SQL

Structured Query Language

Originally - Structured English Query Language

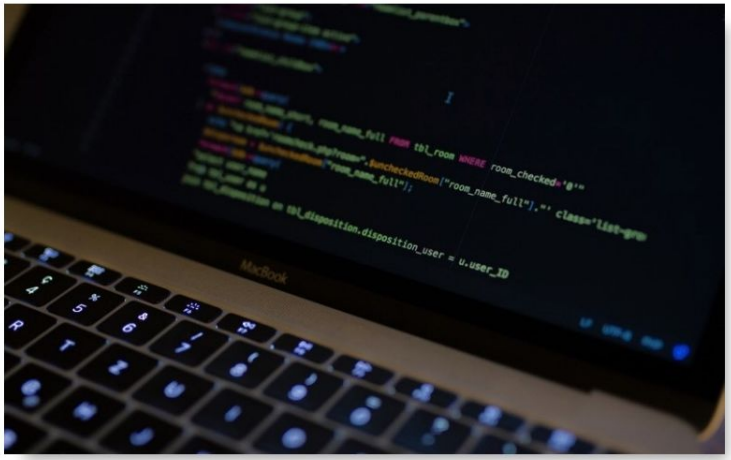
SQL is...

- SQL stands for Structured Query Language
- SQL lets you access and manipulate databases
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987

Why SQL?

Banking

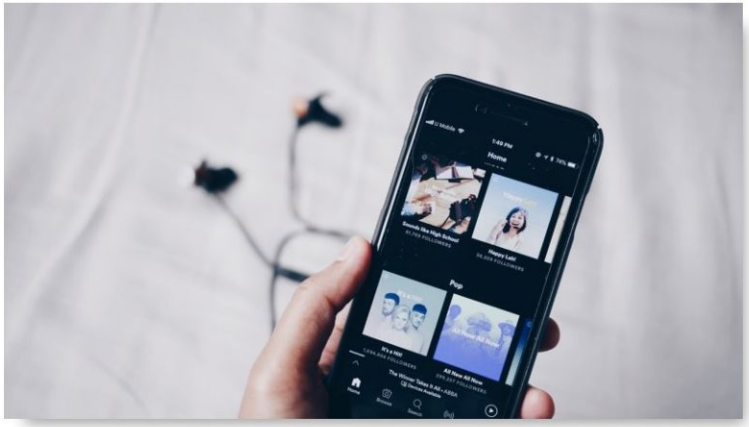
In the finance industry, banking applications and payment processors such as Stripe store and operate data about financial transactions and users. Behind these processes is a complicated database. Moreover, bank database systems have extra security requirements that call for the highest levels of risk compliance in the SQL code used.



Why SQL?

Music

Music applications like Spotify and Pandora also make intensive-use databases. Among other things, databases help these apps to store vast libraries of music files and albums by various artists, operate this data to find what the user is looking for, store the data about users and their preferences, etc.



Why SQL?

Social Media

Social media platforms involve a lot of data processing. Apps like Instagram and Snapchat use SQL to store a user's profile information such as bio and location, to update the app's database when a user creates a new post or shares a photo, and to record messages sent from one user to another so the user can retrieve the messages to read again at a later time.

SQL can...

- execute queries against a database
- retrieve data from a database
- insert records in a database
- update records in a database
- delete records from a database
- create new databases
- create new tables in a database
- create stored procedures in a database
- create views in a database
- set permissions on tables, procedures, and views

SQL Statements

- SELECT - extracts data from a database
- UPDATE - updates data in a database
- DELETE - deletes data from a database
- INSERT INTO - inserts new data into a database
- CREATE DATABASE - creates a new database
- ALTER DATABASE - modifies a database
- CREATE TABLE - creates a new table
- ALTER TABLE - modifies a table
- DROP TABLE - deletes a table
- CREATE INDEX - creates an index (search key)
- DROP INDEX - deletes an index

A Table

SQL interacts with and modifies tables.

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

SQL - Language

To query a database we use the SQL language

Is SQL a Programming Language?

- Yes, SQL is a language. It offers looping, logic directives, variables, and so on. However, it's not a language in the same sense as, say, Java or C++.
- SQL is considered a fourth-generation language (4GL), whereas Java and C++ are third-generation languages (3GLs).
- SQL may not be a language on par with Java or C#, but it is a language nonetheless.
- According to W3Schools: "SQL is a standard language for storing, manipulating and retrieving data in databases."

A Query...

Some SQL both creating, inserting and selecting data from tables.

```sql
-- 1. Analyse Contact form as group. Reduce to 3 input fields, reduce and add a css/php based spam stopper.
-- *** SQL docs

-- SQL Code To Create a Table

-- SQL Code Insert Values Into A Table
CREATE TABLE groceries (id INTEGER PRIMARY KEY, name TEXT, quantity INTEGER, aisle INTEGER);

-- Insert Data Into Table
INSERT INTO groceries VALUES (1, "Bananas", 4, 7);
INSERT INTO groceries VALUES(2, "Peanut Butter", 1, 2);
INSERT INTO groceries VALUES(3, "Dark Chocolate Bars", 2, 2);
INSERT INTO groceries VALUES(4, "Ice cream", 1, 12);
INSERT INTO groceries VALUES(5, "Cherries", 6, 2);
INSERT INTO groceries VALUES(6, "Chocolate syrup", 1, 4);

-- 2. ACTIVITY
-- *** Create a db with with 5 rows and at least 3 columns for your favourite books, food, movies, games

-- Select Name column from groceries
SELECT name FROM groceries;
-- Select all items from Groceries
SELECT * FROM groceries;
-- Using order
SELECT * FROM groceries ORDER BY aisle;
-- Using while to check all rows 6 or greater
SELECT * FROM groceries WHERE aisle > 5 ORDER BY aisle;
```