Module 3 Assignment Lab: MongoDB Migration Node Script

The assignment lab for this module is to build a migration script to move data from one MongoDB database to another. Unlike the tutorial labs, there will be no step by step instructions but all of the information you need to know should be in the modules. Please attempt to solve the assignment lab on your own before viewing the solution.

MongoDB Migration Node Script

You work at a Bitcoin exchange company. For some reason, the customer data is missing its full address. You have customer data only with the street address (building number and street name) but no city, state, country. Also, phone numbers are missing too. Luckily, your friends were able to restore the address information from a backup replica of a MongoDB instance. You need to write a migration/restoration script which will merge the data from the two sources.

You have millions of records so you need to create a script which can run queries to the database in parallel. You don't know what is the optimal number of customers to insert into a database at a time so you need to write the program to allow for a variable number of documents to be able to be updated at once. This will help to determine if it's better to update in groups of 10, 50 or maybe 500 at a time.

You are provided with two sample JSON files `customer-data.json` and `customer-address-data.json` which contain 1000 documents/objects (remember, the real data will have 1000000+ objects). Assume that the order of the objects in each file correlates to objects in the other file.

You can download the files here:

m3-customer-data.json

m3-customer-address-data.json

The end result of the customer object should have address fields and phone numbers. For example:

```
{ id: '100',
   first_name: 'Augustin',
   last_name: 'Chrichton',
   email: 'achrichton2r@studiopress.com',
   gender: 'Male',
   ip_address: '154.24.68.112',
   ssn: '480-83-7668',
   credit_card: '3543947705552628',
   bitcoin: '14VL3QyC2qS4f9pdC8rtjbjURxi5ysa7hU',
   street_address: '98207 Talmadge Road',
   country: 'United States',
   city: 'Saint Petersburg',
   state: 'Florida',
   phone: '813-448-6128' },
```

Use the `mongodb` native driver and `async` modules. Read the number of objects to process in a single query from a CLI argument. For example, `node migrate-data.js 1000` will run 10 queries in parallel out of 1000 objects while `node migrate-data.js 50` will run 20 queries in parallel out of the same 1000 objects.

Use the `async` module from npm (or a similar module) and its `parallel()` method to implement the lab. For example, `tasks` is an array of functions and they will run all at the same time. When they are done, the callback will be executed:

```
async.parallel(tasks, (error, results) => {
  if (error) console.error(error)
  console.log(results)
})
```

For the full `async` documentation, see https://caolan.github.io/async.

Submission Instructions

To submit the assignment for feedback, put all the program files into GitHub and post a link to your code repository in the Assignment 3 Submissions section of the forums.

In addition to providing the GitHub link, please also answer the following questions about your project:

1. Walk us through the design of your project. Why did you design your project the way you did? What difficulties did you overcome?

2. How did you test your project to verify that it works?

3. Let us know if anything doesn't work as intended so your reviewers can know ahead of time

A link to the forums submissions section is provided below:

Assignment 3 Submissions

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Feedback Instructions

Please provide feedback to your fellow students!

Please comment on the following:

1. Does the code work correctly? Download the code from the GitHub link and test it by running it and checking if the MongoDB database is populated correctly. Make sure to run 'npm install' to download all the required dependencies and make sure you have a MongoDB instance running to hold the data.

2. How does the code quality look? Does it make sense? Would you do anything different? What did you like about the code design?

Sample Feedback:

1. The code worked as intended. I checked the MongoDB database using the shell and verified that all the data was migrated correctly.

2. The code had bad styling and the submitter kept reusing sections of code over and over. I would have separated certain parts of the code into a separate function.

Feedback Honor Agreement

1/1 point (graded)
Please review at least 2 assignment submissions in the forums. Try to review ones that haven't been reviewed yet. Once you have down so you can indicate that you have completed the assignment feedback by answer the question below.

I have reviewed at least 2 assignment submissions.

- I do not intend to review any assignments
- I have reviewed at least 2 assignment submissions ✔

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