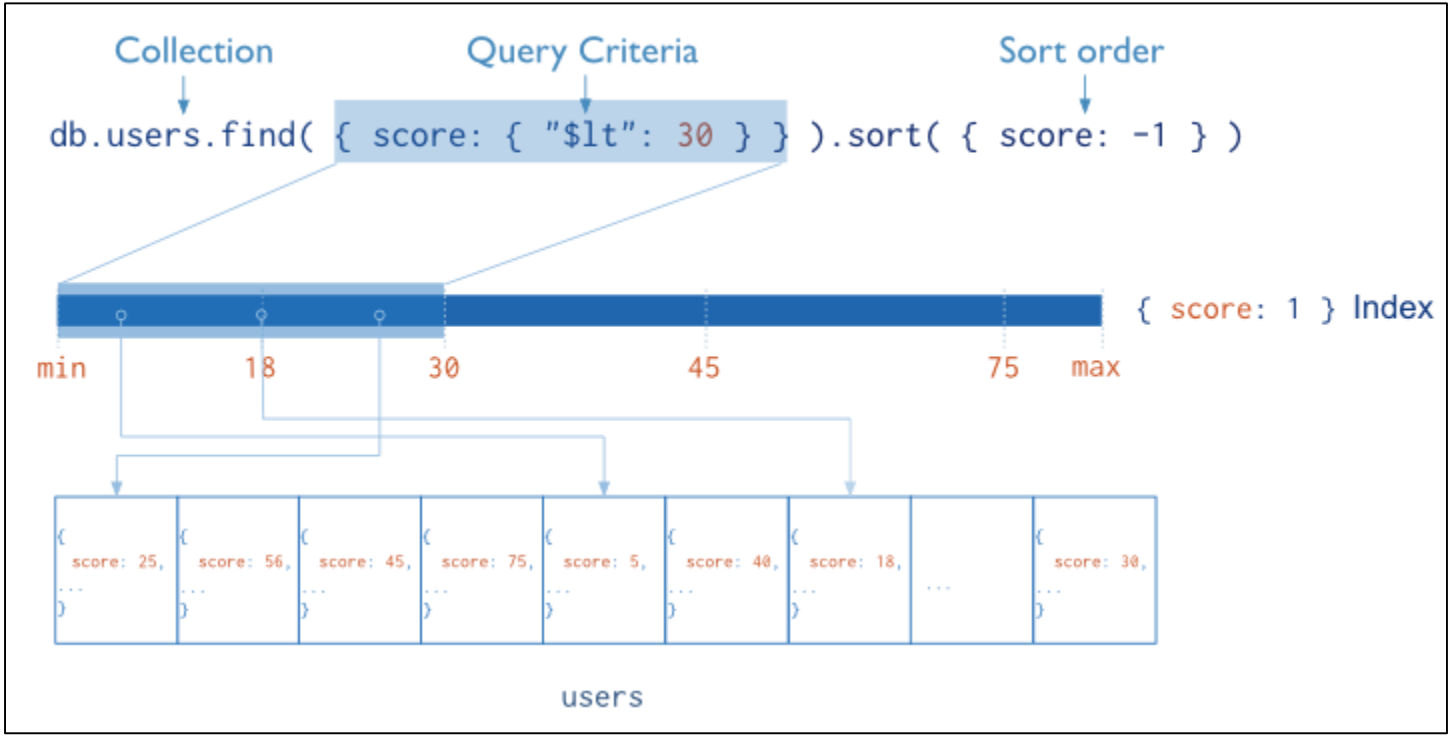
In this lecture, we will discuss…

- Impact of indexes
- Indexes

Indexes - Introduction

- Efficient execution of queries in MongoDB
- Without indexes, MongoDB must perform a collection scan, i.e. scan every document in a collection
- Indexes store a small portion of the collection's data set in an easy to traverse form
- The index stores the value of a specific field or set of fields, ordered by the value of the field

Indexes - Introduction



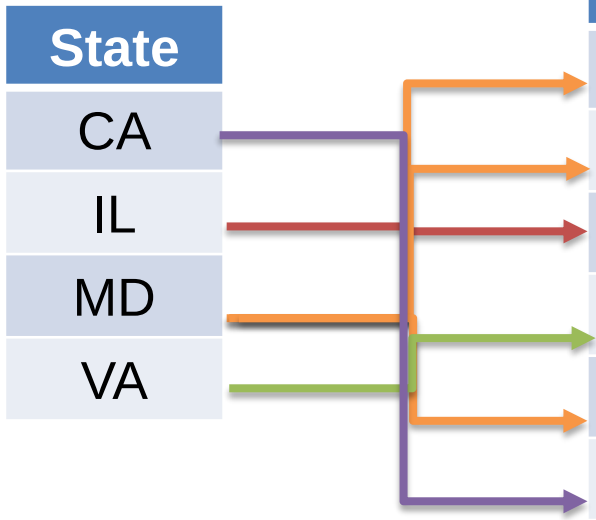
source: mongodb.org

MongoDB – Impact of Indexes

- Data on disk (typically some random order)
- Must scan every document in collection
- Inefficient because process large volume of data

_id	City	State	Loc	Pop
1	Baltimore	MD	10,10	1000
2	Rockville	MD	20,20	1500
3	Chicago	IL	30,30	2000
4	Reston	VA	30, 35	2500
5	Bethesda	MD	10, 10	2200
6	Potomac	MD	45, 45	3300

MongoDB – indexes



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Indexes - Definition

- Special data structures that store a small portion of the collection's data set in an easy to traverse form
- Index has a pointer to document in the collection
- Ordered set that allows searches – uses B-Tree
- Supports indexes with multiple fields (example later)

Summary

- Indexes support the efficient execution of queries in MongoDB
- MongoDB can use the index to limit the number of documents it must inspect.

What's Next?

- Index concepts