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WEB 335: Discussion 6.1

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Indexes

**What are indexes?**

Indexes are data structures used to store some of the collections data in a navigable way.

**Why are indexes used and how are they created in MongoDB?**

“Indexes support the efficient execution of queries in MongoDB. Without indexes, MongoDB must perform a collection scan, i.e. scan every document in a collection, to select those documents that match the query statement. If an appropriate index exists for a query, MongoDB can use the index to limit the number of documents it must inspect” (MongoDB, n.d.). To create an index in MongoDB you should use “db.collection.createIndex()”. If there is already an index with the same specification, the index will not be created. If it is important that indexes are human readable, there is a way to make a custom name such as “inventory” or “sales”.

**What is index cardinality?**

A collection that contains few identifying values is considered low cardinality and the index will return many sets. The higher the cardinality on a field, the better the results.

**What are capped collections? And, when should they be used (provide at least one example of a scenario when they should be used)?**

“Capped collections are fixed-size collections that support high-throughput operations that insert and retrieve documents based on insertion order. Capped collections work in a way similar to circular buffers: once a collection fills its allocated space, it makes room for new documents by overwriting the oldest documents in the collection” (MongoDB, n.d.). A good scenario of when using capped collections are beneficial would be for high-volume systems. Where documents can be entered in a fast and organized way.

**What are sparse indexes?**

“The sparse property of an index ensures that the index only contain entries for documents that have the indexed field. The index skips documents that do not have the indexed field” (MongoDB, n.d.).

Resources:

*Indexes — MongoDB Manual*. (n.d.). Www.mongodb.com. <https://www.mongodb.com/docs/manual/indexes/>

*Performance Best Practices: Indexing | MongoDB Blog*. (n.d.). MongoDB. <https://www.mongodb.com/blog/post/performance-best-practices-indexing>

*Capped Collections — MongoDB Manual*. (n.d.). Www.mongodb.com. https://www.mongodb.com/docs/manual/core/capped-collections/

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