INTRO TO SQL

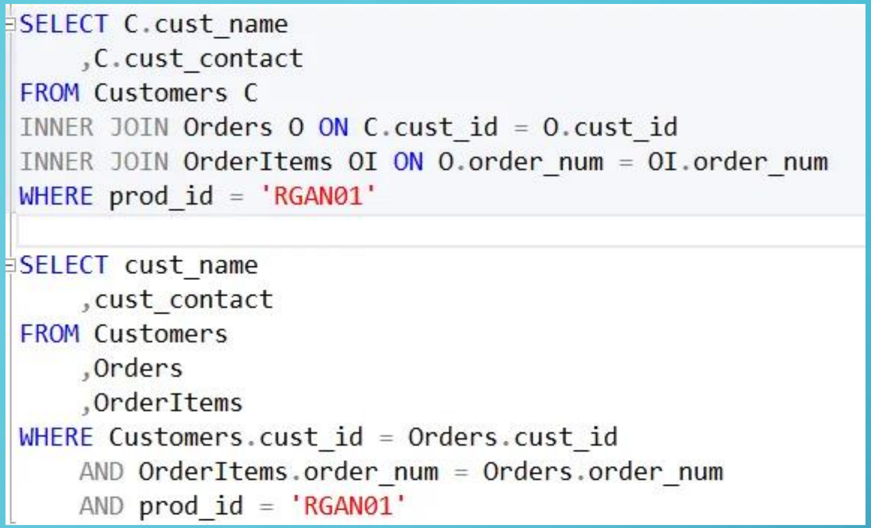
SUMMARY

WHAT IS SQL

APPLICATIONS

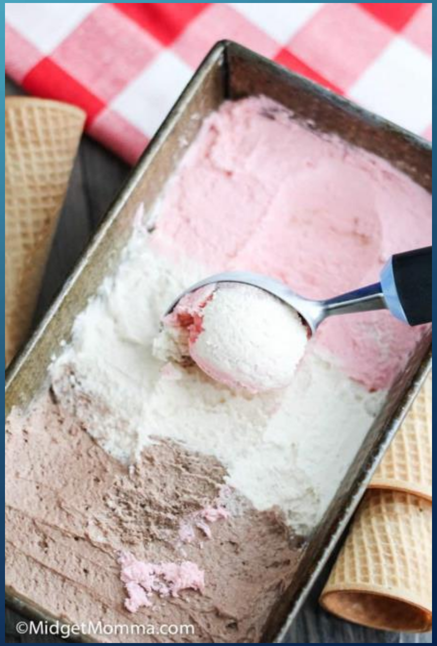
PRACTICAL

WHAT IS SQL?



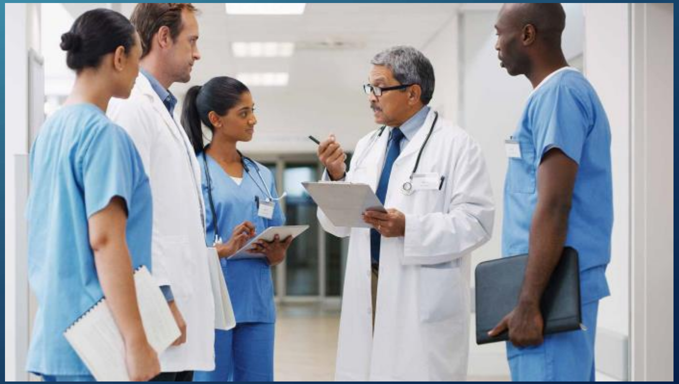
```
SELECT C.cust_name
      ,C.cust_contact
FROM Customers C
INNER JOIN Orders O ON C.cust_id = O.cust_id
INNER JOIN OrderItems OI ON O.order_num = OI.order_num
WHERE prod_id = 'RGAN01'

SELECT cust_name
      ,cust_contact
FROM Customers
      ,Orders
      ,OrderItems
WHERE Customers.cust_id = Orders.cust_id
    AND OrderItems.order_num = Orders.order_num
    AND prod_id = 'RGAN01'
```

- Structured Query Language
- Standard language for storing, manipulating, and retrieving data in relational databases
- Extremely common
- Many flavors (MySQL, SQL Server, PostgreSQL, etc)
    - Slight differences



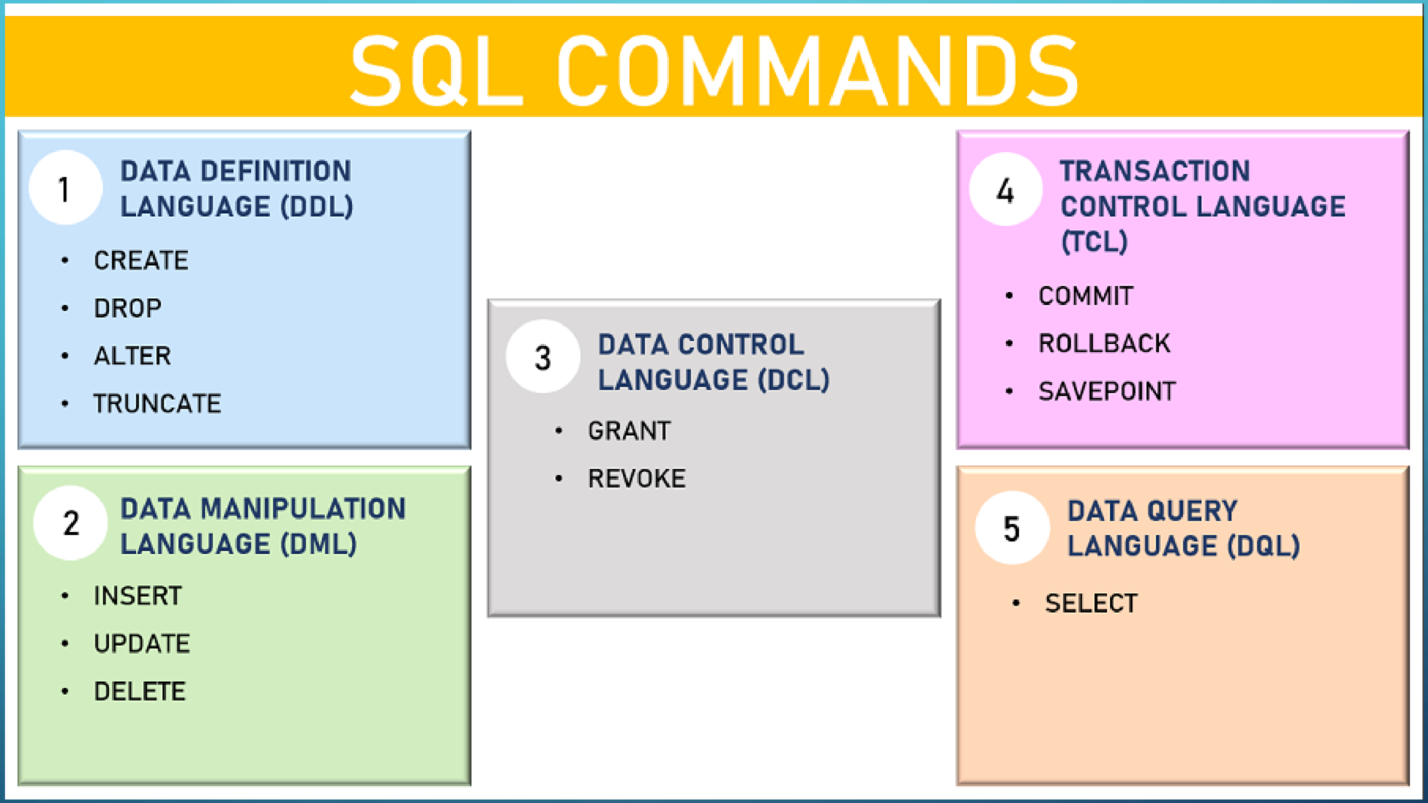
WHY USE SQL?

- Business
  - Make informed decisions from sales data to customer behavior
- Tech & Web
  - Powering web applications, e-commerce sites, tech platforms
- Finance
  - Analyzing financial data, trends, and market behaviors.
- Healthcare
  - Managing patient data, medical records, and research.
- Everyday Apps
  - From your favorite food delivery app to social media platforms



HOW DO I USE SQL?

COMMAND TYPES



SQL COMMANDS

1 DATA DEFINITION LANGUAGE (DDL)

- CREATE
- DROP
- ALTER
- TRUNCATE

2 DATA MANIPULATION LANGUAGE (DML)

- INSERT
- UPDATE
- DELETE

3 DATA CONTROL LANGUAGE (DCL)

- GRANT
- REVOKE

4 TRANSACTION CONTROL LANGUAGE (TCL)

- COMMIT
- ROLLBACK
- SAVEPOINT

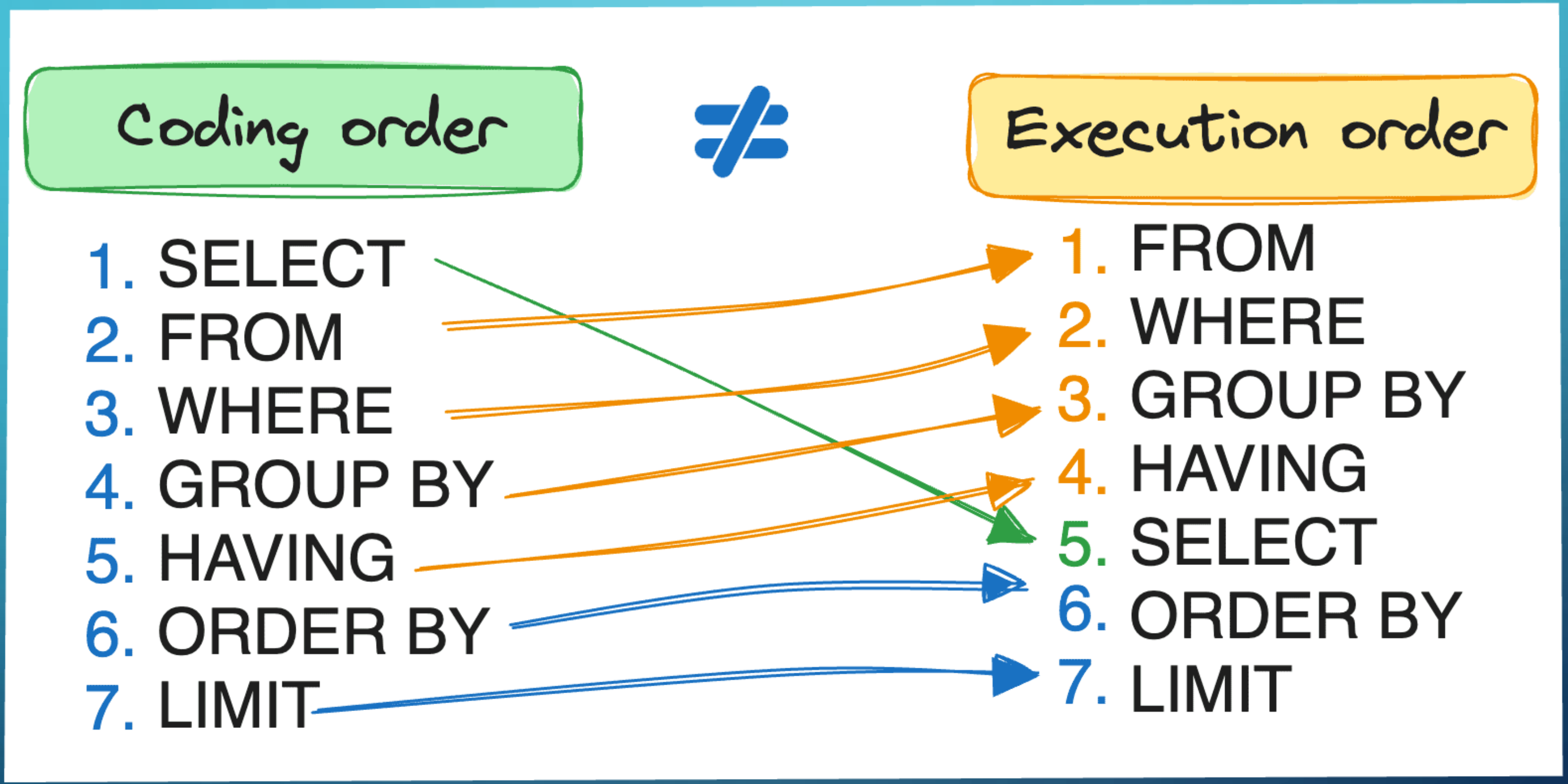
5 DATA QUERY LANGUAGE (DQL)

- SELECT

COMMON COMMANDS

- SELECT: select data from database
- FROM: specify table being pulled from
- WHERE: filter query to match condition
- AS: rename column/table with alias
- INNER JOIN/JOIN: combine rows from 2+ tables with matching values
- ON: column on which to JOIN the tables
- GROUP BY: group data into logical sets
- ORDER BY: set order of result (ASC default, DESC reverses order)

- AND: combines conditions; all must be met
- OR: combines conditions; one must be met
- HAVING: same as WHERE, but filters groups
- DISTINCT: only SELECTs rows with distinct values of a column
- LIMIT: limit rows returned (different in other flavors)
- COUNT: count number of rows
- SUM: return sum of column
- AVG: return average of column



Coding order ≠ Execution order

Coding order

1. SELECT
2. FROM
3. WHERE
4. GROUP BY
5. HAVING
6. ORDER BY
7. LIMIT

Execution order

1. FROM
2. WHERE
3. GROUP BY
4. HAVING
5. SELECT
6. ORDER BY
7. LIMIT

INSTALLING MARIADB

1. Go to https://mariadb.org/ qr code
2. Click download, and then scroll down and click download
3. Follow the wizard instructions
4. Create a password for the root user
5. Open HeidiSQL (is installed alongside MariaDB)

THE DATABASE

- Go to the Workshop Repository on GitHub
- [insert QR code on this slide]/website