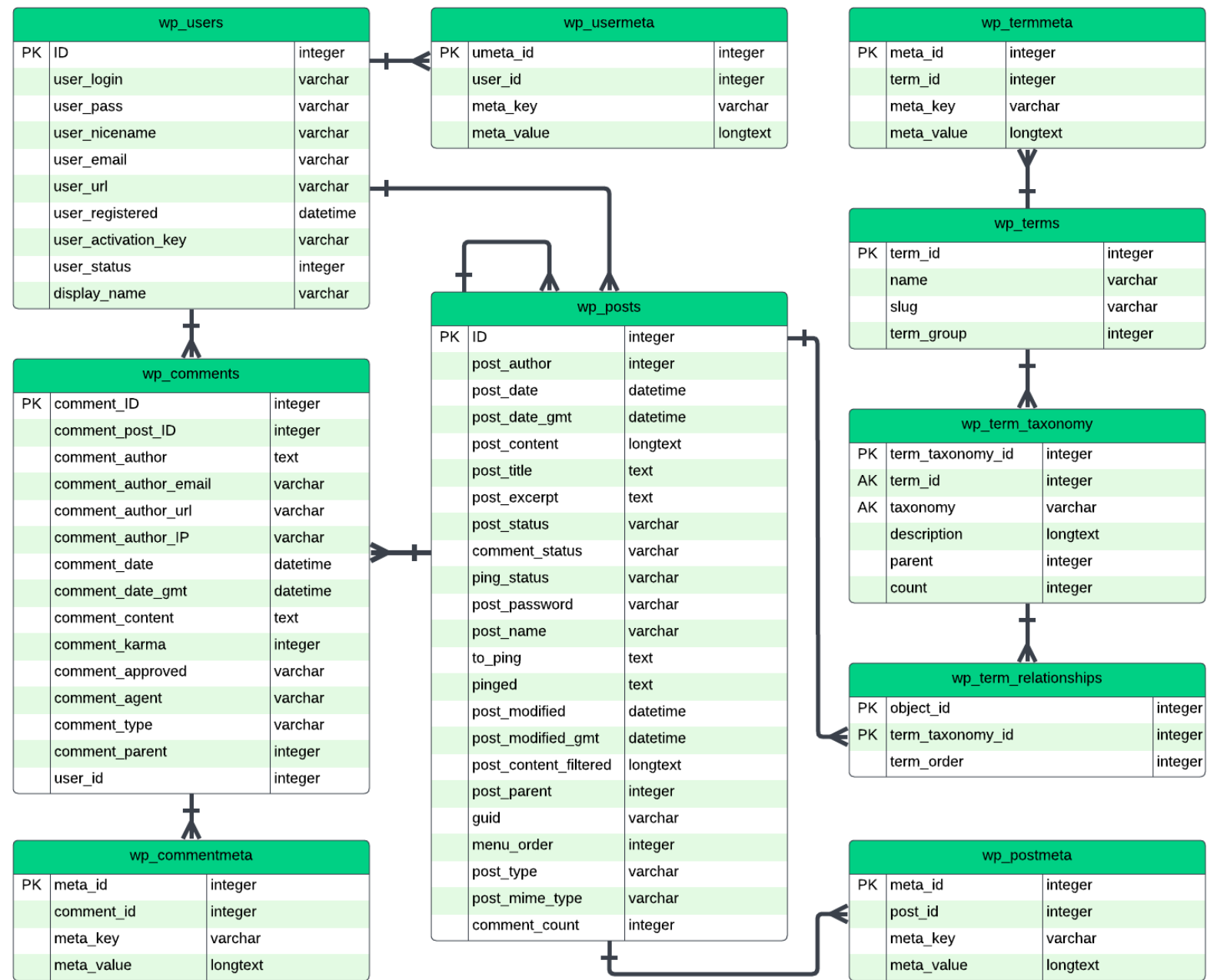
facebook  
newsroom



SONY MUSIC



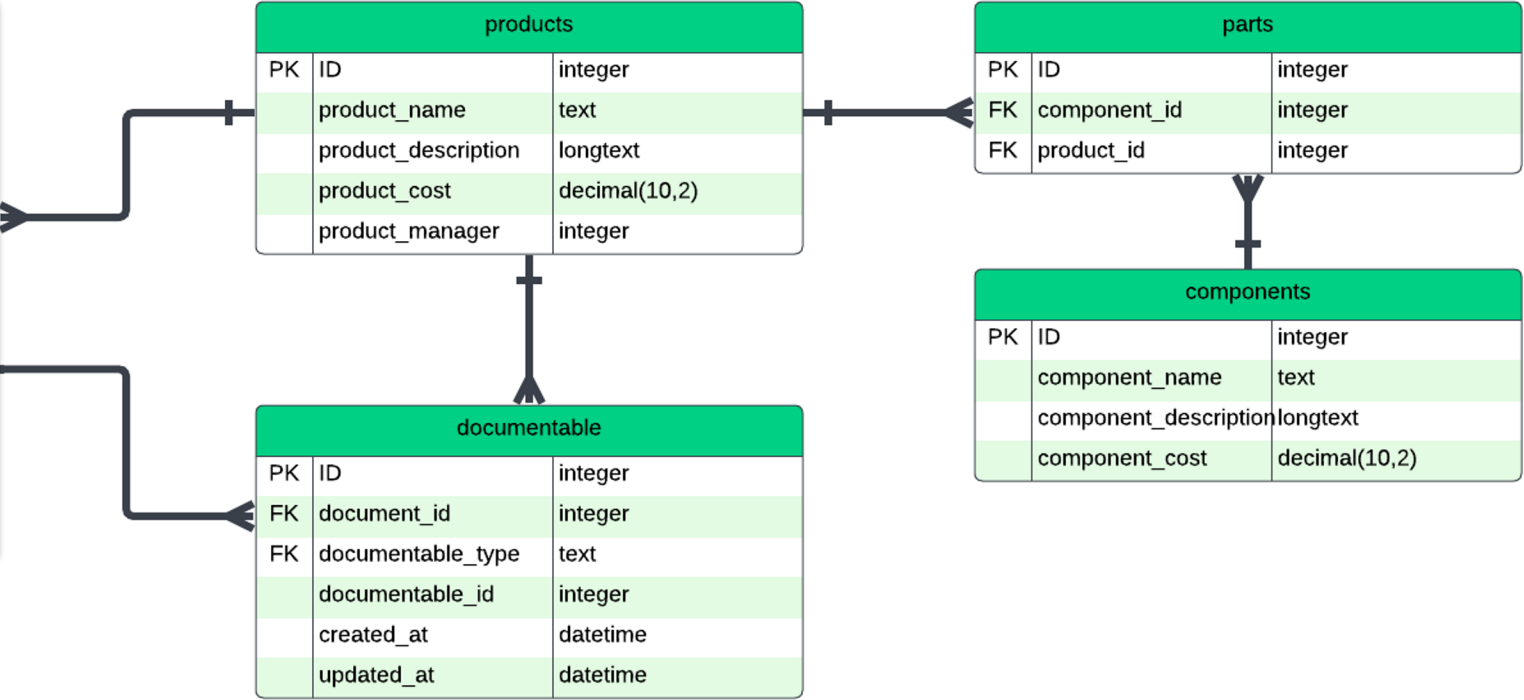
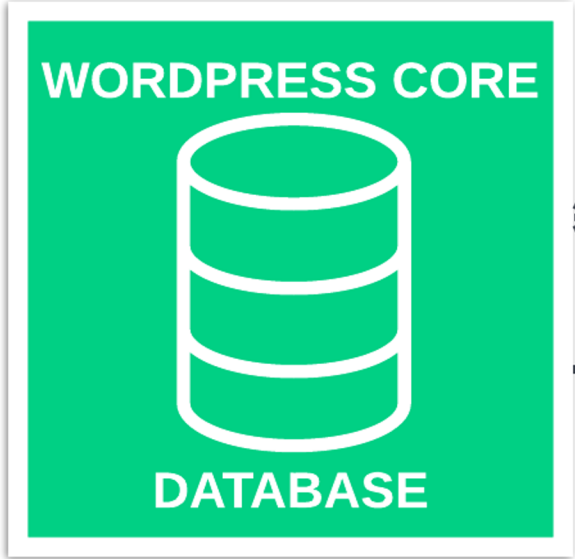
# Expanding the Database



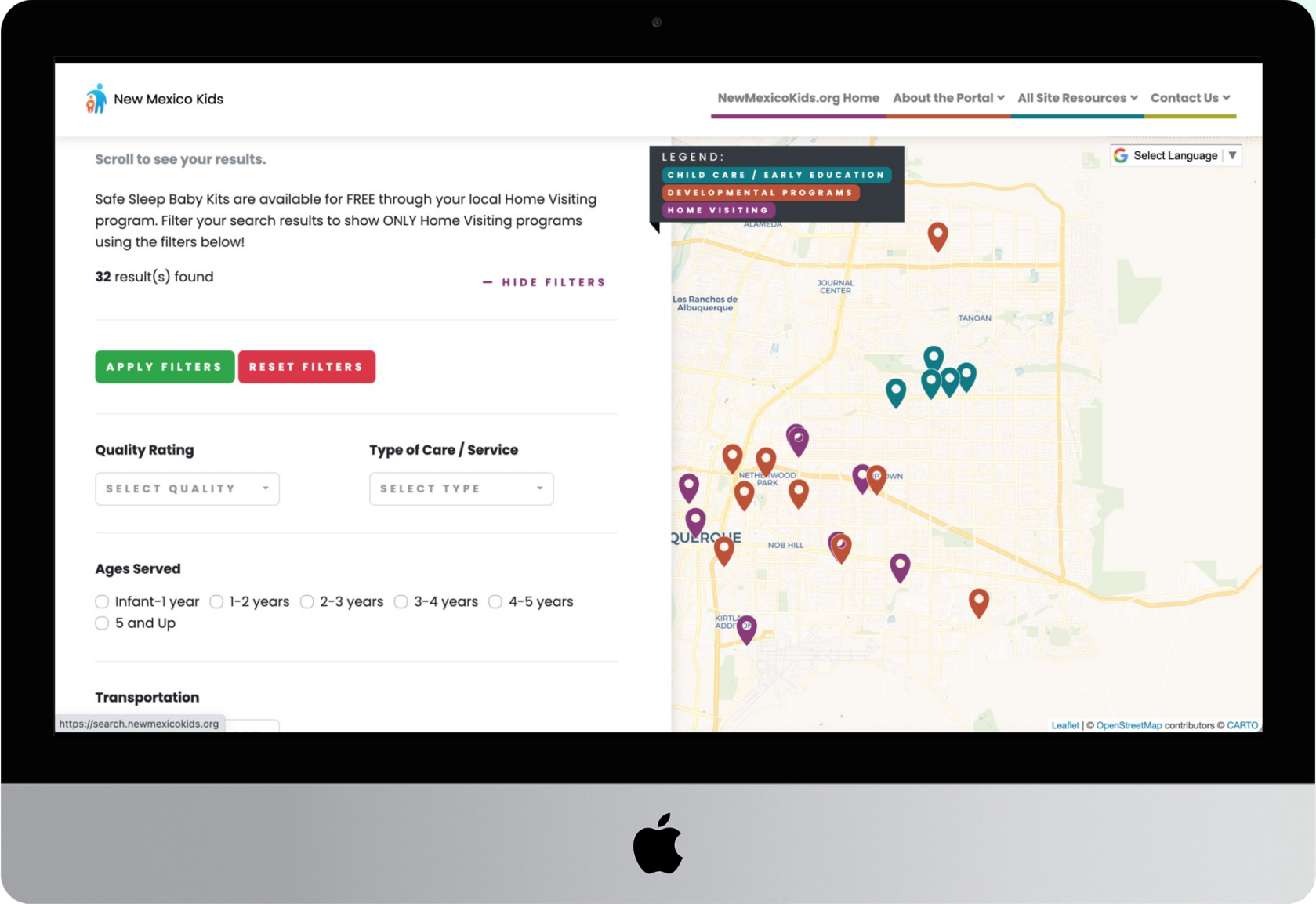
# Expanding the Database



# Expanding the Database



# Real-World Example



# *Thank You!*

Twitter: [@garrettmassey](https://twitter.com/garrettmassey)

Email: [contact@garrettmassey.net](mailto:contact@garrettmassey.net)  
[garrettmassey@unm.edu](mailto:garrettmassey@unm.edu)

LinkedIn: [linkedin.com/in/garrettmassey95/](https://www.linkedin.com/in/garrettmassey95/)

Web: [www.garrettmassey.net](http://www.garrettmassey.net)

*Evaluation*

