Indexes Behind the Scenes

What does `createIndex()` do in detail?

Whilst we can't really see the index, you can think of the index as a simple list of values + pointers to the original document.

Something like this (for the "age" field):

```
(29, "address in memory/ collection a1")
```

```
(30, "address in memory/ collection a2")
```

```
(33, "address in memory/ collection a3")
```

The documents in the collection would be at the "addresses" `a1`, `a2` and `a3`. The order does not have to match the order in the index (and most likely, it indeed won't).

The important thing is that the index items are **ordered** (ascending or descending - depending on how you created the index). `createIndex({age: 1})` creates an index with **ascending sorting**, `createIndex({age: -1})` creates one with **descending sorting**.

MongoDB is now able to quickly find a fitting document when you filter for its age as it has a sorted list. Sorted lists are way quicker to search because you can skip entire ranges (and don't have to look at every single document).

Additionally, sorting (via `sort(...)`) will also be sped up because you already have a sorted list. Of course this is only true when sorting for the age.