Node.js – Team 3

Problem Statement

Over the course of the next month or so, you will be building a distilled clone of GitHub. The service should allow you to create an account and login to the website. A user can then create repositories (with support for metadata – for eg. a README file) to which tarballs can be uploaded. At a later stage, you will extract these tarballs and walk through the directory structure as well. Any user can download the tarballs.

You will only be building the backend. The service will be accessible via a REST API. The project will be developed incrementally.

Task 1

In this task, you will be doing the following:

1. Create the basic structure for your project following relevant Node.js standards. Proper directory structure is an absolute must.
2. Create a schema and model for the User entity and the Repository entity using MongoDB (& Mongoose) and link them together.
    a. You do not have to handle authentication for this task.
    b. Even though the schema is dynamic at this stage, try to account for as many fields as possible.
3. Develop a REST API to perform CRUD operations on the above entities.
    a. POST – create a document
    b. GET – get a specific document or a list of documents
    c. PUT – update a document
    d. DELETE – delete a document
4. Come up with a detailed list of functionalities that you think would suit an application of this nature. Do not worry about whether they are implementable or not.

Notes

- For testing your endpoints, use Postman. Create a collection and add all your endpoints to it with basic descriptions for each.
- Ensure that you use async/await and relevant ES6 syntax only. Do not use callbacks.
- Optionally, set up ESLint and a code formatter (for eg. Prettier) for the project. You will have to do this at some stage or the other anyway.
- If you are not conceptually clear with what REST is or what an API is, go through the theory and make sure you understand what you're building before you actually build it.

Submission

Create a public repository on GitHub and create a branch called **task_1**. Add commits incrementally to this branch. After you are done with the entire task, merge it with the **master** branch but do not remove the branch. As you progress, you will be creating copies of the master branch for each task, and will be working on those only.

Resources

- General overview: https://www.robinwieruch.de/mongodb-express-setup-tutorial
- Git and GitHub Crash Course: https://www.youtube.com/watch?v=SWYqp7iY_Tc
- MongoDB and Mongoose:
  - https://docs.mongodb.com/manual/crud/
  - https://mongoosejs.com/docs/guide.html
  - https://developer.mozilla.org/en-US/docs/Learn/Server-side/Express_Nodejs/mongoose#Mongoose_primer
- For project structuring: https://github.com/djunicode/masters-information-portal/tree/development
- For ESLint setup: https://www.youtube.com/watch?v=SydnKbGc7W8

Timeline

You have one week for this task. The task is relatively simple so try to spend more time on understanding the basics and read as much as you can about backend services and web applications. Get back to us for any doubts or queries. All the best!