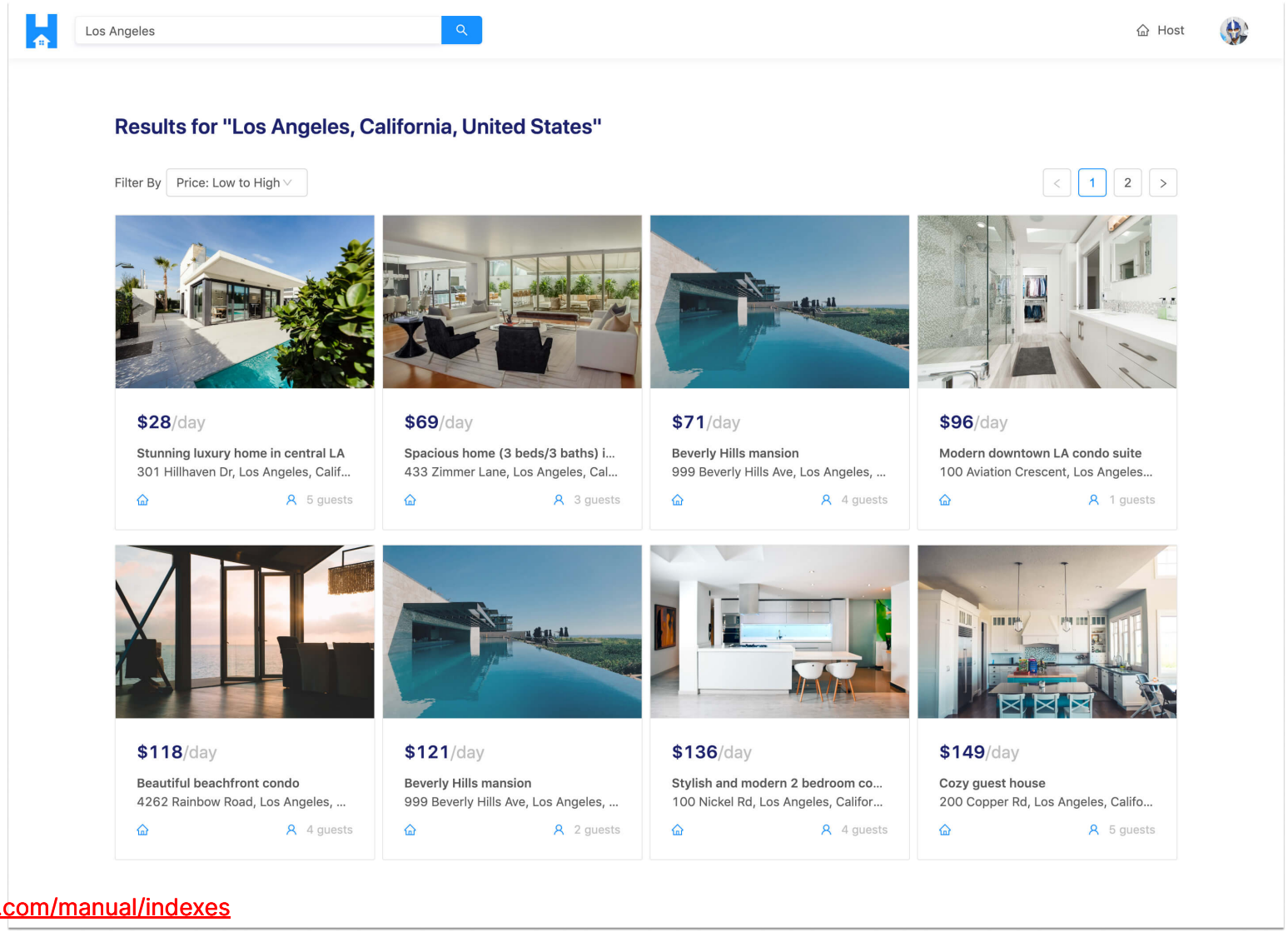
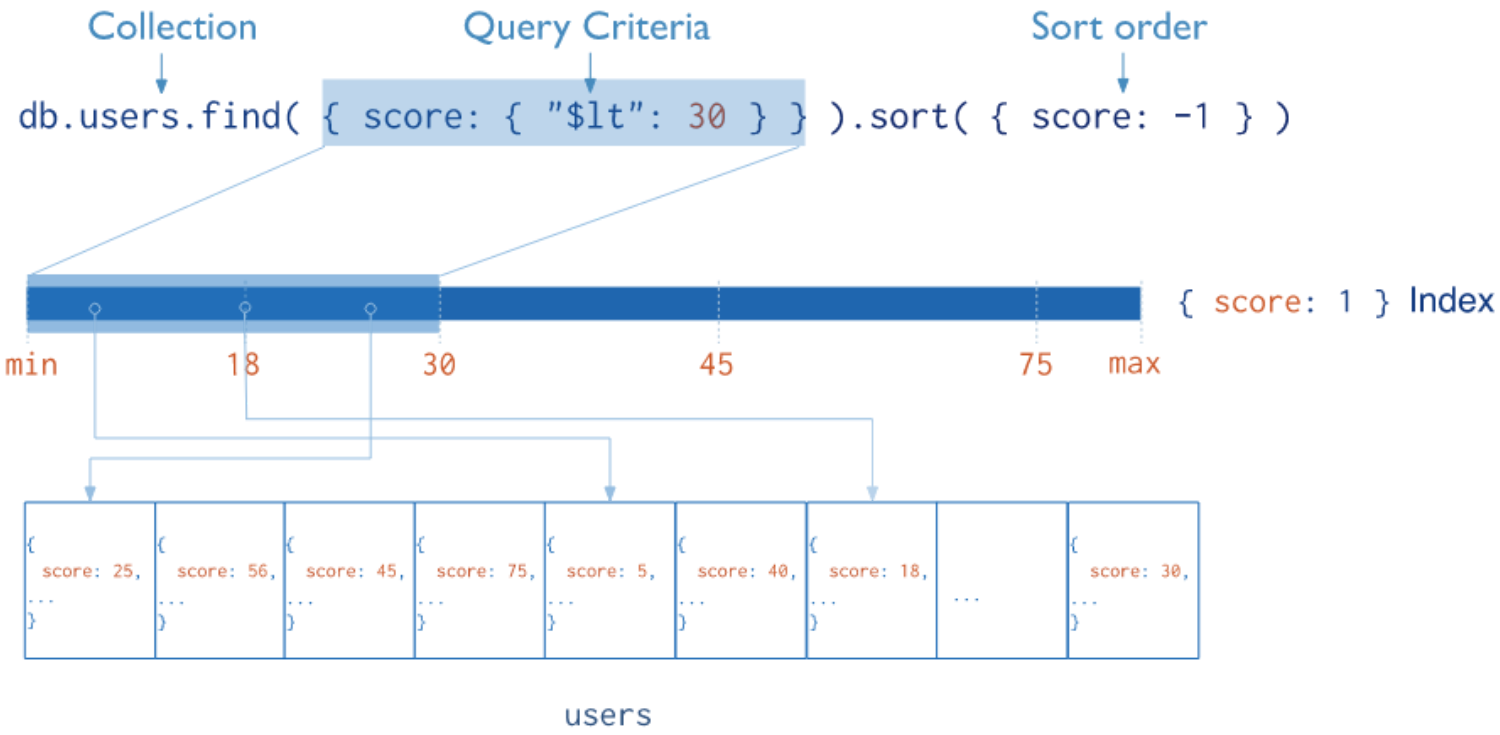


source: https://docs.mongodb.com/manual/indexes

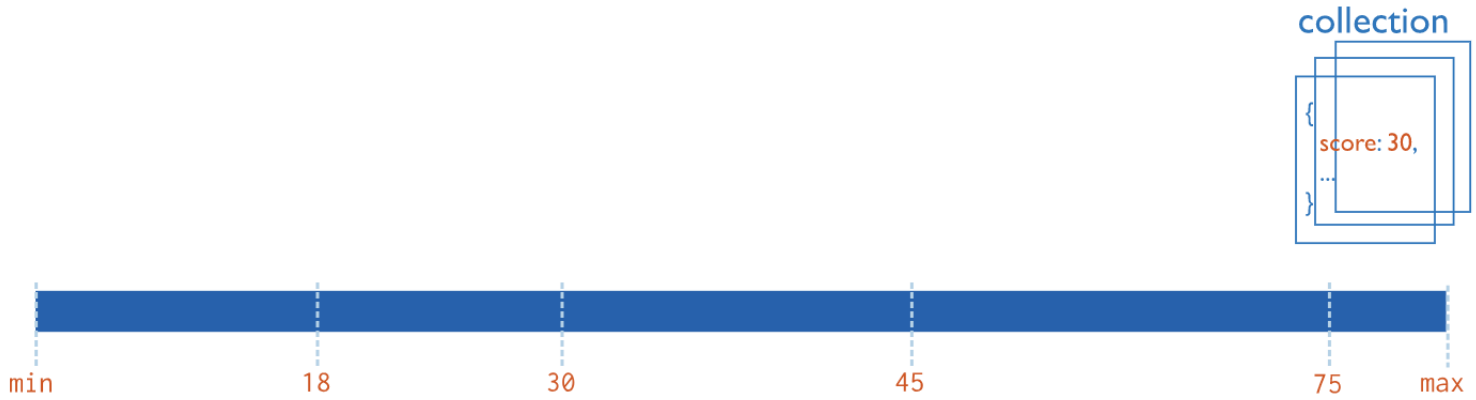
MongoDB **Indexes**

- Without indexes, MongoDB must perform a *collection scan* (i.e. scan for every document in a collection) to select the documents that match a query statement.
- When we define an index for a certain field, we tell the database to create a different data structure to store the values of that field for every document in the collection.
- MongoDB indexes use a **B-tree** data structure.

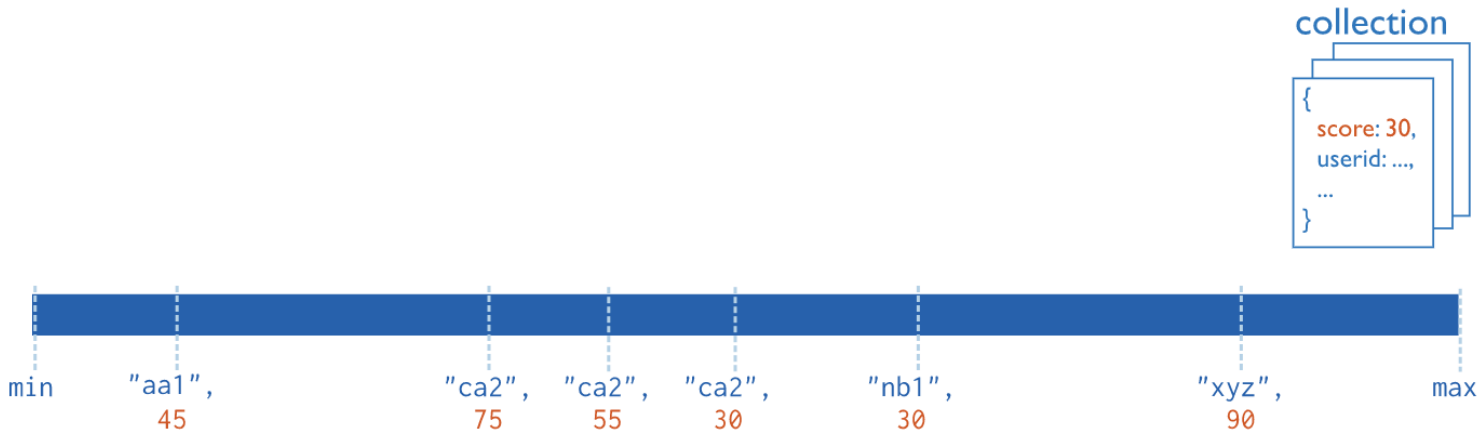

Collection
Query Criteria
Sort order
db.users.find({ score: { "$lt": 30 } }).sort({ score: -1 })
{ score: 1 } Index
min
18
30
45
75
max
{ score: 25, ... }
{ score: 56, ... }
{ score: 45, ... }
{ score: 75, ... }
{ score: 5, ... }
{ score: 40, ... }
{ score: 18, ... }
...
{ score: 30, ... }
users

Default **_id** index

- MongoDB automatically creates a unique index on the **_id** field during the creation of a collection.
- The **_id** index is *unique*.
- MongoDB also offers many other different index types such as **geospatial**, **text**, etc.



{ score: 1 } Index



{ userid: 1, score: -1 } Index

```
// Finding listings in a specific country, admin, and city
let cursor = await db.listings.find({
  country: "Canada",
  admin: "Ontario",
  city: "Toronto"
});
```