Lappeenrannan-Lahden teknillinen yliopisto LUT

School of Engineering Science

Software Development Skills

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LEARNING DIARY, BACK-END MODULE

**18.3.2020 – Starting off**

I finally managed to have some time and motivation to start completing this course. Originally, I planned to complete this back-end course during the autumn simultaneously with front-end course, but for some reason I just did not. The primary reason for me to learn back-end for now is that I might need some understanding about the subject with my summer job in which I need to work with web development and front-end stuff.

I watched the first short introduction video to REST APIs. I already knew what APIs are and how they are used but did not know that one could access them so easily through a browser. There is not much to say about this short introduction so I will move on to the next video whenever I have the time to do so. At least I managed to start the course and now it is easier to continue on.

**19.3.2020 – Getting to know the basics**

I wanted to actually begin learning things, so I started watching the NodeJS tutorial. I was already (somewhat) familiar with Node from the Front-End course and I understood everything in the tutorial quite well.

I followed the tutorial through and tried to keep up with writing everything seen on the video myself, but I have to say there were quite many things to remember. In overall, the semantics of the http server are not that complicated, it is just all the smaller bits that start overwhelming me. At least I have a working example code that I can refer to when figuring out the course project, and based on the Front-End module I did earlier, most of the learning will happen during the project.

**26.3.2020 – MongoDB**

This time I started learning on MongoDB. I did not know anything about NoSQL databases earlier so this was a new subject for me. Currently I have only learned about relational databases and database management in overall, but this should not differ that much from the overall schema.

I started liking the idea of using normal JavaScript syntax for managing the database as it feels more natural for me than SQL queries for example. However, all of the commands are new and need lot of learning before I understand them fully. I also liked the MongoDB Compass a lot since visualizing the changes on tables can – at least for me – make the development process faster.

**15.4 – ExpressJS**

I was bored in the middle of night and was not really feeling too tired, so I started watching the tutorial about Express. At first, I did not understand almost anything and was quite overwhelmed about all the information that was slapped on my face. Everything made some sense as they were similar that I had learned before, but I just mainly copy pasted everything without understanding anything.

Some subjects on the tutorial went straight past me and I remember nothing about them, but I will come back to this tutorial if I ever need to use handlebars for example. I started comparing this course module to the front-end one and realized that I enjoy more doing UI/UX things which I would be doing during the summer as a summer job. I still feel like it is important to learn these subjects as broader knowledge is never a bad thing.

**22.4 – Last REST tutorial**

This tutorial contained basically all the things done earlier but in a much more compact package. I felt like I started to remember things as I got to learn everything once again with a slightly different perspective.

I also started thinking about the course project as I had no idea what I should create. As no ideas come up to my mind, I just started coding basic back-end functionality and a login API that would encrypt passwords and compare login details to ones in database.

**23.4 – Finally got an idea**

The next day I still had not thought about any ideas and decided just to continue on working the back-end’s functionality. After figuring out registration and other stuff an idea came up to my mind. I could do a “copy” of one old website that would just display pictures – or memes in this case – to users but with added functionality like login and user upload.

I put up a simple React front-end to start testing everything I already did. After that I faced probably the biggest problem during this project: Uploading files. After some research I found this library called Multer which could handle extracting files from request bodies. But Multer was not just enough, and I needed to also pipe the filestream to actual file on the server’s filesystem. I got some help from multiple different websites and eventually got it working. This took a lot of time since newest versions of these libraries did not support one thing while older versions did not support other things.

**26.4 – Token authentication**

Today I did not do too much but managed to complete token authentication for the login just for learning purposes. It does not really add anything to the program but whenever the user logs in, it is given a token that is valid for one hour and cannot do some actions on the app like uploading a meme if server doesn’t receive a valid token. I did not use any authentication libraries like Auth0 as I just sent a simple string of characters to the client from the server which was also saved in the database.

**29.4 – Making the main features to work properly**

This time I finalized the file system properly. E.g., I generated unique filenames so that files with duplicate names are not overwritten. I also made sure that pictures are displayed properly on the front-end app and the communication between the client and server functions as intended an uploading and deleting files is working.

**9.-12.5 – Finalizing the project**

It took some time to continue the project as exams took all my time for over a week and then I actually needed to already start my summer job. My original schedule got quite delayed, and the application is not 100% functioning properly, but I think it is enough for this course to pass. The final things I made on the project were mainly UI fixes and making sure it is possible to somewhat use the application.

After just over a week on my summer job I can already say I would not have understood half of the things I already have faced in my front-end developer position. I am so glad I started this course even though this was just an extra work for me in the middle of spring’s main exam weeks. I am also currently quite busy with work and other things and therefore I do not even have enough time to finalize this learning diary, but I think I have brought my thoughts to light.