Lappeenrannan teknillinen yliopisto

School of Business and Management

Software Development Skills

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LEARNING DIARY, MOBILE DEVELOPMENT MODULE

**LEARNING DIARY**

18.9.2021  
  
I started the course by reading through the general course information and goals for the course. I also checked the mandatory assignments and the instructions how to complete the course. The main focus of the course is to provide tools for creating unique projects (to give and advantage in the job market) and to find my passion as a software developer. As a software development major (in South-Eastern Finland University of Applied Sciences – Xamk) I think I have already found my passion as a software developer, but I chose this course to specifically get myself familiar with mobile app development, which I think will be a major focus in future computing. Also, there isn’t any course in my syllabus to cover this specific area of software development.

I already had a sufficient development environment installed (including Git, VS Code and IntelliJ Idea - which has the same functionality as Android Studio, which it is based upon). I have not used Git very much in the past, so I took upon myself to get more familiar with it. I also used Github before, so I made a Bitbucket account for this course and installed Sourcetree, which seems like a good free Git GUI app (too bad it isn’t yet optimized for the M1 Macs that I’m using, but regardless of that it seemed to work fine). I started by watching the Git introduction video but stopped it after a while since I found that the instructor didn’t provide sufficient background information about repositories and their function (and local vs. remote repos etc.). I therefore decided to read a couple of Git introduction articles first after which I resumed to watch the video.

Also, the video focuses very much on the commands although I think using a GUI client will be easier and more user-friendly way to manage the project. I would have liked if the video instructor would have used some visual graphs and explained the idea of working with git more than just telling what commands to feed and not actually telling what they mean and do. The instructor also suggests that with GUI clients you will not learn using Git and the inner workings of it, but I would say that by copy-pasting commands to a terminal you will not learn any more than by using a GUI tool.

This was how far I got the first day. I had some trouble with Git and understanding the concepts of it (the video just assumes I already know what a repository is and what is a staging area and what the commands fed to terminal actually do and so forth). Inspired by this difficulty I enrolled in a Git course to University of Tampere.

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The next day - after getting the hang on basics of Git - I made a repository in Bitbucket and cloned it to my local computer. After that I used IntelliJ Idea to make the first Android project in the repository. At this point I had doubts on whether I first should have made the project and after that I should have used git init to initialize it and git push to push it to the remote repository (Bitbucket). That is hoe the introduction video makes out the process to be like, but I think it works better if the repository is made and synced before adding files to the repository.

I started the project by watching the first Android instruction video. I tried to follow it along and make the same project as I watched the video. I did have to pause the video very often to be able to do the same stuff as the phase of the video was quite fast. Luckily, I have some experience in Java programming language (and had Java and Java SDK installed) so it wasn’t completely new stuff for me.

I decided to try and manage this course with IntelliJ Idea instead of Android Studio, since it should have exactly the same functions and layout etc. I guess we will see how that goes after I get to do more developing with it.

I selected to make a phone/tablet app and chose the SDK version to be version 26 (to support Android versions 8 and up). I did also choose to use the Kotlin language for this app, since that is the recommended language by Google and the video is several years old and not up to date with that. We will again see, if this causes any problems, but I doubt it since the syntax and workings of Java and Kotlin should be very similar to each other. I also had some troubles following along with the video instructions, since the Android Studio layout seems a little different from the video version. So not all functionality was the same or in the same places.

As a result of the discrepancies between the video and my IntelliJ Idea installation I decided to try out Android Studio after all. Since my project was in its very early stages I decided to make a new project from Android Studio to have a clean slate with it. This time I also chose earlier API 21 (to support Android 5.0 and up). This was the default, so I guess it is also recommended if the very newest features are not needed.

So doing a clean install I got the app build eventually working (after having to download and install Android SDK 30 too (Android Studio installed SDK 31 by default at installation). That way I was able to get the app build to actually run through without errors. The next problem though was with Android Emulator, which didn’t run the app after the build was successful. I tried to install a nev AVD (Android Virtual Device) with Android API 30 (Android 11) installed and see if that was the problem, since the build was done with the same API version too. That seemed to work since on the new virtual device I did get the app to run.

As I was watching the first video, I was trying to use the Java syntax in my app (which I decided to write in Kotlin). Not a single line of code worked as is so I think it will be a very difficult to follow through the three instruction videos. Nevertheless, I think it is better to use new and Google backed up technologies than learning a new skill already with outdated instructions. I will continue to try and watch the videos, but I will reference the developer.android.com instructions as to how to get started with Kotlin and Android development.

I finished the first video and I think I understood all the concepts that it showed. The problem that arose was that the Java code shown in the video didn’t work in my setup (as I was using Kotlin). So, the references to the Views needed to be changed and the whole code section would need to be written in Kotlin. I did learn more about Views and ViewGroups from the Android Developer documents (I would have thought that such an introductory video would have used some time to introduce those basic components)

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I went through the Android App development basic lessons on developer.android.com. Those helped me further understand the layout of Android Studio and have an idea of what different panels are for. I also learned about resources that are imported into the project (like pictures for example) and some error messages that were present after the first instructional video too. Like hardcoded text error/warning message that says you shouldn’t hardcode text into the app but use a string resource to store that string. That way it can be reused and translated, and it can be better used in different orientations and so on.

The official instructions also did a better job at introducing the attributes panel, so that I actually now know what that is and how to use it. I also learned about the component tree and order in that panel, which works like layers in so that bottom most are the top layers and the topmost are at the bottom. That seemed a little counterintuitive as most image manipulation softwares (like Photoshop) use a different order in layers.

I also learned a lot about the Kotlin language from the Android documents. It basically covered the fundamentals of variables, classes, functions and datatypes. Also, some methods were introduced (like random() and repeat() methods). Next, I was going to learn more about the Activities and interactivity in Android Studio and how to reference them in Kotlin. This was about where the first introduction video ended up without explaining anything about activities really (I really didn’t like the introduction videos as you may have noticed from this diary). I hope the official documents will be clearer and more explanatory on the use of these as well. I managed to get the input from the EditText View and change it to string and after that to on integer after reading through a couple of online guides. It was quite hard, because the type wasn’t a string to begin with so it couldn’t be parsed to integer directly. Also the syntax to get the text input has changed recently from .GetText() to just .text which is simpler, but most of the online instructions are older.

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The second video was about changing activities (or jumping to a different app) from one activity to another. Activity is explained as “a rectangular are that displays something” in the video.

I also learned how to pass information from one activity to another one. This is done with the .putExtra method of the intent. That information is passed in as key-value pair (the video didn’t specify if multiple pairs can be passed in as arguments though.

The second video also showed how to launch an activity that is outside of our own app. An example would be launching Chrome browser from your app and going to [www.google.com](http://www.google.com). I got both of the Intents working as showed in the video (but of course in Kotlin), but I’m not really sure what the code does exactly. As I think that is the main thing to learn I will continue further with the official documentation to see if there will be more about Intents and Activities than in the video. I’m sure it will come eventually, but if it is not explained pretty early I will skip that and use the working code in the course project even though I have no idea why/how it actually works.

**EXAMPLE STYLE 2**

10.9.2018

I learned about,

version control, but mostly it was just refreshing my memory. What I learned was…

how to develop as a becoming software professional. I find <something> interesting, because…

how to set up Atom environment with addons. There was one problem that took me a lot of time to solve. The problem was about …

Etc.

**EXAMPLE STYLE 3**

Freeform.

Something else, but reasonable. You must document what you have done, learned and when this have happened.