INTRO TO SQL

SUMMARY

WHAT IS SQL

APPLICATIONS

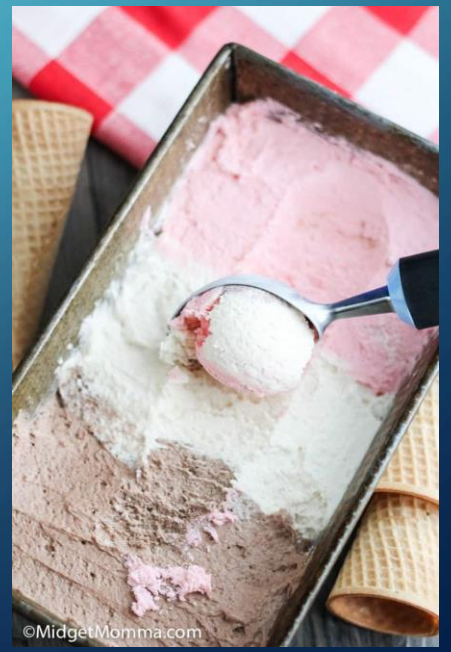
PRACTICAL

WHAT IS SQL?

```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

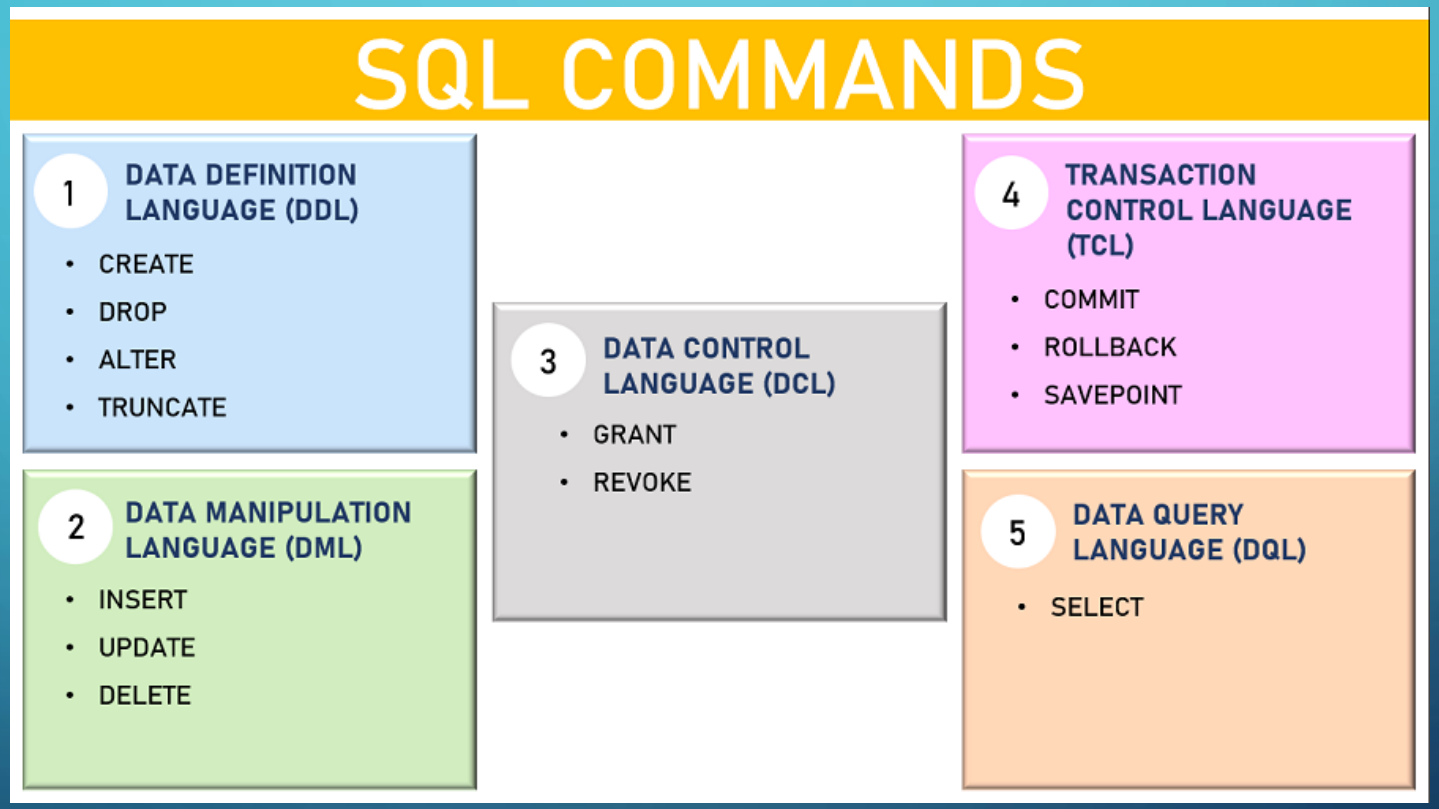


WHY USE SQL?

- 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?

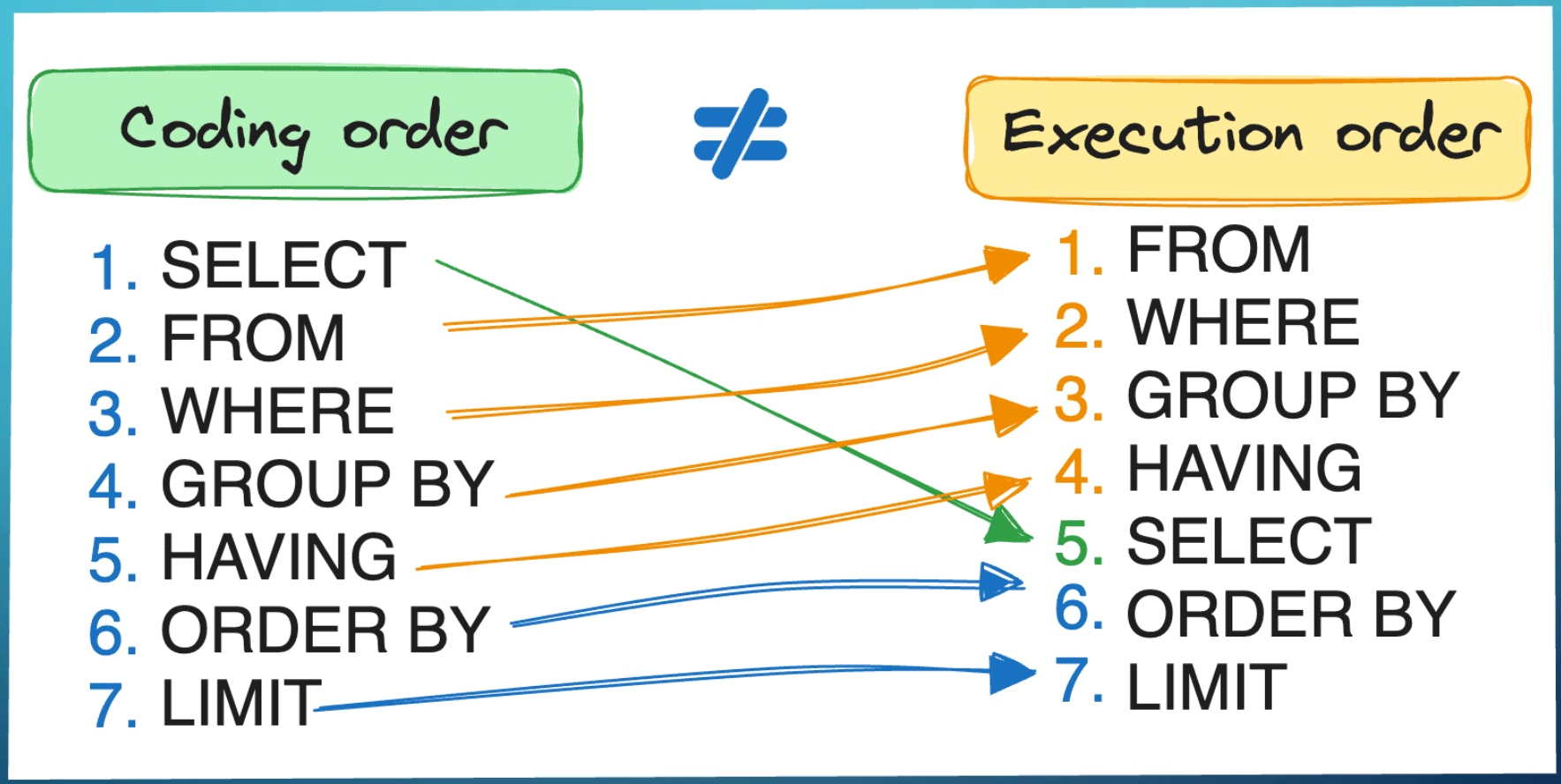
COMMAND TYPES



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

INSTALLATION

1. Download the workshop materials from https://github.com/matheusmaldaner/WorkshopArchive
2. Go to https://mariadb.org/ and click Download.
3. Scroll down and click Download.
4. Wait for download, then open the wizard.
5. Click Next, then accept the license agreement, then click Next two more times.
6. Select a password for the root (keep this stored somewhere!!!), then click Next two more times.
7. Click Install, wait for the installation, then click Finish.

USAGE

1. Open HeidiSQL (there should be a shortcut on your computer for it now).
2. Click Open (bottom left), then type your password (the username should be "root").
3. Click on File (top left), then Load SQL File, and select world.sql
4. Repeat for sqlworkshopproblems.sql, and answer the questions provided.
5. For self-paced learners, refer to the workshop materials and exercises provided in the GitHub repository.