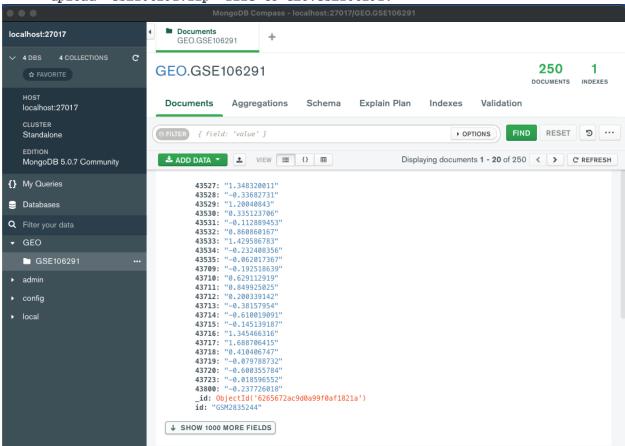
MongoDB

Team 2

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THIS HOMEWORK IS DONE IN MongoDB

1. Create a database called "GEO"; Create a collection called "GSE106291" And upload "GSE106291.zip" file to GEO.GSE106291.



 Write the attached MongoDB scripts (Script_CS527.js) against GEO.GSE106291 by replacing "instacart" with "GEO" and "customers" with "GSE106291".

```
// select database
use GEO;
> show dbs
GEO
        0.080GB
admin
        0.000GB
config 0.000GB
local
        0.000GB
> use GEO
switched to db GEO
// create a collection
db.createCollection("GSE106291");
> show collections
GSE106291
// add a document
db.GSE106291.insert({id:"AAA", value:"-0.111111111"});
(> db.GSE106291.insert({id:"AAA", value:"-0.111111111"})
WriteResult({ "nInserted" : 1 })
```

```
// show data
db.GSE106291.find();
Due to the limitation of space, only partial result was shown
// add multiple documents
db.GSE106291.insert([{id:"BBB", value:"-0.2222"},{id:"CCC", value:"0.3333"}]);
> db.GSE106291.insert([{id:"BBB", value:"-0.2222"},{id:"CCC",value:"0.3333"}]);
BulkWriteResult({
      "writeErrors" : [ ],
"writeConcernErrors" : [ ],
      "nInserted" : 2,
"nUpserted" : 0,
      "nMatched" : 0,
      "nModified" : 0,
      "nRemoved" : 0,
      "upserted" : [ ]
// update document
db.GSE106291.update({id:"AAA"}, {id:"AAA", value:"0.1111"});
> db.GSE106291.update({id:"AAA"},{id:"AAA", value:"0.1111"})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
// update document with a new attribute
db.GSE106291.update({id:"AAA"}, {$set:{population:"5000"}});
[> db.GSE106291.update({id:"AAA"},{$set:{population:"5000"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
// update incrementally
db.GSE106291.update({id:"AAA"}, {$inc:{population:5}});
(> db.GSE106291.update({id:"BBB"},{$inc:{population:5}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
// The $unset is an attribute update operator that completely removes a particular
field from a document
db.GSE106291.update({id:"BBB"}, {$unset:{population:1}});
[> db. GSE106291.update({id:"BBB"},{$unset:{population:1}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
// upsert is a combination of update and insert
db.GSE106291.update({id:"CCC"}, {id:"CCC", value:"0.4444",
population:20}, {upsert:true});
> db.GSE106291.update({id:"CCC"},{id:"CCC", value:"0.4444", population:20},{upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
// rename an attribute
db.GSE106291.update({id:"AAA"}, {$rename:{"population":"numberofpeople"}});;
> db.GSE106291.update({id:"AAA"},{$rename:{"population":"numberofpeople"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
// remove one or more documents
db.GSE106291.remove({id:"AAA"});
|> db.GSE106291.remove({id:"AAA"})
WriteResult({ "nRemoved" : 1 })
```

```
// remove just one document
db.GSE106291.remove({id:"CCC"}, {justone:true});
[> db.GSE106291.remove({id:"CCC"},{justone:true})
WriteResult({ "nRemoved" : 1 })
// add nested documents
db.GSE106291.insert({
        id:"AAA",
        population:"5000",
        country: "USA",
        memberships: ["UN","NATO"]
});
db.GSE106291.insert({
        id: "BBB",
        population: "3000",
        country: "China",
        age:65,
memberships: ["UN","UNIC"]});
> db.GSE106291.insert({
... id:"AAA",
... population:"5000",
... country: "USA",
... memberships: ["UN","NATO"]
... });
WriteResult({ "nInserted" : 1 })
> db.GSE106291.insert({
... id:"BBB",
... population: "3000",
... country: "China",
... age:65,
... memberships: ["UN","UNIC"]});
WriteResult({ "nInserted" : 1 })
// search by filter
db.GSE106291.find({id:"AAA"});
> db.GSE106291.find({id:"AAA"})
{ "_id" : ObjectId("62657492edf30bda6be48674"), "id" : "AAA", "population" : "5000", "country" : "USA", "memberships" : [ "UN", "NATO" ]
// search by filter and logical operators
db.GSE106291.find({$or:[{id:"AAA"}, {country:"China"}]}).pretty();
> db. GSE106291.find({$or:[{id:"AAA"},{country:"China"}]}).pretty()
        "_id" : ObjectId("62657492edf30bda6be48674"),
        "id" : "AAA",
"population" : "5000",
        "country": "USA",
"memberships": [
               "UN",
               "NATO"
        "_id" : ObjectId("62657492edf30bda6be48675"),
"id" : "BBB",
"population" : "3000",
        "country": "China",
"age": 65,
        "memberships" : [
               "UN",
"UNIC"
// search by filter and numerical operator
db.GSE106291.find({population:{$lt: "4000"}}).pretty();
```

```
db.GSE106291.find({population:{$lt:"4000"}}).pretty()
                             "_id" : ObjectId("62657492edf30bda6be48675"),
"id" : "BBB",
"population" : "3000",
"country" : "China",
"age" : 65,
"memberships" : [
"UNI",
"UNIC"
 // search a nested document
 db.GSE106291.find({"address.city":"New York"}).pretty();
db.GSE106291.find({"address.compactions of the content of the
                            "_id": ObjectId("62657709edf30bda6be48676"),
"id": "CCC",
"country": "GER",
"population": "1000",
"age": 65,
"memberships": [
"UN",
"EU"
                           ],
"address" : {
"city" : "New York",
"state" : "NY"
                            },
"contacts" : [
                                                                                "name" : "Ali",
"relationship" : "no-friend"
                                                                                "name" : "Frazer",
"relationship" : "bithim"
 // search a document by attribute with multiple values
 db.GSE106291.find({memberships:"UN"}).pretty();
 (> db.GSE106291.find({memberships:"UN"}).pretty();
                             "_id" : ObjectId("62657492edf30bda6be48675"),
"id" : "BBB",
"population" : "3000",
"country" : "China",
"age" : 65,
"memberships" : [
"UN',
"UNIC"
]
                             "_id" : ObjectId("62657709edf30bda6be48676"),
"id" : "CCC",
"country" : "GER",
"population" : "1000",
"age" : 65,
"memberships" : [
"UN",
"EU"
                             l,
"address" : {
"city" : "New York",
"state" : "NY"
                             },
"contacts" : [
{
                                                                                    "name" : "Ali",
"relationship" : "no-friend"
```

"name" : "Frazer", "relationship" : "bithim"

```
// sort documents ascendingly
db.GSE106291.find({id:"BBB"}).sort({id:1}).pretty();
> db.GSE106291.find({id:"BBB"}).sort({id:1}).pretty();
            "_id" : ObjectId("62657492edf30bda6be48675"),
"id" : "BBB",
"population" : "3000",
"country" : "China",
"age" : 65,
"memberships" : [
"UN",
"UNIC"
]
             "_id" : ObjectId("626578f5edf30bda6be48678"),
"id" : "BBB",
"country" : "GER",
"population" : "2000",
             "populacion"
"age" : 65,
"memberships" : [
"UN",
                         "EU"
            ],
"address" : {
"city" : "New York",
"state" : "NY"
            },
"contacts" : [
                                      "name" : "Ali",
"relationship" : "no-friend"
                                      "name" : "Frazer",
"relationship" : "bithim"
// sort documents descendingly
db.GSE106291.find({id:"BBB"}).sort({id:-1}).pretty();
> db.GSE106291.find({id:"BBB"}).sort({id:-1}).pretty();
              "_id" : ObjectId("62657492edf30bda6be48675"),
"id" : "BBB",
"population" : "3000",
"country" : "China",
"age" : 65,
              "memberships" : [
                           "UN",
"UNIC"
              "_id" : ObjectId("626578f5edf30bda6be48678"),
"id" : "BBB",
"country" : "GER",
"population" : "2000",
              "age" : 65,
              "memberships" : [
                           "UN",
                           "EU"
             ],
"address" : {
"city" : "New York",
"state" : "NY"
             },
"contacts" : [
                                         "name" : "Ali",
"relationship" : "no-friend"
                           },
{
                                         "name" : "Frazer",
"relationship" : "bithim"
```

```
// count documents
db.GSE106291.find().count();
> db.GSE106291.find().count();
253
// search + count
db.GSE106291.find({id:"AAA"}).count();
> db.GSE106291.find({id:"AAA"}).count();
// documents result set limit
db.GSE106291.find({id:"BBB"}).limit(2).pretty();
> db.GSE106291.find({id:"BBB"}).limit(2).pretty();
{
        "_id" : ObjectId("62657492edf30bda6be48675"),
"id" : "BBB",
"population" : "3000",
        "country" : "China",
        "age" : 65,
        "memberships" : [
                "UN",
                "UNIC"
        "_id" : ObjectId("626578f5edf30bda6be48678"),
"id" : "BBB",
"country" : "GER",
        "population" : "2000",
        "age" : 65,
        "memberships" : [
                "UN",
                "EU"
       ],
"address" : {
"city" : "New York",
"c" : "NY"
        },
"contacts" : [
                        "name" : "Ali",
"relationship" : "no-friend"
                        "name" : "Frazer",
"relationship" : "bithim"
        1
// search by loop
db.GSE106291.find({id:"BBB"}).forEach(function(doc){print("memberships:
"+doc.id) });
> db.GSE106291.find({id:"BBB"}).forEach(function(doc){print("memberships: "+doc.id)});
memberships: BBB
memberships: BBB
memberships: BBB
// drop collection
db.GSE106291.drop();
[> db.GSE106291.drop();
true
// add user
db.createUser({
        user: "brad",
        pwd:"1234",
        roles:["readWrite","dbAdmin"]
})
```