

Lappeenrannan teknillinen yliopisto

Software Development Skills: Full-Stack 2023-24

Manish Kumar, 002042176

LEARNING DIARY

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Node.js

10.11.2023

I went through all the details provided in the "Course Overview" and "General Course Information" sections. This gave me a comprehensive understanding of the course objectives and the necessary tasks to successfully complete it.

One of the key takeaways was gaining a foundational understanding of Node.js. I delved into its fundamental features, such as its single-threaded nature and non-blocking I/O calls, distinguishing it from other technologies like PHP. I grasped its reliance on the Event Loop to manage concurrency effectively. Additionally, I explored practical scenarios where Node.js finds application.

Another crucial aspect I covered was npm and its role in package management, along with the utilization of package.json. I extended my learning to setting up a GitHub repository and configuring Visual Studio Code for Node.js development. Following a step-by-step tutorial, I created a basic web server and committed the changes to the repository. Although, I initially picked the bitbucket to work on this project and went to github after losing a few changes.

MongoDB

10.11.2023

I delved into MongoDB, and my exploration primarily focused on MongoDB Atlas, serving as a valuable refresher for my existing knowledge. One notable aspect of my learning journey was gaining proficiency in utilizing the command line interface. Although it boasts a range of capabilities, I'm still assessing the extent to which I'll personally leverage it.

For the installation of MongoDB on my Mac OS Sonoma system, I opted for the Homebrew method, which deviates slightly from the instructions tailored for Windows. This hands-on experience provided insights into the nuances of the installation process on different

platforms. Additionally, I familiarized myself with the basic syntax and operations of MongoDB, laying a solid foundation for practical application.

Express

11.11.2023

I dived into Express.js, with a significant portion of the content serving as a helpful refresher for me. However, a notable addition to my knowledge was the exploration of template engines. In my previous experiences, I predominantly utilized Express in React projects alongside static files, rendering template engines less relevant.

Fortunately, my prior experience with template engines made it relatively easy for me to grasp the principles involved. It's valuable to understand how to achieve similar functionalities using Express, expanding my toolkit and providing versatility in handling different types of projects.

Angular

11.11.2023

I gained extensive insights into Angular, a framework that was entirely new to me. While I had heard about it before, this was my first hands-on experience, making almost every aspect a fresh learning opportunity. Among the crucial concepts I grasped were creating an app using the CLI, generating components with the CLI, understanding data bindings (both one-way and two-way). Despite not having a clear picture of how extensively I'll use Angular in the future, acquiring the basics was invaluable. Currently, I have a preference for the React library and intend to use it in my ongoing projects. I believe it's essential to establish a solid foundation in one technology before venturing into others, and for now, React aligns well with my project requirements.

As I reflect on this learning diary, I acknowledge that the future usage of Angular in my projects remains uncertain. Currently, my allegiance lies with the React library, a technology I've come to appreciate and find well-suited for my ongoing projects. The philosophy of

delving deep into one technology before venturing into others resonates with me, and for now, React provides the robust foundation I seek for my current endeavors. Nevertheless, having a grasp of the basics of Angular adds a valuable layer to my skill set, offering versatility in approaching diverse technological landscapes.

MEAN Stack

12.11.2023 – 13.11.2023

In the course of following the tutorial, I set up Express and routing as outlined in part 2. Initial challenges arose when importing the users module due to a path discrepancy, eventually resolved by adjusting the import path. Moving on to part 3, I successfully created a User model and added a new user entry in MongoDB using Postman. I then learned to generate JSON web tokens using Passport.js, overcoming an error related to the format of the user object returned by a mongoose query. Debugging route protection issues led to the discovery of a missing whitespace when generating JWT tokens. Angular was initialized in the app, benefiting from prior tutorial knowledge. Bootstrap 4 nuances were navigated, particularly in aligning navbar items. The process of adding a validation service involved troubleshooting a form submission issue, ultimately found to be a misunderstanding of console outputs between the backend and frontend. Further adjustments were needed to accommodate changes in Angular's HTTP module. Subsequently, login and logout functionalities were implemented, with occasional need for an Angular server restart during component updates. The app development tutorial concluded with the addition of route protection via Angular JWT, noting differences in module versions and the final step of running the build script for website deployment.

Overall, I gained a comprehensive understanding of full-stack development through my exploration of various technologies and frameworks. From setting up server-side components using Express.js, managing databases with MongoDB, and delving into authentication mechanisms with Passport.js, to incorporating Angular for dynamic front-end functionality, each step contributed to a well-rounded comprehension of the full-stack development process. Troubleshooting challenges along the way further solidified my understanding, and successfully completing the app development tutorial marked a significant milestone in consolidating my knowledge of full-stack development.