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LEARNING DIARY, SOFTWARE DEVELOPMENT SKILLS: FULL-STACK MODULE

MODULE TASKLIST:

NODEJS:

What I learned:

- Knowledge about the definition, benefits, best types of projects for NodeJS.
- Knowledge about NPM, Node Modules
- Download Nodejs for Windows
- Create package.json for a project
- Understand NodeJS core fundamentals such as path, url, fs, event, https
- Create a basic server
- Know how to deploy a server to Heroku

MONGODB:

What I learned:

- Know how to download MongoDB and understand MongoDB fundamentals.
- Understand how to work with MongoDB Compass graphical interface and MongoDB Atlas.

Basic commands to display all database in mongo shell

[illegible]

Basic commands to add one row and multiple rows in collection

```

    # get collections
    @db.posts.insert(
        {
            'title': 'Post one',
            'body': 'Body of post one',
            'category': 'technology',
            'date': Date(),
        },
        {
            'title': 'Post two',
            'body': 'Body of post two',
            'category': 'technology',
            'date': Date(),
        },
        {
            'title': 'Post Three',
            'body': 'Body of post three',
            'category': 'news',
            'date': Date(),
        },
        {
            'title': 'Post Four',
            'body': 'Body of post three',
            'category': 'entertainment',
            'date': Date(),
        },
    )

    # insert documents
    "insertedDocs": true,
    "insertedDocs": [
        {
            "_id": "666c1a380156074a198cfed4",
            "title": "Post one",
            "body": "Body of post one",
            "category": "technology",
            "date": "2023-09-01T00:00:00Z",
            "status": "active"
        },
        {
            "_id": "666c1a380156074a198cfed5",
            "title": "Post two",
            "body": "Body of post two",
            "category": "technology",
            "date": "2023-09-01T00:00:00Z",
            "status": "active"
        },
        {
            "_id": "666c1a380156074a198cfed6",
            "title": "Post Three",
            "body": "Body of post three",
            "category": "news",
            "date": "2023-09-01T00:00:00Z",
            "status": "active"
        },
        {
            "_id": "666c1a380156074a198cfed7",
            "title": "Post Four",
            "body": "Body of post three",
            "category": "entertainment",
            "date": "2023-09-01T00:00:00Z",
            "status": "active"
        }
    ]
}

```

Basic commands to get all rows and formatted all rows in collection

```
db.posts.find().pretty()
{
  "_id" : ObjectId("616c1a1805d674a398cf8b7"),
  "title" : "Post One",
  "body" : "Body of post one",
  "category" : "News",
  "likes" : 3,
  "tags" : [ "news", "events" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:41:03 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b8"),
  "title" : "Post Two",
  "body" : "Body of post two",
  "category" : "Technology",
  "likes" : 0,
  "tags" : [ "technology" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b9"),
  "title" : "Post Three",
  "body" : "Body of post three",
  "category" : "News",
  "likes" : 0,
  "tags" : [ "news" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8ba"),
  "title" : "Post Four",
  "body" : "Body of post four",
  "category" : "Technology",
  "likes" : 0,
  "tags" : [ "technology" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
```

Basic commands to sort all formatted rows in collection in ascendant/descendant order

```
db.posts.find().sort({ title: 1 }).pretty()
{
  "_id" : ObjectId("616c1a1805d674a398cf8b7"),
  "title" : "Post One",
  "body" : "Body of post one",
  "category" : "News",
  "likes" : 3,
  "tags" : [ "news", "events" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:41:03 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b8"),
  "title" : "Post Two",
  "body" : "Body of post two",
  "category" : "Technology",
  "likes" : 0,
  "tags" : [ "technology" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b9"),
  "title" : "Post Three",
  "body" : "Body of post three",
  "category" : "News",
  "likes" : 0,
  "tags" : [ "news" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8ba"),
  "title" : "Post Four",
  "body" : "Body of post four",
  "category" : "Technology",
  "likes" : 0,
  "tags" : [ "technology" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}

db.posts.find().sort({ title: -1 }).pretty()
{
  "_id" : ObjectId("616c1a1805d674a398cf8ba"),
  "title" : "Post Four",
  "body" : "Body of post four",
  "category" : "Technology",
  "likes" : 0,
  "tags" : [ "technology" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b9"),
  "title" : "Post Three",
  "body" : "Body of post three",
  "category" : "News",
  "likes" : 0,
  "tags" : [ "news" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b8"),
  "title" : "Post Two",
  "body" : "Body of post two",
  "category" : "Technology",
  "likes" : 0,
  "tags" : [ "technology" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:42:00 GMT+0300 (FLE Daylight Time)"
}
{
  "_id" : ObjectId("616c1a1805d674a398cf8b7"),
  "title" : "Post One",
  "body" : "Body of post one",
  "category" : "News",
  "likes" : 3,
  "tags" : [ "news", "events" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:41:03 GMT+0300 (FLE Daylight Time)"
}
```

Basic commands to count rows in collection

```
> db.posts.find({ category: 'news' }).count()
0
> db.posts.find().count()
4
```

Basic commands to find one row in collection

```
db.posts.findOne({ category: 'News' })
{
  "_id" : ObjectId("616c1a1805d674a398cf8b7"),
  "title" : "Post One",
  "body" : "Body of post one",
  "category" : "News",
  "likes" : 3,
  "tags" : [ "news", "events" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:41:03 GMT+0300 (FLE Daylight Time)"
}
```

Basic commands to update one row in collection

```
db.posts.update({ title: 'Post Two' },
... {
...   title: 'Post Two',
...   body: 'New body for post 2',
...   date: Date()
... },
... {
...   upsert: true
... })
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
```

Basic commands to delete one row in collection

```
> db.posts.remove({ title: 'Post Four' })
WriteResult({ "nRemoved" : 1 })
```

Basic commands to add index in collection

```
> db.posts.createIndex({ title: 'text' })
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
```

Basic commands to search text in collection

```
db.posts.find(
... {
...   $text: {
...     $search: "\"Post One\""
...   }
... }
)
{
  "_id" : ObjectId("616c1a1805d674a398cf8b7"),
  "title" : "Post One",
  "body" : "Body of post one",
  "category" : "News",
  "likes" : 3,
  "tags" : [ "news", "events" ],
  "user" : { "Name" : "John Doe", "Status" : "author" },
  "date" : "Sun Oct 17 2021 15:41:03 GMT+0300 (FLE Daylight Time)"
}
```

EXPRESSJS:

What I learned:

- Knowledge about the definition and the advantages of ExpressJS.
- Download and use Postman which is an HTTP client to make requests(GET, POST, PUT, DELETE) to server
- Know about middlewares and how to handle them
- Understand how to render static folder in ExpressJS
- Know how to get all, get one, create, update, delete member in ExpressJS
- Understand the method to render templates using express-handlebars
- In the future, I have to learn how to send JSON web tokens to authenticate

ANGULAR:

What I learned:

- Understand the Angular fundamentals as well as know the structure of an Angular project
- Know how to use CLI to create components and services
- I am working with React so when move to Angular framework, the logic is not different but the syntax is tricky for me to remember and understand
- Using two-way data binding with the ngModel directive
- Know some condition syntax in Angular: *ngFor, *ngIf...
- Know lifecycle hook: ngOnInit
- Know how to defined routes, a redirect route, and a parameterized route.
- Know how to share a service among multiple components
- Use HTTP and add post, put, delete, get method to a service
- Learn how to use observables
- Angular is more difficult for me because of its syntax and the flow of code. I need to spend more time on researching about this framework.

COURSEWORK (MEAN STACK):

What I learned:

- This coursework project include Rest API, Token Generation and Authentication, CORS, Mongoose ODM, Angular 2, Angular2-JWT, Auth Guard.
- Apply the knowledge about NodeJS, ExpressJS and Angular to create a fullstack application (MEAN stack)
- Understand how to create user model and schema and create register, authenticate functionalities in back end and connect to the front end.
- Deploy the MEAN application to Heroku and use MongoDB Atlas to set up database because mLab's account has been closed since February 2019.
- Because the technology is updated everyday so there are some unexpected bugs happened during the time I studied this coursework.

PROJECT (APPOINTMENT APP)

What I learned:

-I understand more about REST API with Get, Post, Put, Delete, Get By Id method and the structure of an Angular application.

-I have a lot of problems but I tried to figure them out through Stack Overflow and Github as well as some other resources.

- In the future, I will implement the authentication process in this Appointment application which is similar with the Coursework tutorial.