Storing Stuff

Software Architecture

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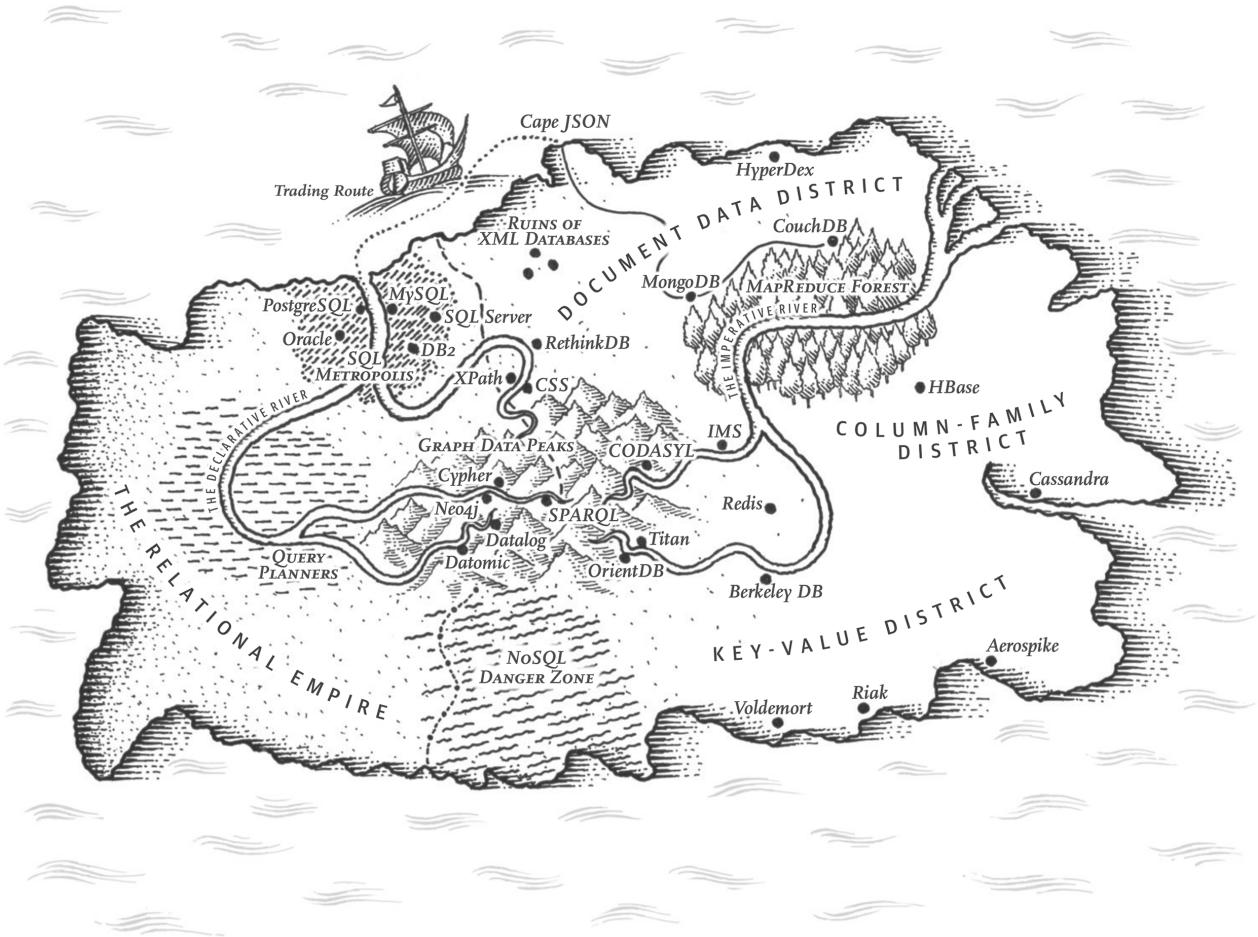

Figure 1: A map of data storage techniques from Designing Data-Intensive Applications [1].

1 This Week

This week our goal is to:

- explore the various techniques developers use to store data; and
- look at the storage options implementing these techniques on the AWS platform.

2 Introduction

Unfortunately, to build interesting software we often need to store and use data. The storage of data introduces a number of challenges to designing, creating, and maintaining our software. However, not all

data storage techniques are created equal; the choice of data storage model can have a profound impact on our software's complexity and maintainability. In this practical, we want to take a superficial exploration our island of data storage models. For a more in-depth treatment of data storage models that is outside the scope of this course, see the *Designing Data-Intensive Applications* book [1].

3 Relational Storage

- Roll your own box.
- Amazon RDS.
- Amazon Aurora.

3.1 ORM

Just mentioning the relational-object mismatch.

3.2 Wide-Column Storage

- Amazon Keyspaces (for Apache Cassandra)

4 Key-Value Storage

- Roll your own box.
- Amazon DynamoDB.
- Amazon ElastiCache.
- Amazon MemoryDB for Redis.

4.1 Time Series Storage

- Amazon Timestream.

5 Document Storage

- Roll your own.
- Amazon DocumentDB.

6 Graph Storage

- Amazon Neptune.

References

[1] M. Kleppmann, *Designing Data-Intensive Applications: The big ideas behind reliable, scalable, and maintainable systems*. O'Reilly Media, Inc., March 2017.