SESSION 2: MONGODB

Assignment



**1. What were the big differences in hardware over the last few decades that MongoDB attempted to address?**

1. Parallelism of cores
2. Parallelism of servers
3. Quantum computers
4. Faster clock speeds
5. More memory

**Ans**.

1. Parallelism of cores
2. Parallelism of servers

**2. When scaling out horizontally (adding more servers to contain your data), what are the problems that arise as you go from, say, 1 commodity server to a few dozen?**

1. Any one server is likelier to fail per given unit of time
2. The servers must communicate with one another eating up the network

bandwidth

1. The need for redundancy increases as the likelihood of some failure in the system per unit of time increases
2. Hardware cost per server is likely to increase

**Ans.**

b) servers must communicate with one another eating up the network bandwidth

c) The need for redundancy increases as the likelihood of some failure in the system per unit of time increases

**3. What causes significant problems for SQL when you attempt to scale horizontally (to multiple servers)?**

1. Joins
2. Queries
3. Transactions
4. Inserts
5. Indexes

**Ans.**

1. Joins
2. Transactions

**4. What are some advantages of representing our data using a JSON-like format?**

1. JSON presents a flexible and concise framework for specifying queries as well as storing records
2. The JSON syntax is similar to that of common data structures used in many programming languages and is, therefore, familiar to developers
3. JSON is language independent
4. JSON is optimized for use with JavaScript

**Ans.**

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**5. How many data types are there in JSON?**

1. 1 (just strings)
2. 2
3. 4
4. 6

**Ans.**

1. 6

**6. Why do we represent our data as BSON rather than JSON in the system?**

1. Fast machine scanability
2. Human readability
3. Stronger typing (and more types) than JSON

**Ans.**

1. Fast machine scanability

c) Stronger typing (and more types) than JSON

**7. For a typical client (for example, a Python client) that is receiving the results of a query in BSON, would we convert from BSON to JSON to the client's native data structures (for example, nested dictionaries and lists in Python), or would we convert from BSON straight to those native data structures?**

1. BSON -> Native data structures
2. BSON -> JSON -> Native data structures

**Ans.**

1. BSON -> Native data structures

**8. By default, which database does the mongoDB shell connect to?**

1. test
2. localhost
3. mongo
4. default

**Ans.**

1. test