

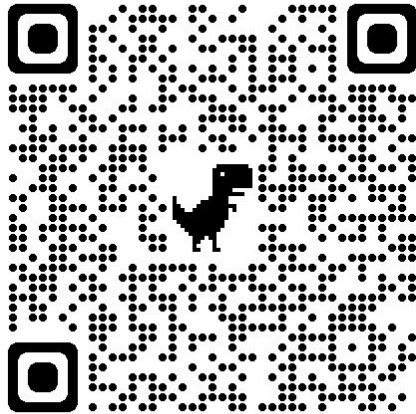
# SQL

## Middling into the Awesome



Thank you for attending our 2024 conference!  
Please do the following:

- 1) Log in to the conference website (easyregpro) by scanning the qr code.
- 2) Enter your confirmation number (found on your badge or in email)
- 3) Click on “My Schedule”. If you are not scheduled for this class, please “modify schedule”. This will allow you to provide feedback for the presenter and give us a count of attendees.



WIFI Password : GSIS2024

# Ward Weatherford

30+ Years Technology Experience

- Product Development
- Software Engineering
- Project Management
- Customization
- Integration
- Database Design



# What is RESA

- It's Not Candy
- **R**egional **E**ducational **S**ervice **A**gency
- Every School District in GA is a member
- 16 RESAs
- Support 180 School Districts

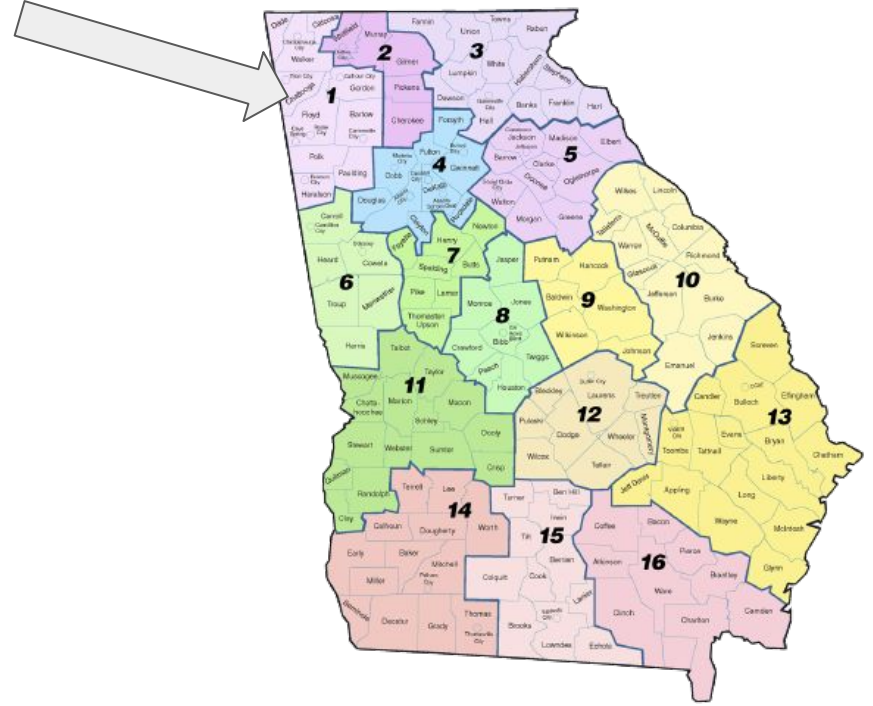


## Required to provide these service areas

- Research and Planning
- Professional Development
- Curriculum and Instruction
- Assessment and Evaluation
- Technology
- Health
- School Improvement

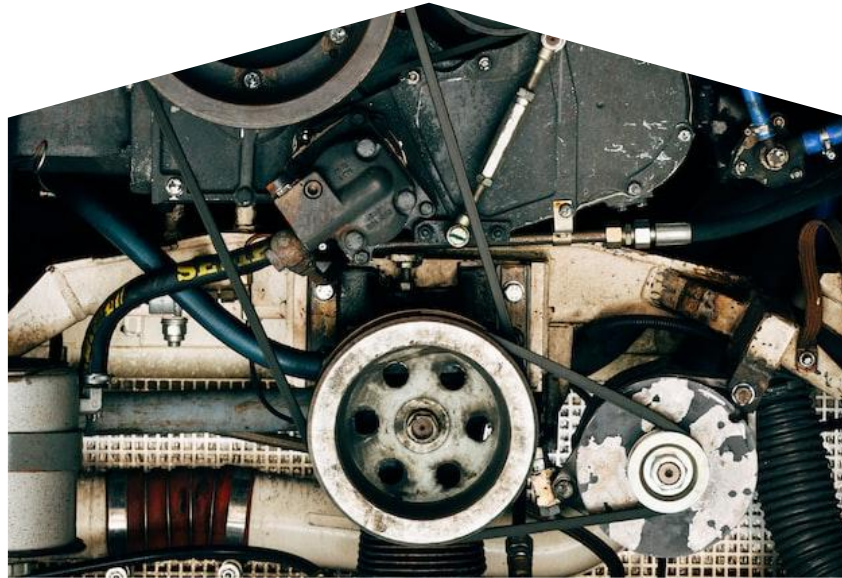
# Northwest RESA

- 17 Member School Districts
- 25 Employees
- + GNETS Staffing



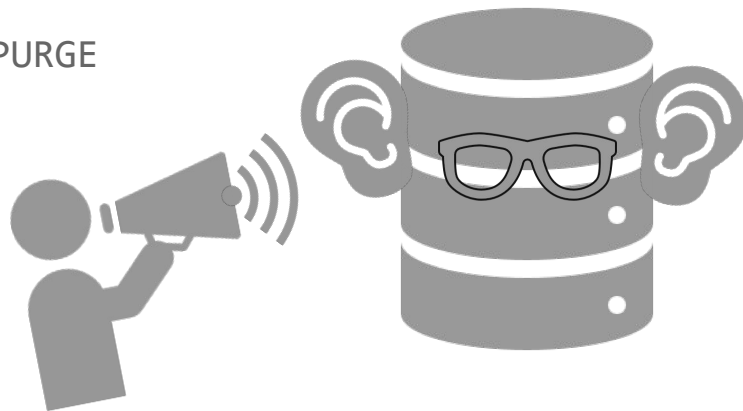
# Whatsit

## Review-Style



# Types of SQL Statements

- Data Retrieval
  - SELECT
- Data Manipulation Language
  - INSERT, UPDATE, DELETE, MERGE, LOCK, CALL
- Data Definition Language
  - ALTER, CREATE, DROP, RENAME, TRUNCATE, PURGE
- Data Control Language
  - GRANT, REVOKE
- Transaction Control Language
  - COMMIT, ROLLBACK, SAVEPOINT



# What Answer Are You Looking For?

- Load Up the Wayback Machine
  - Writing Composition Strategies
  - Who, What, Where, When, Why, How
- Determine the Target
- Get that Data Dictionary



# Anatomy of a SELECT Statement

- SELECT
  - Get it all with a splat (\*)
  - List fields
  - Expressions
- FROM
  - Tables
  - Views
  - CTE
- Optional
  - WHERE Clause
    - Filters Results
  - ORDER BY Clause
    - You guessed it. Orders the results
  - GROUP BY Clause
    - Provides grouping for aggregate expressions like SUM, AVG...
  - HAVING Clause
    - Filters groups

# SQL Statement

```
SELECT column1, column2 FROM table_name;
```

```
SELECT * FROM table_name
```

# The Set Up

# Our Sample Data

## Students

Fictional listing of students

- ID
- Name Fields
- Date of Birth
- State Identifier
- Gender

```
CREATE TABLE student (  
    id INT PRIMARY KEY,  
    first_name VARCHAR(50) NOT NULL,  
    middle_name VARCHAR(50),  
    last_name VARCHAR(50) NOT NULL,  
    dob DATE NOT NULL,  
    state_id BIGINT NOT NULL,  
    gender VARCHAR(10) NOT NULL  
);
```

# Our Sample Data

## School Years

- ID
- Name Fields
- First Day of School
- Last Day of School

```
CREATE TABLE school_year (  
    id INT PRIMARY KEY,  
    name VARCHAR(100) NOT NULL,  
    short_name VARCHAR(10) NOT NULL,  
    first_day DATE NOT NULL,  
    last_day DATE NOT NULL  
);
```

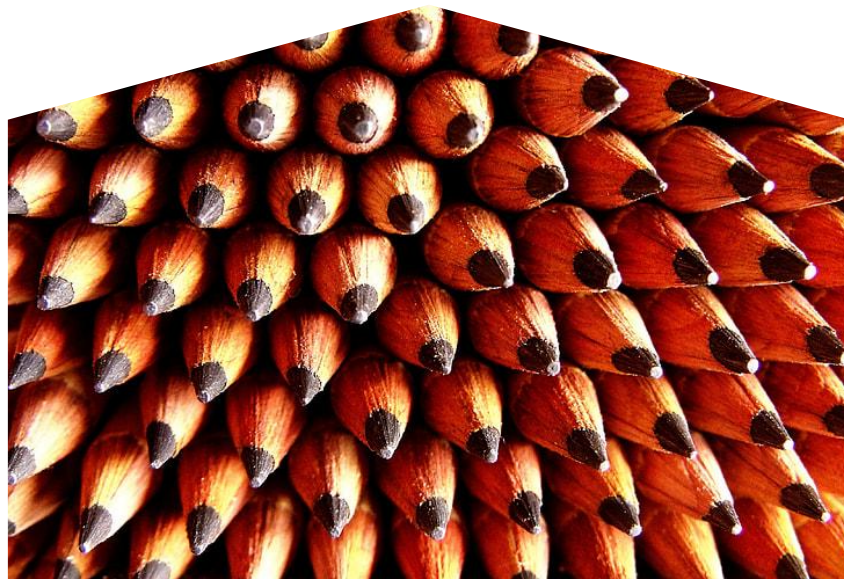
# Our Sample Data

## Enrollment

- ID
- Grade Level
- Reference Student
- Reference School Year

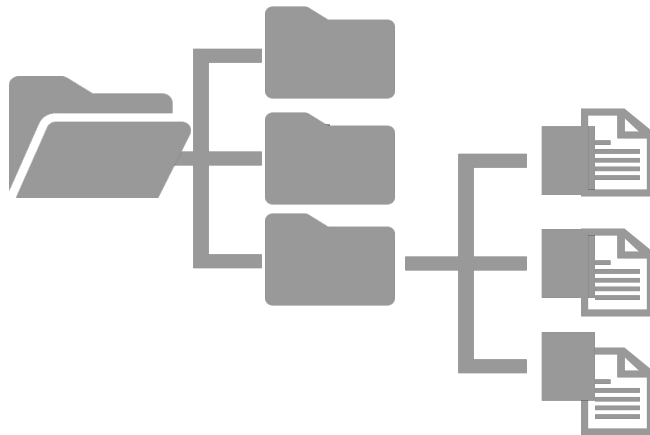
```
CREATE TABLE student_school_year (  
    id INT PRIMARY KEY,  
    student_id INT NOT NULL,  
    school_year_id INT NOT NULL,  
    grade_level INT NOT NULL,  
    FOREIGN KEY (student_id)  
        REFERENCES student(id),  
    FOREIGN KEY (school_year_id)  
        REFERENCES school_year(id)  
);
```

# TIPS



# Organize Your Work

- Save Your Work
- Build a Folder System
- Text Search the Folders



## PowerShell

```
Get-ChildItem *.sql -Recurse | Select-String "login" -List | Select Path
```

## Bash

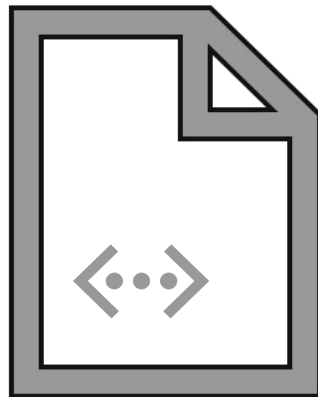
```
grep -r "login" *.sql | awk -F: '{print $1}'
```



# Comments

## Comment Your Queries

- Helps Others
- Complicated Code
- Poorly Named Fields
- Undocumented/Poorly Documented Schema



```
/* This is a block comment. Everything between the  
slash and splat isn't processed by the interpreter */  
select column1 -- Everything after the double dash is ignored  
from table_name
```

# Resources

- Search Engines
- Data Dictionary
- <https://www.w3schools.com/sql>
- <https://livesql.oracle.com>
- <https://sqlfiddle.com>
- <https://stackoverflow.com>

