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EMT-678-WS: Big Data Technologies

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**Class 5 - Read the introduction of MongoDB**

 MongoDB is a non-relational database which allows for horizontal scalability. Relational Data-Base Management Systems (RDBMSs) store information using schemas and tables, whereas MongoDB uses a schema-less, document / collection-based layout. Databases are composed of collections which are composed of documents. The schema-less nature of non-relational database means that documents do not need to be similar to one another in order to be stored in the database. This means a variety of data can be stored in a database. MongoDB is also designed to shard, meaning it can be distributed across several systems easily. This design feature was made intentionally within the context to the CAP Theorem, as opposed to the ACID standards of an RDBMS.

MongoDB offers a suite of commands with which a user can access this data. I’ve used some of the most important ones in this short summary below:

// 1. Switch to or create the database

use library

// 2. Create a collection and insert books

db.books.insertMany([

{ title: "1984", author: "George Orwell", year: 1949 },

{ title: "Brave New World", author: "Aldous Huxley", year: 1932 },

{ title: "Fahrenheit 451", author: "Ray Bradbury", year: 1953 }

])

// 3. Find a book by title

db.books.findOne({ title: "1984" })

// 4. Update the year of a book

db.books.updateOne({ title: "1984" }, { $set: { year: 1950 } })

// 5. Delete a book by author

db.books.deleteOne({ author: "Aldous Huxley" })

// 6. Aggregate books by decade

db.books.aggregate([

{ $group: { \_id: { $subtract: [ { $divide: ["$year", 10] }, 0.1 ] }, count: { $sum: 1 } } }

])