

NoSQL – Document database ElasticSearch

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What is a document?

- XML, JSON
- To represent anything, we only need an array and a map

JSON example

```
{  
  "meno" : "John Smith",  
  "knows" : ["python", "ruby", "sql"],  
  "addresses" : [  
    {"street": "On Tap 42", "town": "Bratislava", "type": "home"},  
    {"street": "Recursive 42", "type": "work", "comment": "schedule a  
meeting before scheduling a meeting please"}  
  ]  
}
```

Document databases

- Allows me to store a document (JSON) under a key (id)
 - Flexible JSON structure
- The JSON is not a “black box” for the database
 - Not just a value, they see inside
 - Search by attributes & values inside of JSON
- Atomicity on a level of document

And yet, they are still NoSQL databases

- Distributed
 - Sharding, replication as a natural feature
 - Master-master, master-slave
- Mostly optimistic concurrency/locking
 - Document versioning

Implementations

- CouchDB, MongoDB, ElasticSearch, Postgres9.4+ (no easy sharding though)

ES demo