101 MongoDB Introduction Demos

GitHub: https://github.com/rlacey2/MongoDBExamples_1_to_3_101

March 2018: Updated to mongo@3.0.4 and server files renamed.

To experiment with the 3 examples here, clone the above project to your local machine and open a command window in the folder where you installed the clone and type **yarn install**

Note: These examples are using an expired test SSL certificate, you may need to change browser settings when prompted.

Run all examples using nodemon or npm, use Control-C to exit the server in the command window and restart or change the example.

mlabs https://mlab.com/

These examples use an existing database at https://mlab.com/ with the follow settings to access.

URL : mongodb://testreadonly:testreadonly@ds053858.mlab.com:53858/testing01

username: testreadonly

password: testreadonly

These values are all used on line 60 of the code

Run each example separately at the command window:

Example 1: nodemon server1.js

Connect to the remote database instance and try to insert the test data. Since the user only has read permissions the insert operation will fail as not authorized. Relevant results:

```
Part 1
2018-03-20T23:01:19.219Z
C:\Users\rlacey\Downloads\b\mongo_1_3/_ngClient
connected to the mongoDB using ^3.0.4
error saving student
{ MongoError: not authorized on testing01 to execute command { insert: "students", documents: [ { name: "bloggs, joe", c
ourse: "ssd", year: 4, _id: ObjectId('5ab192bf3a055b25401cd1f4') } ], ordered: false }
    at C:\Users\rlacey\Downloads\b\mongo_1_3\node_modules\mongodb-core\lib\connection\pool.js:595:61
```

If you remove the comment block named Alpha, by removing the /* at line 80 and the */ at line 97 you will run into an undefined variable error for stdCollection as the asynchronous connection to the database may not have completed yet. This proves that the call to the cloud has an unpredictable delay and you must wait for the cloud asynchronous response.

```
Part 1
Part 2
this insert should produce an immediate error
stdCollection:
undefined
C:\Users\rlacey\Downloads\b\mongo_1_3\server_mlab_01_ro.js:88
                              stdCollection.insert({name: "bloggs, joe", course: "ssd", year : 4})
                                            ^

TypeError: Cannot read property 'insert' of undefined
```

This is expect behaviour, and must be handled by promise patterns or equivalent in the code in realistic projects, by ensuring the connection is live before trying a CRUD operation.

Example 2: nodemon server2.js

This example allows a different user with write permissions to insert into the database. See line ~58.

Using your own mlabs account, you will need to create a username XXXXXX and password YYYYYY, with write permissions to your database and replace as appropriate in the code at line ~58.

```
var connectURL = "mongodb://nodejs:nodejs@ds053858.mlab.com:53858/testing01";
```

```
2018-03-20T23:16:22.864Z
connected to the mongoDB using ^3.0.4
student entry saved
```

Example 3: nodemon server3.js

Introduces API to return results from the server to the client.

Use the browser or Postman/chrome (https://www.getpostman.com/docs/introduction) to test this example. This example uses find() to return data, think of this as being similar to sql's SELECT.

Using .find()

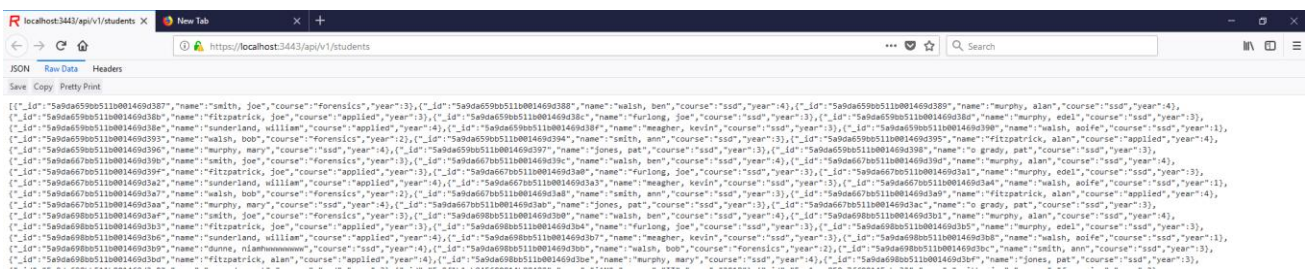
https://docs.mongodb.com/v3.4/reference/method/db.collection.find/

This code is not separating out different concerns of functionality (needs refactoring).

To prove that this example is working paste the following into a browser window:

https://localhost:3443/api/v1/students

This should return the raw JSON data for the students as an array from in the mongDB.



rlacey@wit.ie 2018

In the code at line 75 for this file you will see the code:

app.get('/api/v1/students', function(req, res) { …

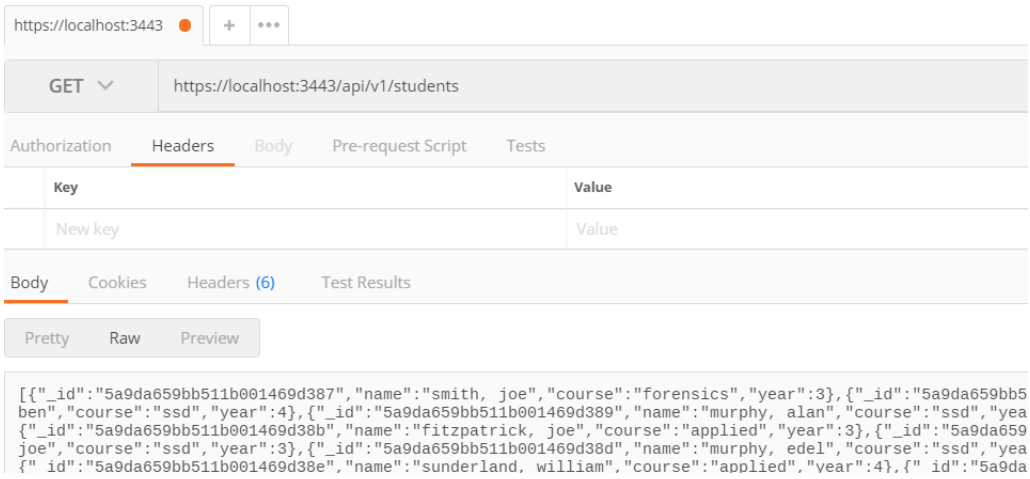
This is the function that serves the data back in the browser and makes use of the find() function of MongoDB.

Using Postman https://www.getpostman.com/ :

This is a very handy tool for experimenting and testing calls to API endpoints. It is a modern version of the very popular command line tool curl.

You may get an error which requires attention: **Self-signed SSL certificates are being blocked:**

Fix this by turning off 'SSL certificate verification' in *Settings* > *General* via the  near the top right.



These 3 examples are only proof of concept to get you started.

In reality we need to use a MongoDB for persistence that will allow CRUD behaviour.