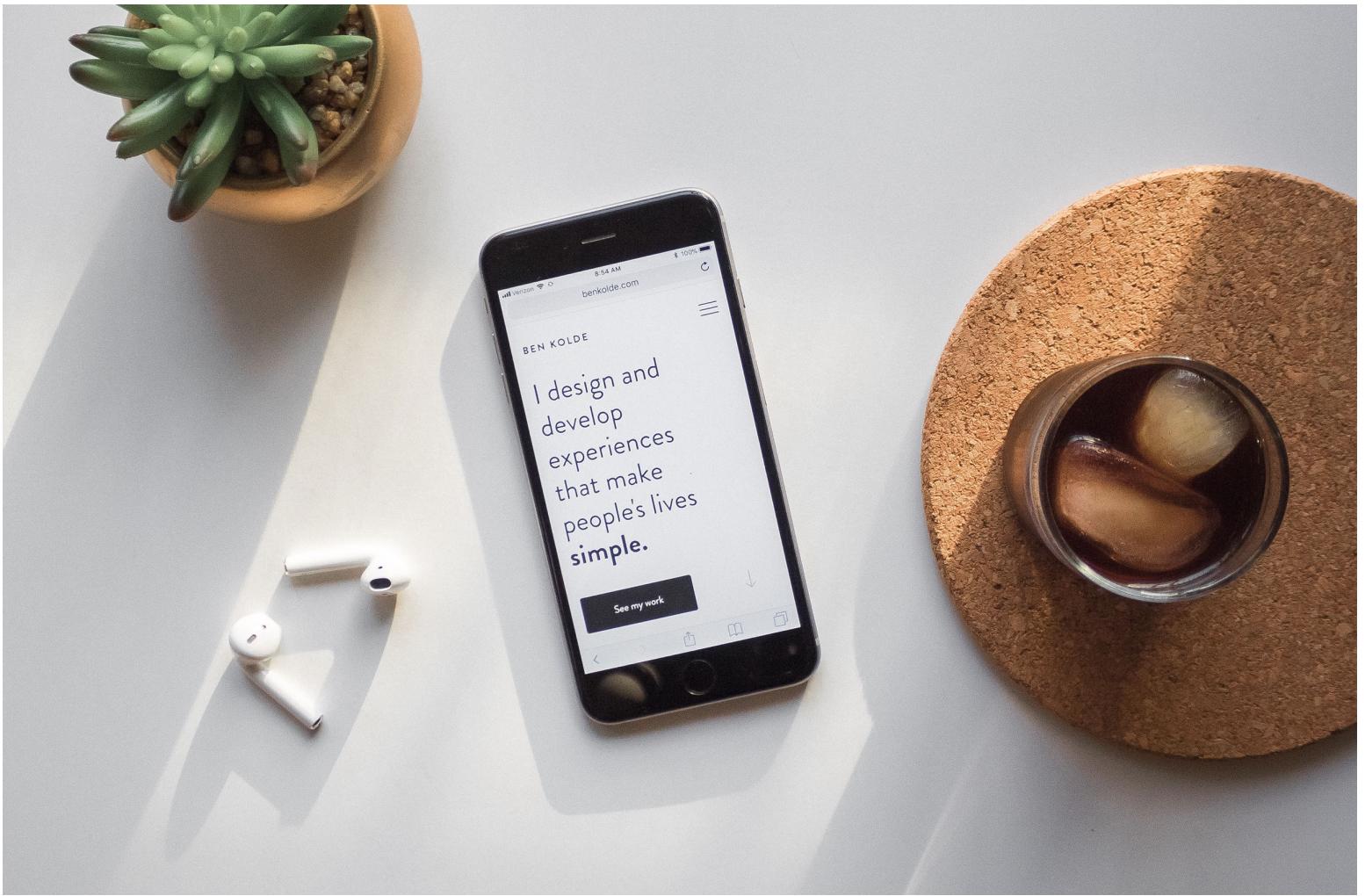


SQL vs NoSQL

The background consists of a dense, multi-colored grid of text, appearing as if it's scrolling or being viewed through a lens that blurs the details. The colors are varied, including shades of blue, green, yellow, red, orange, and purple. The text is composed of what looks like raw code or pseudocode, with words like 'function', 'this', 'on', 'for', 'if', and 'else' visible, though they lack context due to the blur. This visual metaphor represents the underlying complexity and variety of data structures and operations that both SQL and NoSQL databases handle.

By Roland Lupi on 10/3/19

<https://spark.adobe.com/page/Rn99MLUVNBp5U/>



Relational Vs. Non-Relational

SQL:

Relational Database management system

Vertically Scalable

Fixed or predefined Schema

Not suitable for hierarchical data storage

Can be used for complex queries

NoSQL:

Distributed Database management system

Horizontally Scalable

Dynamic Schema

Best suitable for hierarchical data storage

Not good for complex queries

Three NoSQL Twitter Features

Research showed Twitter only uses NoSQL for data processing, storing and gathering.

Twitter Features How To

Research showed Twitter only uses NoSQL for data processing, storing and gathering.

Twitter Features Pros/Cons

Research showed Twitter only uses NoSQL for data processing, storing and gathering.

One Relational Facebook Feature

The log in process from Facebook can definitely be a SQL feature. All the user's log in information not only needs to be stored for future viewing but if the user opts into "save my login info" then it needs to be adjusted in the database that the user wouldn't need password login.

Facebook Feature How To

When a user creates an account with Facebook all of their data will get stored in the SQL database. Their name, age, location, passwords and interest will all be assigned to a certain userId. If the user allows to have their log in information saved then their clearance level might be changed from "requirePassword" to "noPassword".

Facebook Feature Pros/Cons

- **Pro:** This ability to have your information saved and even skip the log in process creates a speedy user experience without having to rewrite all of your information.
- **Con:** Your information is stored in a database that if ever hacked is easily accessible.

Four NoSQL Database Types

- **Key-Value:** Uses a hash table in which there is a unique key and a pointer to a particular piece of data.
- **Document-Based:** Similar to key-value and the only difference is that the values stored provide some structure and encoding of the managed information.
- **Column-Based:** The data is stored in certain cells that are grouped in columns of information rather than as rows of data.
- **Graph-Based:** Doesn't utilize the rigid format of SQL or tables and columns instead it uses a flexible graphical representation.

Five NoSQL Databases

- **MongoDB:** "This open source database written in C++ comes with storage that is document oriented."

- **Redis**: "This system will help you in running atomic operations like incrementing value present in a hash, set intersection computation, string appending, difference and union."
- **Couch DB**: "Couch DB Couch DB is an Apache project and a really powerful database for JSON based web applications."
- **RavenDB**: "This DB is document oriented and schema-free such as you simply have to dump in your objects into it. It provides extremely flexible and fast queries."
- **MemcacheDB**: "It is a persistent storage engine which is meant for data storage and retrieval in a fast and reliable manner."

Five NoSQL Databases Pros/Cons

- **MongoDB - Pro**: Highly Scalable and agile **Con**: Free database that's open sourced
- **Redis - Pro**: Compatable with most programming languages **Con**: Free database that's open sourced
- **Couch DB - Pro**: Very handy for web applications **Con**: Free database that's open sourced
- **RavenDB - Pro**: Easily extensional with many bundles **Con**: Free database that's open sourced
- **MemcacheDB - Pro**: Supports replication and transactions **Con**: Free database that's open

sourced

Weather App (Two NoSQL Solutions)

- **MongoDb:** Able to quickly filter thousands of users from a larger pool of candidates. It proved to be the best option and it's able to deliver the information within seconds.
- **Cassandra:** Loses some of the parsing and joining abilities that SQL databases offer but provides the ability to scale across multiple servers so they can host very large information sets and respond to queries promptly.

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