**ITE5315 Assignment 4**

**Submission Deadline:** Tuesday, Mar 26 @ 11:59pm

**Assessment Weight:** 7% of your final course Grade

**Objective**: To explore more on developing db-driven Node/Express app

**Description:** Using the concepts of week8,9,10 we are going to develop a new Node/Express app program extracting data from databases. We are going to design a simple app and using MongoDB Atlas based on the given instructions on Q1 and Q2.

**Question 1)** You are asked to develop a sample Node/Express app which interact with MongoDB database in Atlas. Complete the following steps and take screenshot of the outcome of each step:

**Step1:** Create new Node/Express app (in new folder named “Asn4-mongo-yourname”) as follow:

* Add the following dependencies to your project

|  |  |
| --- | --- |
| o | "dependencies": { |
| o | "express-validator": "^6.14.2", |
| o | "express": "^4.18.1", |
| o | "mongoose": "^6.7.2" |
| o | } |

* Make sure to have the following project structure:

|  |  |
| --- | --- |
| Create a “config” folder which contains  “database.js” (will be used for database connection parameters for Mongodb.)    Create “models” folder which contains “employee.js” (will be used to create employee schema and model.)    Create “app.js” in the project root.    Make sure to have proper project settings and dependencies in “package.json” |  |

**ANS:**

A screenshot of a computer program

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**Step2:** Using the attach file (codenippet-mongo.txt), copy/paste the related code to “config/database.js”, “model/employee.js”, and “app.js”.

* *Note: Create a new MongoDB database in your local machine and update the “url” in database.js accordingly*

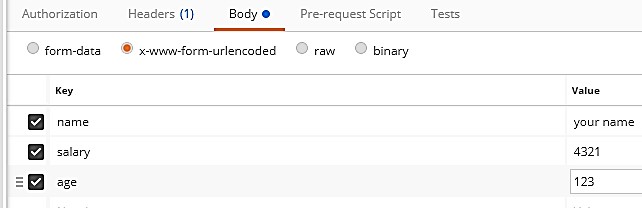
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**Step 3**: Run the application and test it using the following routes:

* A) Open Postman, choose POST method and use the URL <http://localhost:8000/api/employees> o In the Body, choose “x-www-form-urlencoded” and add three pair of key values as follow o Click on send. What is the output?

o



ANS- Here I have add the three key value pair using thunder client but I get the error because of the call back function have used in post method during create() method.

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* + Check the console in VScode, what is the output?   
    - I got the error because of the callback function in post method of [http://localhost:8000/api/employees.](http://localhost:8000/api/employees)
  + Check the Compass, is the new record added to “Employee” collection in Database?
* I had check the compass but I did not find any inserted data.
* B) Open browser and enter <http://localhost:8000/api/employees>. What is the output?
* I had opened the browser and I got the error over there.

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* C) Using any \_id of any employee records in database, run the following query in the browser:
  + <http://localhost:8000/api/employees/618cf962f36b27c5379212b7>. What is the output?

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**Step 4**: Base on your observation, answer the following questions:

1. How does the Step3: A, B, C work? Explain the workflow, route, and the way the query executed.   
   - Here first import all the required modules and the check connect the database using connection string which create in database.js file.

-After, I insert key and value in thunder client and with post method then the post API fire and try to create collection in database which we give in connection string. But create() method has the callback function did not insert the value into database and it throw an error. Because the callback function is deprecated after the version 6 of mongoose.

-If we try to enter the url into browser and try to get the inserted data.  
we get the error because get API has callback function.

-- If we attempt to retrieve information using an ID and encounter an error due to the callback, the same error will occur.

1. What is the role of:
   1. module.exports = mongoose.model('Employee', EmpSchema);

* Above line of code export the model name “Employee” and schema define by “EmpSchema”. It used to import in other files to perform CRUD operation.
  1. Employee.findByIdAndUpdate
* Simple It used to find the document by Id and update it. This function is commonly used to update specific fields of a document.

1. Using the idea of Step3:C, try to update one of the record in the employee table. Find related route ☺ in the code and explain how it works.

* First I update the code and convert into promise so it work properly to update the record.
* Update the filed with value and insert into db.

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1. Using the idea of Step3:C, try to delete one of the record in the employee table. Find related route ☺ in the code and explain how it works.

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Here first, fire the api and then get the id and the delete according given id.

After that send the response.

*Note:*

* 1. *It is important to explain how this app works in your video demonstration*

**Question 2)** You are asked to redesign Question 1 by using the given dataset of Assignment2.

* Step 1: Create a new MongoDB database in Atlas based on the given dataset of Assignment2.
* Step 2: Redesign the route/code in Question1 and set it up to work with book-data instead of employee data.
  + - You may need to change the “model” and routes.

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* + - Your app should have the following features and demonstrate how app works using Postman/ThunderClient. (similar to Q1):
      * Show all book-info

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* + - * Show a specific book (based on the \_id or isbn)

A computer screen with text on it

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* + - * Insert a new book

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* + - * Delete an existing book (based on the \_id or isbn)

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* + - * Update "title" & “price” of an existing book (based on the \_id or isbn)

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o Using Handlebar and Form complete the followings (*hint:use ideas from Assingment2*):

* + - * Show all book-info

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* + - * Insert a new book

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* Step 3:Using your creativity, Add a new functionality to this app.
* Step 4: Deploy the Question2 app (Cyclic)

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I try to upload on Cyclic but it show me an error.

* *Note:* o *It is important to explain how this app works in your video demonstration.*

**Question 3)** Open the attached sample JS file. This program use setTimeout() to simulate a running two tasks in asynchronous way. Complete the following steps.

* Step 1: run it using nodemon. Look at the output of the program.

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* Step 2: What if you remove wait from Task1, any error? Explain what you have learned.
* If we remove the await then i got the error because it is an asynchronous function that returns a Promise.
* If we remove await then it not wait for promise to resolve.

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* Step 3: What if you remove all await/async from the task1 and 2. How do you explain changes in the output compare to Step 1?
* If I remove all async and await it will become synchronous.
* Task 2 is execute immediately after Task1 is called without waiting for Task1 to complete.
* Task2 print ‘iter’ before findAll print.

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* Step 4: Bonus: Can you design the given functionality/program using Promise?

Yes, try to implement promise in my code.

Assignment Submission:

* Add the following declaration at the top of .js files

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* \*\*\*

* + ITE5315 – Assignment 4
  + I declare that this assignment is my own work in accordance with Humber Academic Policy. \* No part of this assignment has been copied manually or electronically from any other source \* (including web sites) or distributed to other students.

\*

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* Compress (.zip) the files in your Visual Studio working directory (this is the folder that you opened in Visual Studio to create your client side code).

Important Note:

* Submitted assignments must run locally, ie: start up errors causing the assignment/app to fail on startup will result in a **grade of zero (0)** for the assignment.
* **LATE SUBMISSIONS for assignments**. There is a deduction of 10% for Late assignment submissions, and after three days it will grade of zero (0).
* Assignments should be submitted along with a video-recording which contains a detailed walkthrough of solution. Without recording, the assignment can get the maximum of 1/3 of the total.