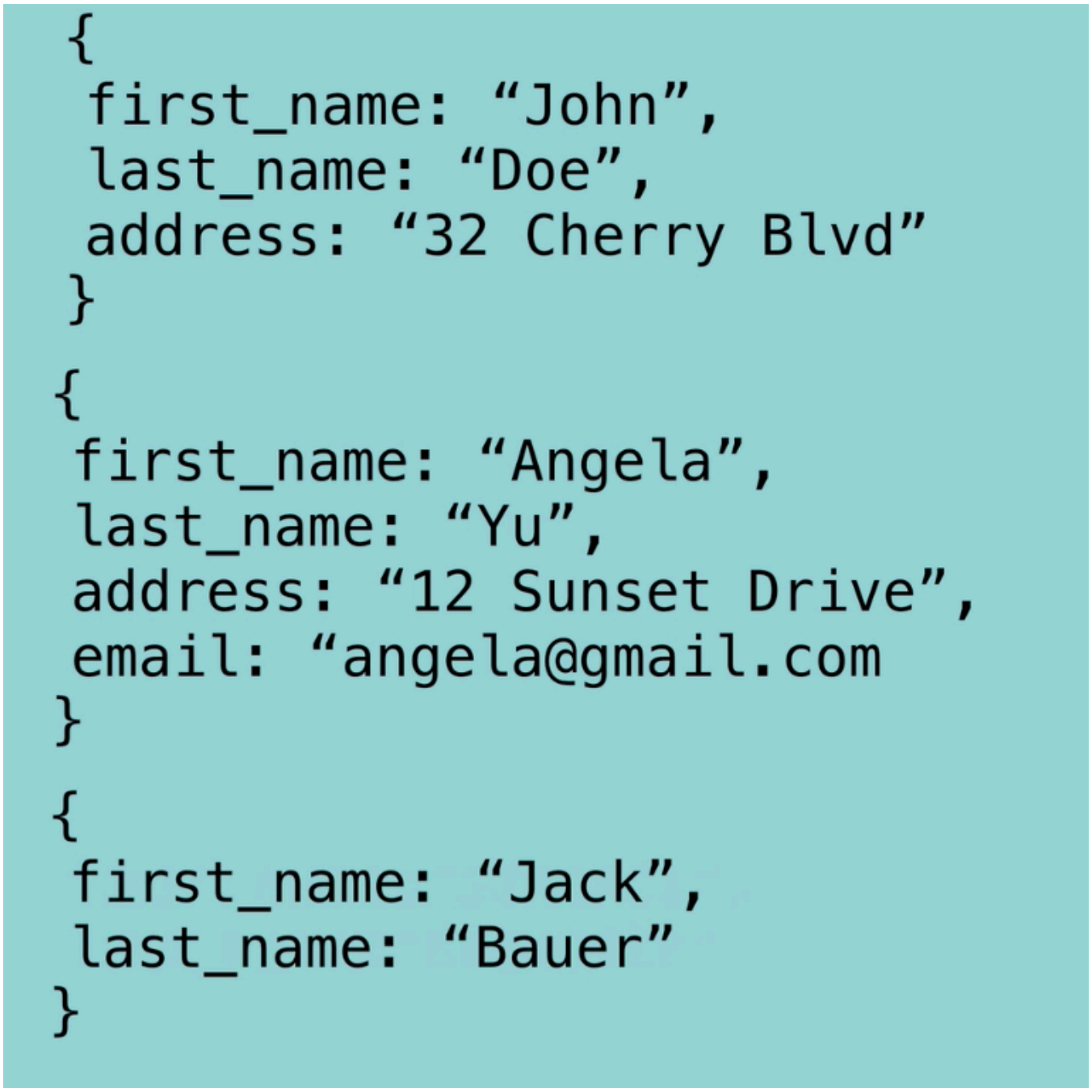
Database

SQL vs NoSQL
(SQL => structured query language, NoSQL => Not only structured query language)
SQL => MySQL, PostgreSQL
NoSQL => MongoDB, redis

The difference is in structure
A SQL database will group your data into table. SQL database is however very inflexible.
You might have a gap in your database, you will have "NULL". Which could be dangerous
SQL is old, but reliable

Customers			
First Name	**Last Name**	**Address**	**Email**
John	Doe	32 Cherry Blvd	Null
Angela	Yu	12 Sunset Drive	angela@gmail.com
Jack	Bauer	Null	Null

But NoSQL for example MongoDB, the same data will be stored as JSON object.
If one object has extra parameters/structure, it's okay.
NoSQL is flex-able, able to adapt. But NoSQL, could be hard to implement relationship.



So SQL is relational, but NOSQL is non-relational

Scalability!
One of the reason to use NOSQL over SQL is Scalability!
Like excel, SQL could lag/be slower once you have more and more data (you scale up vertically). It could no longer handle it.
Some company has so much data, like google. Even the largest computer would struggle, and unstable.

But MongoDB, store data in smaller docs where each data is a row of JSON. This allow distributed system. Data could be distributed to different system. You scale horizontally.

The table is the main compare:

MySQL	MongoDB
More Mature	Shiny and New
Table Structure	Document Structure
Requires a Schema	More Flexible to Changes
Great with Relationships	Not Great with Complex Relationships
Scales Vertically	Horizontally Scalable