Worksheet 11 – CIS 3530

In context with NoSQL Databases, define in 1 or 2 sentences:

1. Horizontal Scalability

   The ability to add more servers to the database, on a whim, to accomodate higher traffic.

2. Replication

   Replication copies data across multiple servers, so each bit of data can be found in multiple places.

3. Availability

   Availability is a guarantee that every request receives a response about whether it was successful or failed.

4. Eventual Consistency

   The system is eventually consistent–if no updates are made to a given data item for a “long enough” period of time, sometime after hardware and network failures heal, then, eventually, all reads to that item will return the same consistent value.

5. Sharding of files

   Sharding is a partitioning pattern for the NoSQL age. It's a partitioning pattern that places each partition in potentially separate servers—potentially all over the world. This scale out works well for supporting people all over the world accessing different parts of the data set with performance.

6. CAP theorem

   CAP theorem states that we can only achieve at most two out of three guarantees for a database: Consistency, Availability and Partition Tolerance.

7. Document-based NoSQL systems

   A document-oriented database or a NoSQL document store is a modern way to store data in JSON format rather than simple rows and columns. It allows you to express data in its natural form the way it's meant to be.

8. MongoDB

   MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas.