

# NOSQL DATABASES

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Answer the questions below by reading indicated sections of the paper "NoSQL Databases" that can be downloaded from:

<http://www.christof-strauch.de/nosql dbs.pdf>

## Chapter 2

1. What are some of the reasons that led to the development of NoSQL databases? Write your answer in bullet points and explain each point briefly.

## Chapter 3

1. Explain the three parts of CAP briefly. What is the CAP theorem?

2. For large scale data, for example the data available on the internet, which of the three CAP properties are more important? What is BASE approach and how is it different from ACID approach? Write your answers in bullet points, as far as possible.

3. What are some techniques for partitioning data that cannot be stored on a single machine?

## Chapter 5

1. Read about MongoDB and understand and briefly explain the following terms:

- Collections
- Documents

2. Understand the following query operations using MongoDB. No need for any written answer.

- Selection
- Projection
- Result processing
- Insert
- Update
- Delete
- Aggregation

## Chapter 6

1. Read section 6.1 and write down in points format some of the key features of Bigtable. How has it proved advantageous at Google?

2. Read about the data model of Bigtable and answer the following questions:

- A value in Bigtable is addressed by triplet of \_\_\_\_\_.
- Rows are stored in \_\_\_\_\_ order and are \_\_\_\_\_ (statically / dynamically) partitioned.
- Number of columns is \_\_\_\_\_ (limited / unlimited) and are grouped into units called \_\_\_\_\_.
- Timestamps are used to \_\_\_\_\_.

3. Understand HBase, its properties and applications. No written answer required.

4. Write down in points format some key features of Cassandra and its data model.