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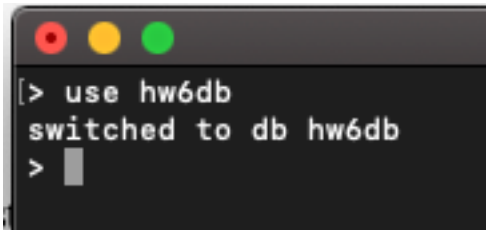
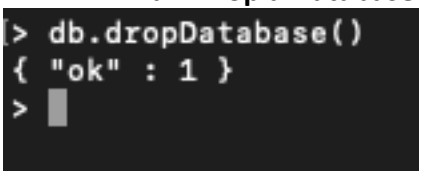
CSCI 3287
Homework 6
December 5, 2019

I. Part One: Basic Operations in MongoDB

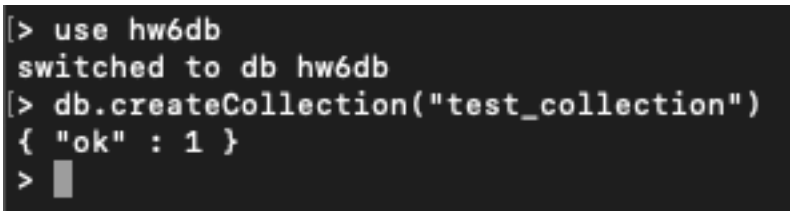
a. Create Database:



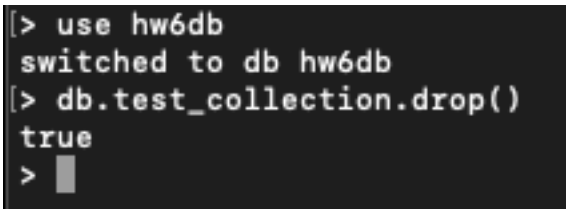
b. Drop a Database:



c. Creating a Collection:



d. Dropping a Collection:



e. **Insert a Document:**

```
> db.test_collection.insert({ title: "Mongo Db Practice", description: "This is my first MongoDB document" })
WriteResult({ "nInserted" : 1 })
>
```

f. **Query a Document:**

```
> db.test_collection.find().pretty()
{
        "_id" : ObjectId("5dec2d56c3848c73f2fc3b3f"),
        "title" : "Mongo Db Practice",
        "description" : "This is my first MongoDB document"
}
>
```

g. **Update a Document:**

```
> db.test_collection.update({ 'title':'Mongo Db Practice'}, {$set:{'title':'New MongoDB Practice'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
```

h. **Delete a Document:**

```
> db.test_collection.remove({title: "New MongoDB Practice"})
WriteResult({ "nRemoved" : 1 })
>
```

II. **Part Two: Real World Data Set Queries**

a. **Number of restaurants with “Sandwich” in their name:**

```
> db.restaurants.find( {name: {$regex: /Sandwich/ }}).count()
76
>
```

b. Names of all restaurants that serve French cuisine, and are located in the Queens borough:

```
> db.restaurants.find( {cuisine: "French", borough: "Queens"}, {name: 1, _id: 0}).pretty()
{ "name" : "La Baraka Restaurant" }
{ "name" : "Air France Lounge" }
{ "name" : "Tournesol" }
{ "name" : "Winegasm" }
{ "name" : "Cafe Henri" }
{ "name" : "Bistro 33" }
{ "name" : "Domaine Wine Bar" }
{ "name" : "Cafe Triskell" }
{ "name" : "Cannelle Patisserie" }
{ "name" : "La Vie" }
{ "name" : "Dirty Pierres Bistro" }
{ "name" : "Fresca La Crepe" }
{ "name" : "Bliss 46  Bistro" }
{ "name" : "Bear" }
{ "name" : "Cuisine By Claudette" }
{ "name" : "Paris Baguette" }
{ "name" : "The Baroness Bar" }
{ "name" : "Francis Cafe" }
{ "name" : "Madame Sou Sou" }
{ "name" : "Crepe 'N' Tearia" }
```

c. List of boroughs ranked by number of Italian restaurants:

```
> db.restaurants.aggregate([
... { $match: {cuisine: "Italian"} },
... { $group: {
... _id: "$borough",
... "Number of Italian Restaurants" : {$sum:1} } },
... {$sort : {
... "Number of Italian Restaurants" : -1} }
... ])
{ "_id" : "Manhattan", "Number of Italian Restaurants" : 621 }
{ "_id" : "Brooklyn", "Number of Italian Restaurants" : 192 }
{ "_id" : "Queens", "Number of Italian Restaurants" : 131 }
{ "_id" : "Staten Island", "Number of Italian Restaurants" : 73 }
{ "_id" : "Bronx", "Number of Italian Restaurants" : 52 }
>
```

d. Top 5 German restaurants in Manhattan that have the highest total score:

```
> db.restaurants.aggregate([
... { $match: {"borough" : "Manhattan", "cuisine" : "German" } },
... { $unwind : "$grades" },
... { $group : {
... "_id" : "$name",
... "total_score" : { $sum : "$grades.score" } } },
... { $sort : {"total_score" : -1 } },
... { $limit: 5 }
... ])
{ "_id" : "Edi & The Wolf", "total_score" : 105 }
{ "_id" : "Blaue Gans", "total_score" : 103 }
{ "_id" : "Sigmund Pretzel Shop", "total_score" : 71 }
{ "_id" : "Hallo Berlin", "total_score" : 67 }
{ "_id" : "Loreley Restaurant", "total_score" : 58 }
>
```

e. Names of the restaurants in the area that have a score greater than 75:

```
> db.restaurants.aggregate([
... { $match : {
... "address.coord.0" : {$gte : -74, $lte : -73.5},
... "address.coord.1" : {$gte : 40.5, $lte : 40.7},
... "grades" : { $elemMatch : {"score" : {$gt : 75} } } }
... } },
... { $group : {"_id" : "$name"} }
... ]).pretty()
{ "_id" : "Georges Restaurant" }
{ "_id" : "Cheikh Umar Futiyu Restaurant" }
{ "_id" : "Pino'S La Forchetta" }
>
```