Lappeenrannan teknillinen yliopisto

School of Business and Management

Sofware Development Skills

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LEARNING DIARY, MOBILE DEVELOPMENT MODULE

LEARNING DIARY

GETTING STARTED

26 May 2022

I enrolled in the course and arrived at the course area. I looked through the course materials, and understood the purposes and the structure of the course. The course seemed to be very useful for the mobile developer career path. I would be in my second year at LUT in a few months. Time flew fast. I have found some internship positions I wanted to apply to and this course would be a valuable addition.

After looking through the given materials in depth, I made my detailed schedule to learn the basics, do the tasks, and complete the course. I aimed to finish this course in the month of June, as I have some other work in July. Summer was over sooner than I expected.

28 May 2022

I started setting up the development environment. I participated in the Fitech course GIT Open of Tampere University in Autumn 2021. I have used Git and GitHub in my subsequent projects. Therefore, I decided to skip the Version Control part.

I migrated to Ubuntu Linux in March 2022 as my Windows 11 was quite unstable. However, I have not set up VS Code on Ubuntu for Java and Android development yet, and it might take some time to do so. Moreover, VS Code at the end of the day is still just a text editor with a bunch of extensions, and does not fully support mobile development. I have very limited experience or just knew other suggested editors by name. After some Googling and trying out, I decided to go with Android Studio. Android Studio has a lot of neat features of developing a mobile app.

I installed Android Studio for Linux and created an emulator (Pixel 2 API 30), and turned on some useful features like in the first part of the 1st tutorial video.

LEARNING THE BASICS

29 May 2022

I watched the remaining part of the 1st tutorial video. In this part, I learnt about the basics of Android Studio, such as layouts' design and XML syntaxes, findViewById(), setOnClickListener(), etc. I ran it on the emulator and it was working fine.

I also learnt about debugging in Android Studio, with the major focus being the debug breakpoints. This feature will be very useful. To complement this, I also looked up Logcat. I intended to add some log methods to better track the progress of the app, and remove them once the app was done.

30 May 2022

I watched the 2nd tutorial video. I learnt about core elements in Android Studio development: Activities, Intent, putExtra(), getExtras(), etc. When I tried running the app, the emulator crashed. After spending more than an hour fixing it, I gave up and moved to USB debugging. It was much faster and more convenient. I just needed to install Android Debug Bridge (ADB) on my Ubuntu machine and everything went seamlessly.

31 May 2022

I watched the 3rd tutorial video. I learnt about ListView and ImageView, as well as how to scale the image to fit the screen of the device. Additionally, I also looked up the differences between ConstraintLayout, RelativeLayout, and LinearLayout, along with the information about RecyclerView. I won't write them here though (I'm bad at explaining stuffs in my own words).

The 4th tutorial video showed up as a recommendation in YouTube. I decided to watch it although it was not in Moodle. This was about MySQL implementation in Android development. I'm familiar with database management and I have used SQLite and PostgreSQL. I wanted to incorporate this in the app. Luckily, Android Developers have a very comprehensive documentation on SQLite.

WORKING ON THE PROJECT

4 June 2022

Brainstorming time. I needed to be creative, I came up with 3 options for my project:

- A GPA calculator;
- A shopping assistant;
- A tic-tac-toe game;

After some research and a lot of Googling, I decided to go with the tic-tac-toe game. A GPA calculator would be too simple and would not leave a lot of room for extra features. A shopping assistant on the other hand would be too complicated.

Because I'm still a beginner in Android Studio, I searched on YouTube and found a detailed tutorial for this app by Practical Coding. So then I began working on the app.

5 June 2022

I spent the day watching and implementing the 1st and 2nd part of the tutorial series.

First, I created the home screen of the app. I thought it would be nice if the app had a logo, so I found one from the PNGView. The app is for educational purpose only so it would full comply with copyright and license rule of the site. Then I created the view where players can enter their names. After that, I wrote the code that made these 2 views interactive.

Next, I created the game screen where the tic-tac-toe board would be in, and brought in the code that connected the game screen with other stuffs.

Everything has gone well so far. I made my first commit and pushed the project to GitHub.

7 June 2022

Time for the 3rd and 4th part of the series. I followed the guide and made the Java class that would be the 3x3 tic-tac-toe board, then I place the board on to the game screen. I moved on to make the placement of X and O possible. The last one was the "Game Logic" – the mechanism the decided who won and lost, as well as methods that form "the brain" of the app.

The app crashed once during testing. It turned out I missed some parts of the guide.

8 June 2022

This day was for the 5th and 6th part. I finished the "Game Logic" and methods that would draw a winning line when one player won.

I tested the app several times. Everything seemed okay, the tic-tac-toe part is done. Now I just needed to implement SQLite into the app. I decided to add a record – a list of previous matches. The user could delete a match if one wanted to do so.

I did some cleaning up on my machine and accidentally modified the project folder the day before without knowing. When I pulled and then pushed the project later, I created a mess. I decided to make a new repository and uploaded to it the final version.

11 June 2022

I spend the day reading and learning the documentation on SQLite from Android Developers. It didn't seem to be difficult, only a bit long and had many classes and methods. I created a test project to write and read from an SQLite database. After playing around for a few hours, I figured out how to do this. I just needed to incorporate it to the app.

12 June 2022

After working with the SQLite methods for a few hours, I successfully added the record feature to the app. However, the match details' view was still lacking something. I thought it would be nice if an image of the finished game board was also displayed there. I spent the rest of the day finding a way to do so.

15 June 2022

I have asked around many friends and acquaintances, some are also Android developers, but I found no viable solutions to this. I decided that it was enough. I have implemented what I could and what I know. Time to wrap everything up and submit the project.