What is a Database?

Database */ˈdadəˌbās,ˈdādəˌbās/*: a structured set of data held in a computer, especially one that is accessible in various ways (Oxford Languages)

Examples

User account information
Username, password, profile

data.gov datasets
Census, demographics, energy, climate

Music streaming service
Artists, albums, songs, relations between them

Types of databases

Flat file   Relational (SQL)   Schemaless   Key-Value Store
                                             (NoSQL)

Resembles a spreadsheet
Data stored in rows and columns with few constraints
e.g. Filemaker

Types of databases

Flat file

Relational (SQL)

Schemaless (NoSQL)

Key-Value Store

Composed of tables and references
Describes entities and relationships between them
Data is well-structured
e.g. MySQL, PostgreSQL, MariaDB

Types of databases

Flat file   Relational (SQL)   Schemaless (NoSQL)   Key-Value Store

Composed of arbitrary objects
Objects can be grouped into collections
e.g. MongoDB, Cassandra, DynamoDB

Types of databases

Flat file   Relational (SQL)   Schemaless (NoSQL)   Key-Value Store

Composed of key/value pairs
Programming interface like Python dictionary
Key is usually a string, but can be any supported data type
e.g. Redis, RocksDB, react-native-async-storage

SQL with Python

nucamp

PostgreSQL