t

1. What is the population of FISHERS ISLAND
dani
yeray
arnau
borja
enric
2. List all the cities in the state "MA"
enric

## db.zipcodes.distinct("city",{"state":"MA"})

405
```
   "AGAWAM",
   "CUSHMAN",
   "BARRE",
   "CHESTERFIELD",
   "CHICOPEE",
   "WESTOVER AFB", etc
```
enric
db.zipcodes.find({"state": "MA"}, {"city":1, _id:0}).count()
474 MAL porque se repiten


3. List all the cities with a population between 1 and 10 inclusive and their population
{ "_id" : "AMBLER", "totalPop" : 8 }
{ "_id" : "PLATINUM", "totalPop" : 4 }
{ "_id" : "CROOKED CREEK", "totalPop" : 1 }
Borja
```
db.zipcodes.aggregate([
{ $group: { _id: "$city", totalPop: { $sum: "$pop" } } },
{ $match: { totalPop: { $gte: 1, $lte:10 } } }])
```


arnau
```
db.zipcodes.aggregate([
   { $group: { _id: "$city", totalPop: { $sum: "$pop" } } },
   { $match: { totalPop: { $gte: 1, $lte:10 }}},
   { $project:{"_id":1}}
])
```

```
db.zipcodes.aggregate([ { $group: { _id: "$city", totalPop: { $sum: "$pop" } } }, { $match: { totalPop: { $gte: 1,
$lte:10 }}}, { $project:{"_id":1, "totalPop":1}} ])
```

{ "_id" : "AMBLER" }
{ "_id" : "PLATINUM" }
{ "_id" : "CROOKED CREEK" }
{ "_id" : "BENGE" }
{ "_id" : "SUMMER LAKE" }
{ "_id" : "DAIRY" }
{ "_id" : "BRIDAL VEIL" }
{ "_id" : "MAD RIVER" }
{ "_id" : "AVERILL" }
{ "_id" : "ELK SPRINGS" }
{ "_id" : "KENNEDY SPACE CE" }
{ "_id" : "DUTCH HARBOR" }
{ "_id" : "SILVER BAY" }
{ "_id" : "SQUIRREL ISLAND" }
{ "_id" : "QUAY" }
{ "_id" : "OLIVEBURG" }
{ "_id" : "BUEYEROS" }
{ "_id" : "SAPELLO" }
{ "_id" : "ROSEBOOM" }
{ "_id" : "LAKE BUENA VISTA" }

4. List all the cities in the state "MA" with a population less than 100
arnau
//DISTINCT

## db.zipcodes.distinct("city", {"state":"MA", "pop":{$lte:100}})

[ "BUCKLAND", "MONROE", "CAMBRIDGE", "CUTTYHUNK" ]

Dani
```
db.zipcodes.aggregate([ {$match:{"state":"MA"}},{ $group: { _id: "$city", totalPop: { $sum: "$pop" } } }, { $match:
{ totalPop: { $lt:100 } } }])
```
{ "_id" : "CUTTYHUNK", "totalPop" : 98 }
{ "_id" : "MONROE", "totalPop" : 97 }
{ "_id" : "BUCKLAND", "totalPop" : 16 }

5. List all of the distinct states
Manel

```
> db.zipcodes.distinct("state").sort()
[
"AK",   "AL",   "AR",   "AZ",   "CA",   "CO",   "CT",   "DC",   "DE",   "FL",
"GA",   "HI",   "IA",   "ID",   "IL",   "IN",   "KS",   "KY",   "LA",   "MA",
```
17. Find all the states with a total
population above 10 million (this requires a sum and a
selection) – don't just lookup single entries with a population of over 10 million)

"MD", "ME", "MI",  "MN", "MO", "MS", "MT", "NC", "ND", "NE",
"NH", "NJ",  "NM", "NV", "NY", "OH", "OK", "OR", "PA",  "RI",
"SC", "SD", "TN", "TX", "UT", "VA", "VT",  "WA", "WI",  "WV", "WY"
]

6. List the distinct states that contain a city with a population above 100,000

7. What is the size of the smallest city (by population) in each state?
Erik
db.zipcodes.aggregate([{ $group:{_id: { state: "$state", city: "$city" },pop: { $sum: "$pop" }}},
{ $sort:{ pop: 1 } },
{ $group:{ _id : "$_id.state", smallestCity: { $first: "$_id.city" },smallestPop:  { $first: "$pop" }}},
{$project:{ _id: 0,state: "$_id", smallestCity: { name: "$smallestCity", pop: "$smallestPop"}}}])

{ "smallestCity" : { "name" : "BETHEL", "pop" : 108 }, "state" : "DE" }
{ "smallestCity" : { "name" : "CHUNKY", "pop" : 79 }, "state" : "MS" }
{ "smallestCity" : { "name" : "CLAYVILLE", "pop" : 45 }, "state" : "RI" }
{ "smallestCity" : { "name" : "BENDAVIS", "pop" : 44 }, "state" : "MO" }
{ "smallestCity" : { "name" : "CECIL FIELD NAS", "pop" : 0 }, "state" : "FL" }
{ "smallestCity" : { "name" : "TOMATO", "pop" : 0 }, "state" : "AR" }
{ "smallestCity" : { "name" : "FORT STEWART", "pop" : 0 }, "state" : "GA" }
{ "smallestCity" : { "name" : "UNIV OF VERMONT", "pop" : 0 }, "state" : "VT" }
{ "smallestCity" : { "name" : "MONUMENT", "pop" : 0 }, "state" : "NM" }


8. What is the name of the smallest city (by population) in each state?

    Use the reduce function of a group command to find the smallest population.  -- no

9. List the average population size for each state

    no

10. How many cities does state WA have?

Borja



11. List all the states and the number of cities they contain. Use an aggregation pipeline, and here is a clue: there is no $count operator, but you can use $sum:1
db.zipcodes.aggregate

https://docs.mongodb.com/manual/reference/operator/aggregation/sum/

db.zipcodes.aggregate([{ $group:{_id: { state: "$state", city: "$city" },pop: { $sum: "$pop" }}},
])

{ "_id" : { "state" : "AK", "city" : "SITKA" }, "pop" : 8638 }
{ "_id" : { "state" : "AK", "city" : "POINT BAKER" }, "pop" : 426 }
{ "_id" : { "state" : "AK", "city" : "SKAGWAY" }, "pop" : 692 }
{ "_id" : { "state" : "AK", "city" : "NOATAK" }, "pop" : 395 }

{ "_id" : { "state" : "AK", "city" : "GUSTAVUS" }, "pop" : 258 }
{ "_id" : { "state" : "AK", "city" : "ANGOON" }, "pop" : 1002 }
{ "_id" : { "state" : "AK", "city" : "NUIQSUT" }, "pop" : 354 }
{


dani
db.zipcodes.aggregate([ { $group:{_id: { state: "$state", city: "$city" }, count: {$sum:1}}},
{$group:{_id:"$_id.state", count:{$sum:1}}}])
{ "_id" : "DC", "count" : 2 }
{ "_id" : "DE", "count" : 46 }
{ "_id" : "RI", "count" : 52 }
{ "_id" : "NJ", "count" : 490 }
{ "_id" : "MT", "count" : 308 }
{ "_id" : "CA", "count" : 1072 }
{ "_id" : "KS", "count" : 648 }
{ "_id" : "MO", "count" : 901 }
{ "_id" : "NH", "count" : 212 }
{ "_id" : "OK", "count" : 511 }


12. List all the states that fewer than 100 cities.

Diego
db.zipcodes.aggregate([ { $group:{_id: { state: "$state", city: "$city" }, count: {$sum:1}}},
{$group:{_id:"$_id.state", count:{$sum:1}}},{ $match: { count: { $lt: 100}}}])
{ "_id" : "DC", "count" : 2 }
{ "_id" : "DE", "count" : 46 }
{ "_id" : "RI", "count" : 52 }
{ "_id" : "NV", "count" : 66 }
{ "_id" : "HI", "count" : 70 }


13. A lot of cities are listed more than once, even though they are in the same state. Which
cities are mentioned more than 50 times in the same state?

dani
db.zipcodes.aggregate([ { $group:{_id: { state: "$state", city:"$city"},count: {$sum:1}}},{ $match: { count: { $gt:
50}}}])
{ "_id" : { "state" : "CA", "city" : "LOS ANGELES" }, "count" : 56 }
{ "_id" : { "state" : "TX", "city" : "HOUSTON" }, "count" : 93 }

14. List all the city names that appear in more than twenty different states, along with their
states

15. What is the total population of all the NY postcodes?
dani

**db.zipcodes.aggregate( [ { $match:{"state":"NY"}}, {$group:{"_id":"$state", "pop":{$sum:"$pop"}}}] )**

{ "_id" : "NY", "pop" : 17990402 }

16. How many different postcodes are there in the NY state?

*db.zipcodes.distinct("_id", {state: "NY"}).length*

17. Find all the states with a total population above 10 million (this requires a sum and a selection) – don't just lookup single entries with a population of over 10 million)
Quim
ESTÁ BIEN
db.zipcodes.aggregate( [
   { $group: { _id: "$state", totalPop: { $sum: "$pop" } } },
   { $match: { totalPop: { $gte: 10000000 } } }
] )

{ "_id" : "CA", "totalPop" : 29754890 }
{ "_id" : "FL", "totalPop" : 12686644 }
{ "_id" : "PA", "totalPop" : 11881643 }
{ "_id" : "NY", "totalPop" : 17990402 }
{ "_id" : "OH", "totalPop" : 10846517 }
{ "_id" : "IL", "totalPop" : 11427576 }
{ "_id" : "TX", "totalPop" : 16984601 }