DATABASE SYSTEMS LAB

LAB TASK # 13

Submitted By

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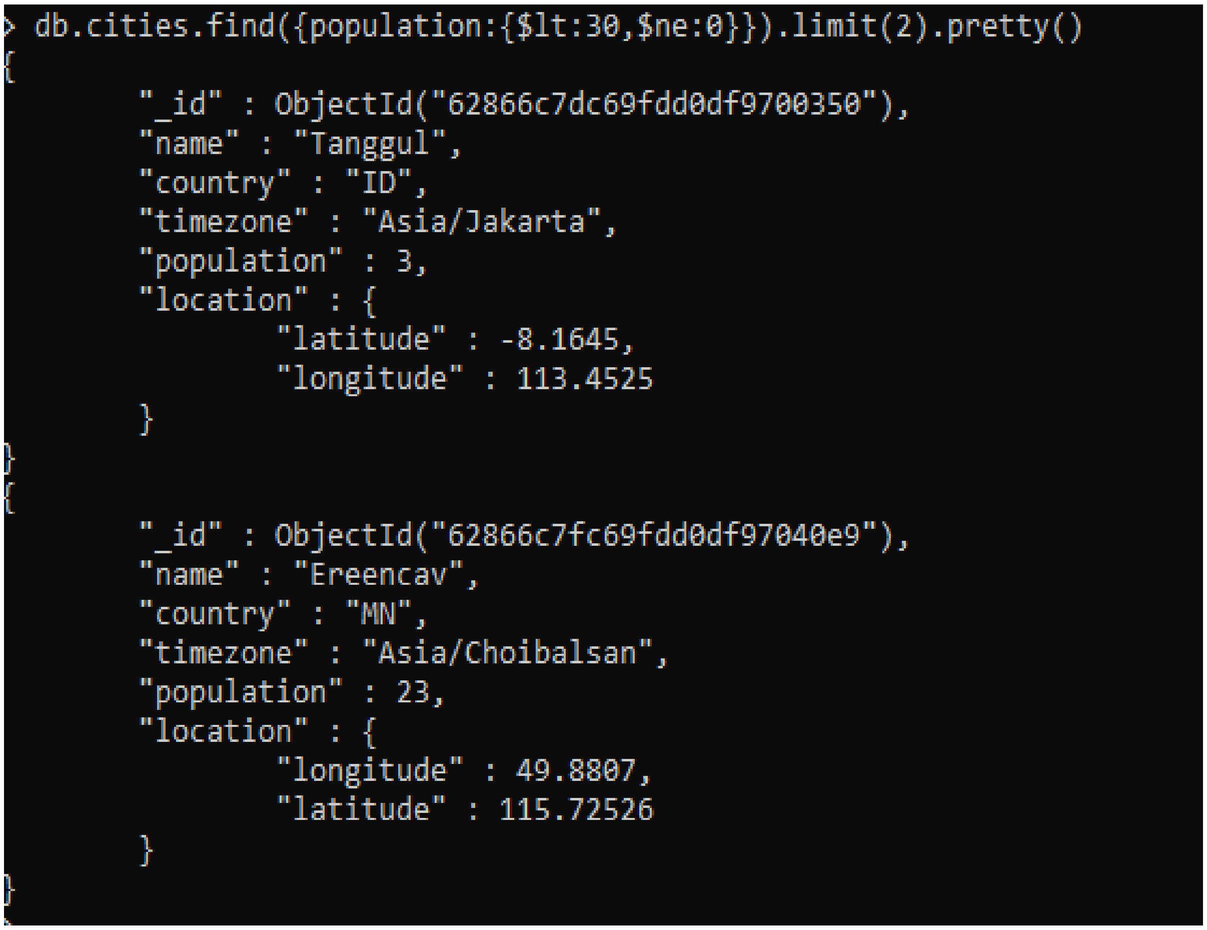
Exercises:

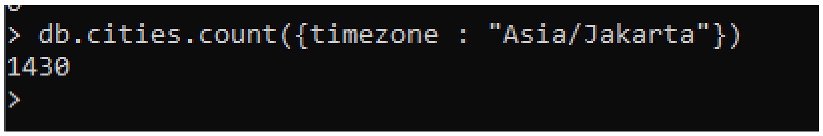
Use the cities collections that you have already imported in the last lab.

1) Write a Query to return all the documents whose cities population is less than 30 not equal to zero, then uses the limit clause to limit the number of documents being returned to just 2.



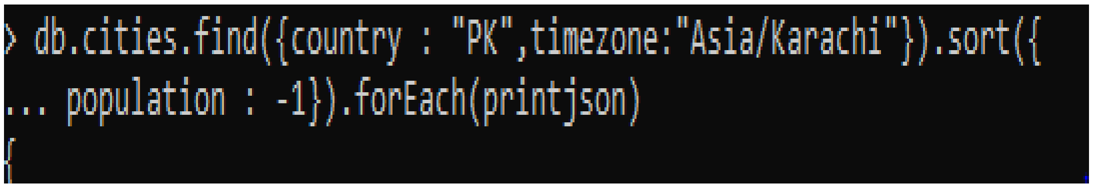
```
> db.cities.find({population:{$lt:30,$ne:0}}).limit(2).pretty()
{
        "_id" : ObjectId("62866c7dc69fdd0df9700350"),
        "name" : "Tanggul",
        "country" : "ID",
        "timezone" : "Asia/Jakarta",
        "population" : 3,
        "location" : {
                "latitude" : -8.1645,
                "longitude" : 113.4525
        }
}
{
        "_id" : ObjectId("62866c7fc69fdd0df97040e9"),
        "name" : "Ereencav",
        "country" : "MN",
        "timezone" : "Asia/Choibalsan",
        "population" : 23,
        "location" : {
                "longitude" : 49.8807,
                "latitude" : 115.72526
        }
}
```

2) Write a Query to count the number of the documents whose timezone is “Asia/Jakarta”.

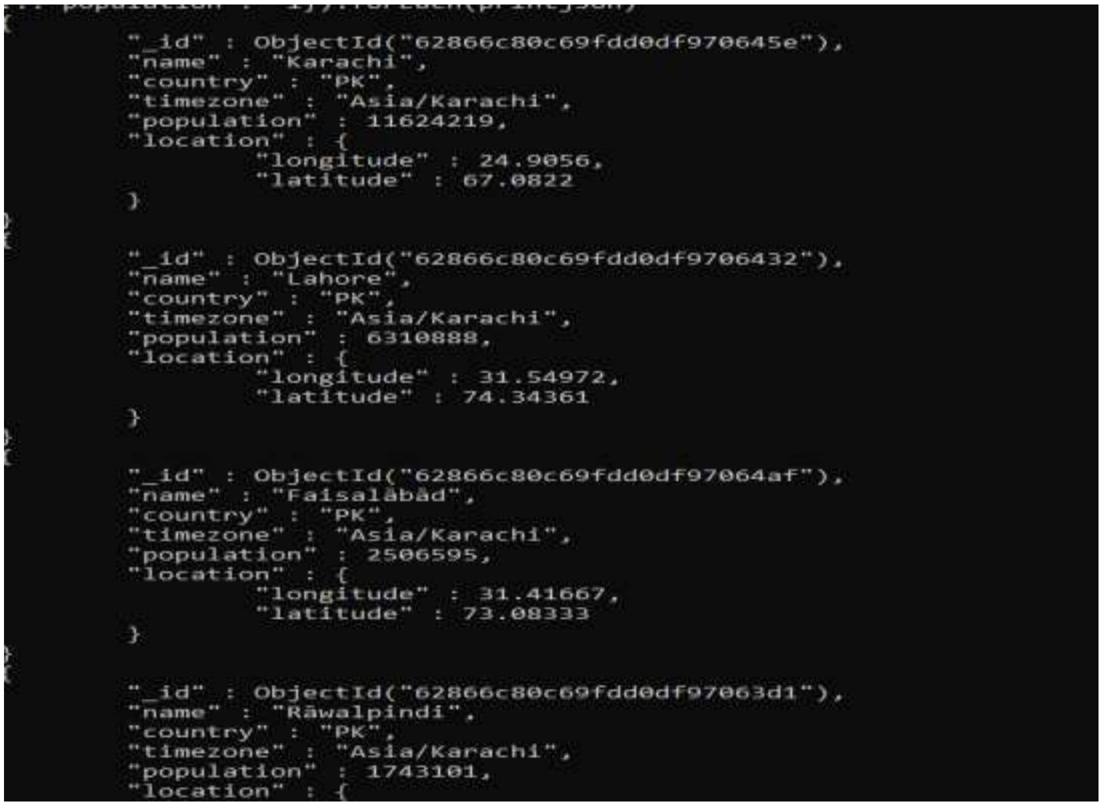


```
> db.cities.count({timezone : "Asia/Jakarta"})
1430
>
```

3) Write a Query to return all the documents whose country is “PK” and country timezone is “Asia/Karachi” and return the documents based on the descending order of population.

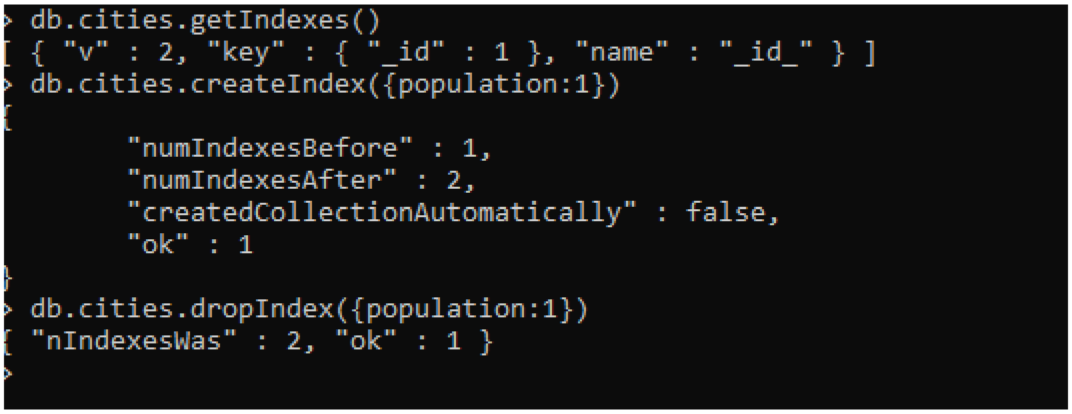


```
> db.cities.find({country : "PK",timezone:"Asia/Karachi"}).sort({
... population : -1}).forEach(printjson)
{
```



```
{
        "_id" : ObjectId("62866c80c69fdd0df970645e"),
        "name" : "Karachi",
        "country" : "PK",
        "timezone" : "Asia/Karachi",
        "population" : 11624219,
        "location" : {
                "longitude" : 24.9056,
                "latitude" : 67.0822
        }
}
{
        "_id" : ObjectId("62866c80c69fdd0df9706432"),
        "name" : "Lahore",
        "country" : "PK",
        "timezone" : "Asia/Karachi",
        "population" : 6310888,
        "location" : {
                "longitude" : 31.54972,
                "latitude" : 74.34361
        }
}
{
        "_id" : ObjectId("62866c80c69fdd0df97064af"),
        "name" : "Faisalābād",
        "country" : "PK",
        "timezone" : "Asia/Karachi",
        "population" : 2506595,
        "location" : {
                "longitude" : 31.41667,
                "latitude" : 73.08333
        }
}
{
        "_id" : ObjectId("62866c80c69fdd0df97063d1"),
        "name" : "Rāwalpindi",
        "country" : "PK",
        "timezone" : "Asia/Karachi",
        "population" : 1743101,
        "location" : {
```

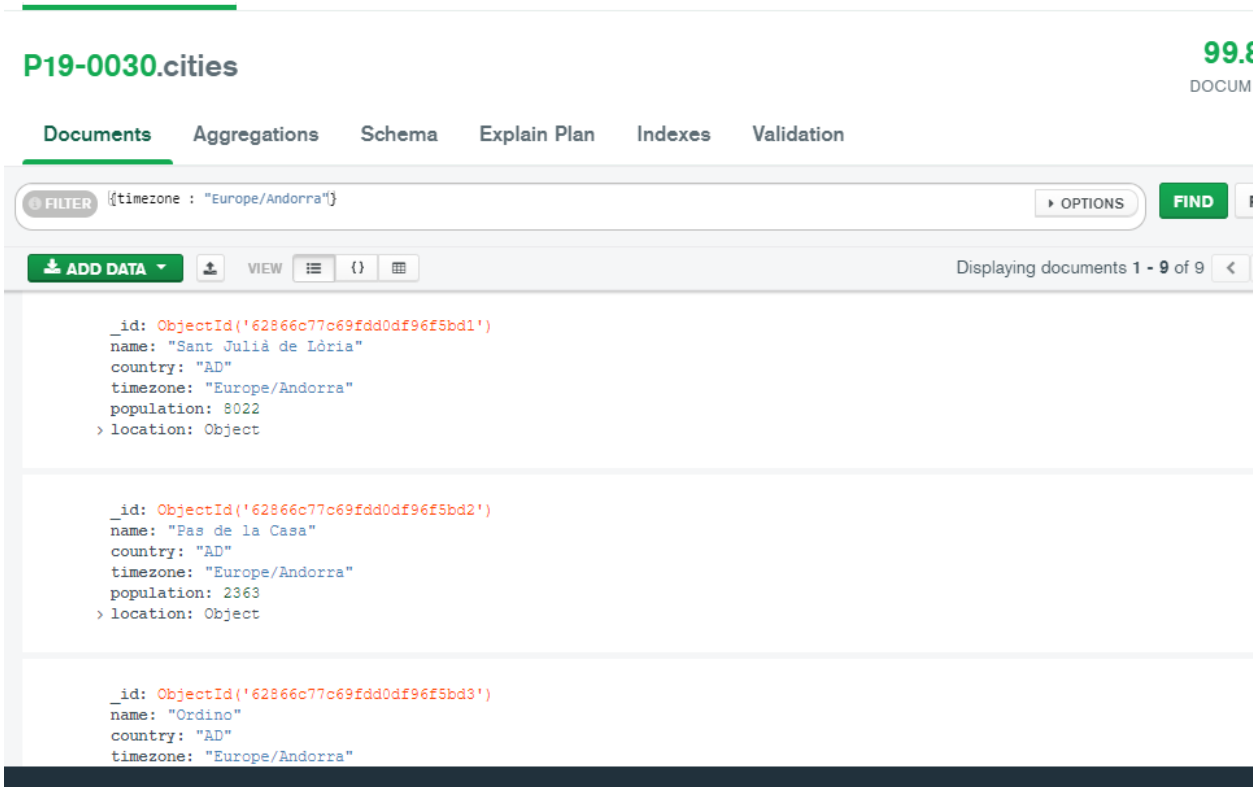
4) Write a query to get all the Indexes of cities collection and then add the index on population field and then drop the index on population field.



```
> db.cities.getIndexes()
[ { "v" : 2, "key" : { "_id" : 1 }, "name" : "_id_" } ]
> db.cities.createIndex({population:1})
{
        "numIndexesBefore" : 1,
        "numIndexesAfter" : 2,
        "createdCollectionAutomatically" : false,
        "ok" : 1
}
> db.cities.dropIndex({population:1})
{ "nIndexesWas" : 2, "ok" : 1 }
>
```

5) Use MongoDB compass filter tab to write queries for finding:

i. All those cities whose time zone is Europe/Andorra.



```
{timezone : "Europe/Andorra"}
```

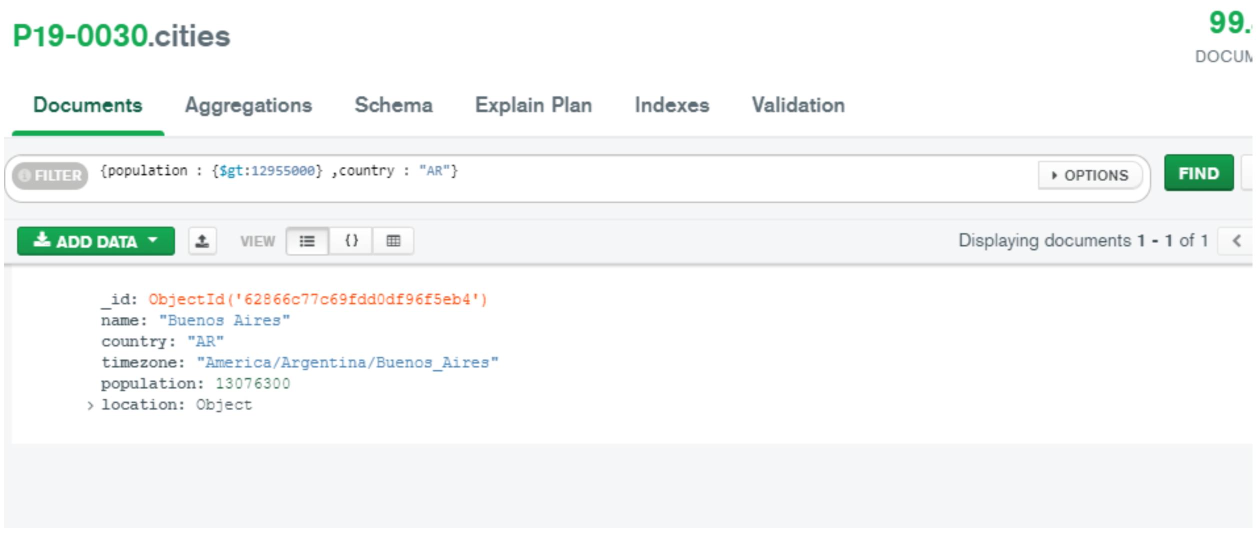
Displaying documents 1 - 9 of 9

```
_id: ObjectId('62866c77c69fdd0df96f5bd1')
name: "Sant Julià de Lòria"
country: "AD"
timezone: "Europe/Andorra"
population: 8022
> location: Object

_id: ObjectId('62866c77c69fdd0df96f5bd2')
name: "Pas de la Casa"
country: "AD"
timezone: "Europe/Andorra"
population: 2363
> location: Object

_id: ObjectId('62866c77c69fdd0df96f5bd3')
name: "Ordino"
country: "AD"
timezone: "Europe/Andorra"
```

ii. All those cities whose population is greater than 12955000 and country is AR.

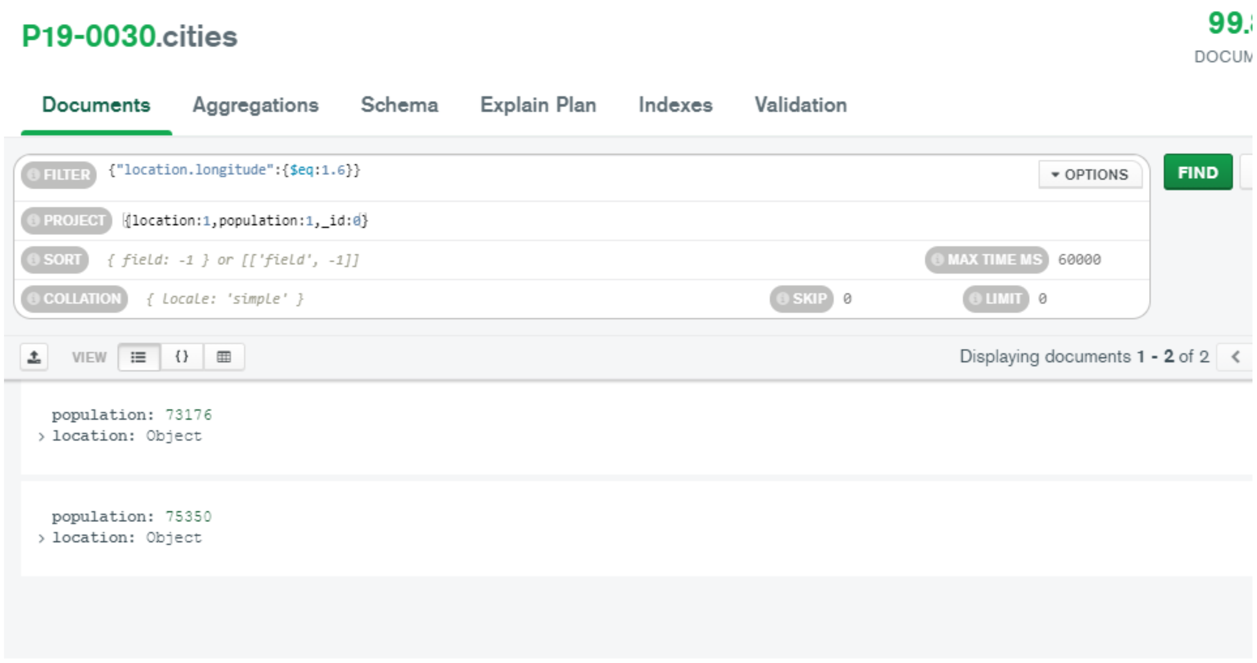


```
{population : {$gt:12955000} ,country : "AR"}
```

Displaying documents 1 - 1 of 1

```
_id: ObjectId('62866c77c69fdd0df96f5eb4')
name: "Buenos Aires"
country: "AR"
timezone: "America/Argentina/Buenos_Aires"
population: 13076300
> location: Object
```

iii. A city whose longitude equals to 1.6. Your query should return location and population fields only. (hint: use project)



```
FILTER     {"location.longitude":{$eq:1.6}}
PROJECT    {location:1,population:1,_id:0}
SORT       { field: -1 } or [['field', -1]]        MAX TIME MS  60000
COLLATION  { locale: 'simple' }        SKIP  0        LIMIT  0
```

Displaying documents 1 - 2 of 2

```
population: 73176
> location: Object
```

```
population: 75350
> location: Object
```