

Lappeenrannan teknillinen yliopisto  
School of Business and Management

Software Development Skills

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**LEARNING DIARY, MOBILE DEVELOPEMENT MODULE**

## LEARNING DIARY

8.11.2024

I started the course by reading the general course information page. I understood that this course focuses on mobile development and aims to teach new skills with app development specifically in Android Studio environment. After I read the course information, I moved on to the environment set up.

I already had some of the recommended tools such as visual studio code and git so I didn't have to download these or learn how to use them. I had used Android Studio in a previous course but realized that it was not installed. I installed Android Studio and noticed the newest version looked quite different to what I was used to. I spent some time trying to revise on how to use and navigate it but decided that I would do this while doing the course modules.

11.11. 2024

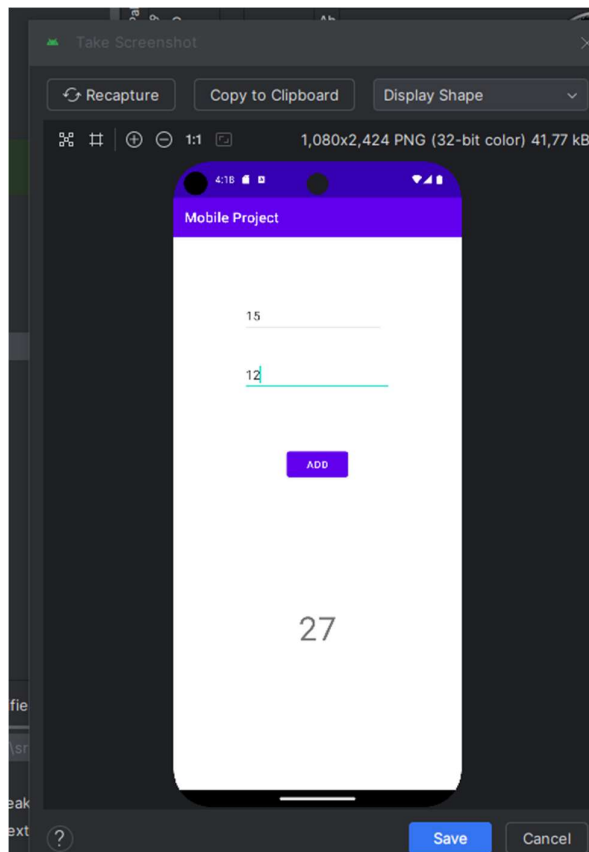
Today I started by watching the first video which taught me how to set up Android Studio Project, how to navigate it and make a simple app and how to debug and run the app with an emulator. I first made sure that I had the required Java and Java SDK. I did this by opening command prompt and checking the versions. When I knew I had both, I moved on to opening android studio and watching the video.

I had some issues while creating the project application. I noticed that the videos were done on the older Android Studio version so some of the settings and outlook would be different. For example, my application created Kotlin files since the project said it's Kotlin + Java project. I also had to create MainActivity and activity\_main.xml files because they weren't created automatically for my project. The third issue I got was that my terminal couldn't find PowerShell so after googling I decided to switch to cmd at least temporarily.

Once I got through these issues, I was able to follow along the first video. I added constraint layout and under that the two number fields. I also added the buttons and connected all of these with the constraints. I tried to open an emulator like the video but got an error while downloading emulator hypervisor driver. I searched what caused this issue and found out that it's because my SVM/virtualization is disabled in bios. I fixed the issue

by changing this setting in bios. My emulator had some errors while trying to open just the layout file. I realized that I had set my project to Kotlin instead of Java, so I quickly created a new project and copied my activity\_main.xml to the new one. After this, I had to configure the MainActivity file since it didn't have some of the imports like the video. The emulator also made an error since the manifest didn't declare the MainActivity. After I fixed these, I was able to emulate the layout file.

I followed the video and created functionality for the boxes and buttons in the MainActivity file. After this I opened my emulator and noticed it was frozen and unresponsive. The emulator phone didn't change views, and I wasn't able to scroll or change anything. Troubleshooting this took quite a while but finally updating my PC drivers and going to tools → SDK manager and installing emulator and SDK tools fixed this. After restarting my app, I was able to input numbers and press buttons.



Lastly, I learned how to debug my code and test it line by line to find an error that's causing issues with the application. In conclusion, I learned how to navigate Android Studio better, what some of the basic files do and how to switch between layout and code view. I also had

issues while setting up my environment. The issues with environment setup, terminal and using the emulator taught me how to troubleshoot by reading the error messages, searching for help online and ensuring that my environment was up to date.

12.11.2024

I started by creating my initial git commit. I created a empty repository in GitHub and used git remote add origin to add and commit my files there. After this I started watching the video for module 2.

The next module shows how to do launcher/menu, so I decided I would try to add it to my calculator instead of creating a separate project. The start of the module taught me certain mobile development related terms such as activity, intent, IntentServices and BroadcastServices. I learned how to create a new quick start activity and layout. I also learned how to create a button that goes to, for example google or yahoo. After this, I created a button and functionality for a button that takes the user to second activity/view. I had some issues while creating the google button since my button didn't redirect to google or yahoo. I searched up the issue for a while and tried to fix it by adding network permission at the start of app manifest. I still couldn't connect to google through the button. I tried to connect to google through the emulator and it worked. This meant that it wasn't a network issue. I found another solution which was to add intent scheme:http and action.VIEW to my manifest. After this the google button worked as intended. Finally, I added, committed and pushed my changes to GitHub.

13.11.2024

I started by opening an android studio and committing my previous changes to git. After doing this I started watching the 3<sup>rd</sup> video about lists layouts and images. I worked on my android studio project alongside the video. I learned how to create a list view in activity and how to define how it lays out the items using another activity. I used strings.xml to store my items and learned how to reference them in my code. After this, I learned how to create the ItemAdapter which was the functionality for my list. I ran my emulator, and my list presented well. I had some problems while creating my\_listview\_detail.xml since the text field wasn't

attached like in the video. I spent some time trying to figure this out but fixed it by adding top and side constraints to the texts.

18.11.2024

I continued the lists, layouts and images video. I learned how to create an image view which connects to the list created on the previous day. I created switch cases that select which image drawable is used based on what list item is clicked. I learned how to create scale image function which scales the list images based on the image and screen width. After following the video, the first two images worked but the last one didn't. I went back to the code and realized I had a typo in my 3rd list item and after fixing this my images worked well.

19.11.2024

I modified my mobile application by adding the calculator button to the launcher and connecting it to the calculator activity. After this I added multiply and subtract options to the calculator by using the add button and its functionality as an example. I also created new colors in the colors.xml and changed the themes so that the new colors replace old primary colors.

I added a toggle button to the Hello World activity and created functionality so that it changes background and text color. When toggled on it turns background to black and text to white and vice versa. I learned how to use the colors.xml better and how to change themes that affect the whole application.

20.11.2024

I read about animations from the android developer page. I created my first fade animation on the Hello World text when the user opens the activity. To do this I changed the opacity of the text from 0 to 3. I also set the duration to 3000ms so the user would have enough time to see it. I also set the repeat count to 0 which means it happens once (on activity launch).

After this I created buttons that would animate the text when pressed. I read guides online and played with the values for a while to create animations I thought looked good. I

changed the duration, Alpha values, repeat count and repeat mode until the animations looked good. I connected the res/animations to the buttons and tested them in my emulator. Creating animations taught me what android studio animation values do and how they work. I also learned where to add the animation.xml files and how to use them in my code. I learned how to start a animation when a view is opened or a button is pressed.

<https://developer.android.com/guide/topics/resources/animation-resource>