

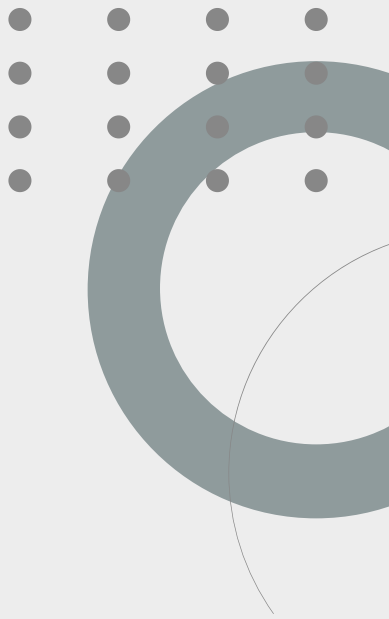


DATABASES

Young_Devs

- 
- *Lindiwe Somana*
 - *Lihle Manitshana*
 - *Andrea Goodall*
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INTRODUCTION TO SQL



Core Concepts :

- Structured query language (SQL) is a programming language for storing and processing information in a relational database.
- A relational database stores information in tabular form, with rows and columns representing different data attributes and the various relationships between the data values.
- You can use SQL statements to store, update, remove, search, and retrieve information from the database. You can also use SQL to maintain and optimize database performance.



WHAT IS A DATABASE?

A database is a storage system that has a collection of data. Relational databases store data in a table form that can be easily retrieved, managed, and updated.

A database is usually controlled by a Database Management System.

Popular DB's:



SQL COMMANDS

DDL

Data Definition Language
• CREATE, ALTER, DROP

DML

Data Manipulation Language
• SELECT, INSERT, UPDATE, DELETE

DCL

Data Control Language
• GRANT, REVOKE

DATA TYPES, ARITHMETIC & MATH OPERATORS

Data Types

- INT
- FLOAT/DOUBLE
- VARCHAR
- DATE

Arithmetic Operators

- + : Addition
- - : Subtraction
- * : Multiplication
- / : Division
- % : Modulo (remainder)

Math Operators

- ABS(): Absolute value
- SQRT(): Square root
- POWER(): Exponentiation
- ROUND(): Round decimal

RELATIONAL VS NON RELATIONAL DATABASES

MySQL

- The data is structured in rows and columns
- Vertical Scaling
- Has a fixed schema

MongoDB

- The data is unstructured and is stored in a JSON like document
- Horizontal scaling
- It is schemaless

DOCUMENTS AND COLLECTIONS

Documents

The process involves creating documents and saving them to a database.

Collections

They store data as documents, with each database allowing multiple collections.



QUERYING IN MONGODB



A

Sorting Data

B

Operators and
Arrays

C

Updating
Documents

D

Updating Arrays

E

Deleting
Documents

F

MongoDB Shell





THANK

YOU