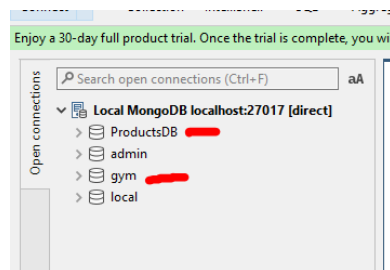
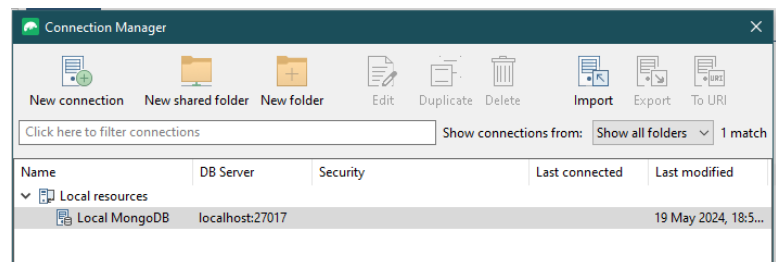
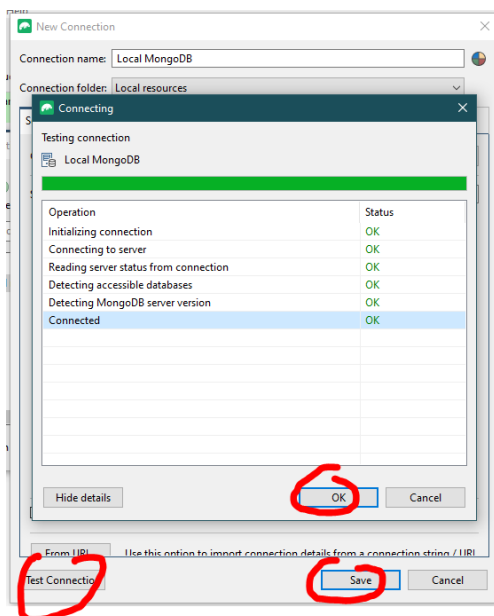


Advanced Databases : Mongodb

Lab 9 Solutions

- 1- Open Mongod & Mongo like the last lab
- 2- Download Gym extract & restore as the instructions in the lab
- 3- Download and install Studio 3T: Run & Connect to the server: Here's how to connect to a local server in Studio 3T:
 - Open Studio 3T.
 - Click the **Connect** button in the top-left corner of the toolbar.
 - In the **Connection Manager dialog**, click the **New Connection** button. Alternatively, on the Quickstart tab, you can click "**Create a new connection**".
 - In the New Connection dialog, choose **Manually configure my connection settings** and click **Next**.
 - Name the connection for easy identification ("**Local MongoDB**").
 - In the Connection Type list, select **Standalone** (assuming you're connecting to a single MongoDB instance).
 - Set the Server field to **localhost**. This indicates you are connecting to a **local server** on the same machine.
 - The default **Port for MongoDB is 27017**. Leave this field unchanged unless your local MongoDB instance uses a different port.
 - You can test the connection by clicking **Test Connection**. This verifies if Studio 3T can successfully connect to your local MongoDB server. 1 0. Click **Save** to finalize the connection setup.



```

C:\Users\Djana>cd..
C:\Users>cd..
C:\>D:
D:\>cd mongodb\bin
D:\MongoDB\bin>mongorestore -d gym D:\MongoDB\gym
connected to: 127.0.0.1
2024-05-19T19:47:30.274+0100 D:\MongoDB\gym\Gymnases.bson
2024-05-19T19:47:30.274+0100 going into namespace [gym.Gymnases]
Restoring to gym.Gymnases without dropping. Restored data will be inserted without raising errors; check your server log
WARNING: collection gym.Gymnases exists with different options than are in the metadata.json file and not using --drop. Option
28 objects found
2024-05-19T19:47:30.290+0100 Creating index: { key: { _id: 1 }, name: "_id_", ns: "gym.Gymnases" }
2024-05-19T19:47:30.290+0100 D:\MongoDB\gym\Sportifs.bson
2024-05-19T19:47:30.290+0100 going into namespace [gym.Sportifs]
Restoring to gym.Sportifs without dropping. Restored data will be inserted without raising errors; check your server log
WARNING: collection gym.Sportifs exists with different options than are in the metadata.json file and not using --drop. Option
150 objects found
2024-05-19T19:47:30.290+0100 Creating index: { key: { _id: 1 }, name: "_id_", ns: "gym.Sportifs" }
D:\MongoDB\bin>mongo
MongoDB shell version 2
connecting to: test
> use gym
switched to db gym

```

RESTORE

CONNECT

GYM DB Cont

Collect of GYM From CMD

```

> show collections
Gymnases
Sportifs

```

Verify Collection Data

```

> db.Gymnases.find().limit(1).pretty()
{
  "_id" : "566eec69662b388eba464299",
  "IdGymnase" : 1,
  "NomGymnase" : "PAUL ELUARD",
  "Adresse" : "2 rue des pépines",
  "Ville" : "STAINS",
  "Surface" : 200,
  "Seances" : [
    {
      "IdSportifEntraîneur" : 149,
      "Jour" : "Samedi",
      "Horaire" : 9,
      "Duree" : 60,
      "Libelle" : "Basket ball"
    },
    {
      "IdSportifEntraîneur" : 1,
      "Jour" : "Lundi",
      "Horaire" : 9,
      "Duree" : 60,
      "Libelle" : "Hand ball"
    }
  ]
}

```

4- Answer some queries Using Robomongo:

Collect of GYM From STD3T

And we can use **(Names of the Columns are in French)**

| _id | IdGymnase | NomGymnase | Adresse | Ville | Surface | Seances |
|-------------------|-----------|---------------|---------------------|--------------|---------|-----------------|
| 566eec69662b38... | 1 | PAUL ELUARD | 2 rue des pépin... | STAINS | 200 | [20 elements] |
| 566eec69662b38... | 2 | ARAGON | Place du Chart... | MONTMOREN... | 450 | [1 elements] |
| 566eec69662b38... | 3 | SAINT EXUPERY | 47 bvd des bru... | PIERREFITTE | 400 | [3 elements] |
| 566eec69662b38... | 4 | PAUL ELUARD | Allée J.B. Lulli | SARCELLES | 500 | [2 elements] |
| 566eec69662b38... | 5 | BRASSENS | 153 square Loliot | SARCELLES | 620 | [2 elements] |
| 566eec69662b38... | 6 | VERLAINE | 14 bvd Serrault | STAINS | 400 | [2 elements] |
| 566eec69662b38... | 7 | JULES FERRY | 45 rue de la gare | PIERREFITTE | 360 | [2 elements] |
| 566eec69662b38... | 8 | PREVERT | 12 rue des colli... | MONTMOREN... | 420 | [5 elements] |
| 566eec69662b38... | 9 | CAMUS | 3 esplanade de... | SARCELLES | 620 | [1 elements] |
| 566eec69662b38... | 10 | RIMBAUD | 140 bvd Diderot | STAINS | 400 | [3 elements] |
| 566eec69662b38... | 11 | LAMARTINE | 7 rue de la sour... | PIERREFITTE | 300 | [1 elements] |

```
1 db.Sportifs.find()
2 {
3   "id" : "566eec5f662b388eba464203",
4   "IdSportif" : NumberInt(1),
5   "Nom" : "BOUTAHAR",
6   "Prenom" : "Abderahim",
7   "Sexe" : "m",
8   "Age" : NumberInt(30),
9   "Sports" : {
10    "Jouer" : [
11      "Volley ball",
12      "Tennis",
13      "Football"
14    ],
15    "Arbitrer" : [
16      "Basket ball",
17      "Volley ball",
18      "Hockey"
19    ],
20    "Entraîner" : [
```

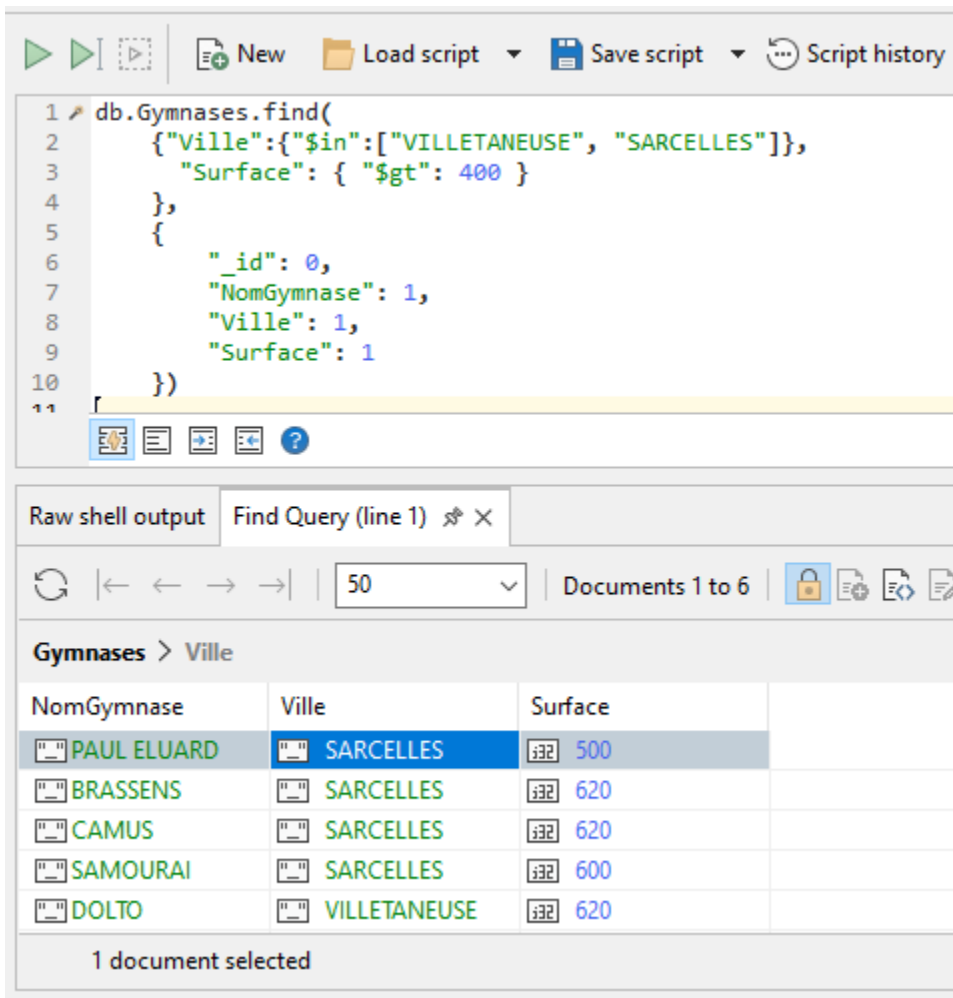
Which athletes (Id Sportifs, surname and first name) are aged between 20 and 30?

```
1 db.Sportifs.find(
2 {
3   "Age": { "$gte": 20, "$lte": 30 }
4 },
5 {
6   "_id": 0,
7   "IdSportif": 1,
8   "Nom": 1,
9   "Prenom": 1
10 }
11 )
12 )
```

| Sportifs > Nom | | |
|----------------|----------|-----------|
| IdSportif | Nom | Prenom |
| 1 | BOUTAHAR | Abderahim |
| 2 | KERVADEC | Yann |
| 3 | HUE | Pascale |
| 5 | COMES | Sylvie |

1 document selected

Which gyms in Villetaneuse or Sarcelles have a surface area of over 400 m²?



The screenshot shows a MongoDB query interface. The query is:

```
1 db.Gymnases.find(
2   {"Ville":{"$in":["VILLETANEUSE", "SARCELLES"]},
3    "Surface": { "$gt": 400 }
4   },
5   {
6     "_id": 0,
7     "NomGymnase": 1,
8     "Ville": 1,
9     "Surface": 1
10  })
11
```

The results are displayed in a table with columns: NomGymnase, Ville, and Surface. The table shows 6 documents, with the first document selected.

| NomGymnase | Ville | Surface |
|-------------|--------------|---------|
| PAUL ELUARD | SARCELLES | 500 |
| BRASSENS | SARCELLES | 620 |
| CAMUS | SARCELLES | 620 |
| SAMOURAI | SARCELLES | 600 |
| DOLTO | VILLETANEUSE | 620 |

1 document selected

- 5- Answer using Map-Reduce Paradigm
Calculate the number of gyms for each city

Quickstart x IntelliShell: Local MongoDB* x

localhost:27017 > gym

New Load script

```
1 var Map=function() {
2   emit(this.Ville, 1); }
3
4 var Reduce=function(cle, nbgy)
5 {return Array.sum(nbgy); }
6
db.Gymnases.mapReduce( Map, Reduce,
  { out: { inline: 1 }})
```

Run the Map and Reduce functions on the gym collection and display the results

The Map function creates a document with the key the city and 1 as the value. This document is passed to the Reduce

The Reduce function creates a key/value document with the key city and nbgy, which indicates the number of gyms in the city.

Raw shell output Shell Output (Documents) x

50 Documents 1 to 1

```
1 {
2   "results" : [
3     {
4       "_id" : "GARGES",
5       "value" : 1.0
6     },
7     {
8       "_id" : "MONTMORENCY",
9       "value" : 5.0
10    }
  ]
}
```

Results in a Json File

1 document selected

localhost:27017 > gym

▶ ▶ ▶ | New Load script Save script Script history Enable

```

1 var Map=function() {
2   emit(this.Ville, 1); }
3
4 var Reduce=function(cle, nbgym)
5   {return Array.sum(nbgym); }
6
7
8 db.Gymnases.mapReduce( Map, Reduce,
9   { out: { inline: 1 } })
10
11

```

Raw shell output Shell Output (Documents) ✕

⏪ ⏩ | 50 | Documents 1 to 1 | 🔍

Result > timeMillis

| results | timeMillis | counts | ok |
|----------------|------------|--------------|-----|
| [7 elements] | 742.0 | { 4 fields } | 1.0 |

Results in a Table