7.3.1 Aggregation with the Zip Code Data Set

The examples in this document use the `zipcodes` collection. This collection is available at: media.mongodb.org/zips.json[13]. Use `mongoimport` to load this data set into your `mongod` instance.

Data Model

Each document in the `zipcodes` collection has the following form:

```
{
  "_id": "10280",
  "city": "NEW YORK",
  "state": "NY",
  "pop": 5574,
  "loc": [
    -74.016323,
    40.710537
  ]
}
```

- The `_id` field holds the zip code as a string.
- The `city` field holds the city name. A city can have more than one zip code associated with it as different sections of the city can each have a different zip code.
- The `state` field holds the two letter state abbreviation.
- The `pop` field holds the population.
- The `loc` field holds the location as a latitude longitude pair.

`aggregate()` Method

All of the following examples use the `aggregate()` helper in the `mongo` shell.

The `aggregate()` method uses the *aggregation pipeline* (page 440) to processes documents into aggregated results. An *aggregation pipeline* (page 440) consists of *stages* with each stage processing the documents as they pass along the pipeline. Documents pass through the stages in sequence.

The `aggregate()` method in the `mongo` shell provides a wrapper around the `aggregate` database command. See the documentation for your `driver` for a more idiomatic interface for data aggregation operations.

Return States with Populations above 10 Million

The following aggregation operation returns all states with total population greater than 10 million:

```
db.zipcodes.aggregate( [
   { $group: { _id: "$state", totalPop: { $sum: "$pop" } } },
   { $match: { totalPop: { $gte: 10*1000*1000 } } }
] )
```

In this example, the *aggregation pipeline* (page 440) consists of the `$group` stage followed by the `$match` stage:

- The `$group` stage groups the documents of the `zipcode` collection by the `state` field, calculates the `totalPop` field for each state, and outputs a document for each unique state.

[13] http://media.mongodb.org/zips.json