



NTNU

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Assignment I – Documentation

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Course: Mobile Development Theory

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Description of the Application:

The “Assignment” application (“Assignment” is the name of the app) is a simple Android application [1] [2], which allows the user to show his current location and also allows the user to add new notes about phones, edit this notes and delete them. This notes are storage in the database, so each add, edit or delete pulls a query that edits the database.

The application has 3 different activities, 2 fragments and 4 classes, which exchange data with each-other by passing variables. The current location of the user is shown using Google Play Service library which give us the freedom to use the newest APIs [3] [4] for popular Google services [5] without worrying about device support. The notes that the user will add, will be stored in the database [6] [7]. All the notes that are stored in the database are shown to the user in a fragment [8] list.

The Work

This app consists of a “Main Activity” and 2 other activities, 2 fragments that lives inside of one of our activity and 4 classes that helps us for our database and our notes. When the application starts for the first time in a device he has no data, so what we see in the beginning is just a white window with a button for telling us the current location and a menu item where we can add notes. If we click the button “Your Location” it will open a new map activity. In this map activity if the user has the location turned “on” and has internet access it will show the current location [9]. If the location sensor is “off” then in the map activity will appear just the world map. In the other side if we click the “Add Note” button, that’s in the top right side, it will open a new activity where we can add some new note. In this activity we have two buttons, one that saves the note and records in the database and one that if we click it, it will redirect us to a web browser page. When we click “Save Note” it will record in our database that note and we will return in the “Main Activity”, where we will see the note that we added. We can add as many notes as we want, all they will appear in the “Main Activity”. If we click in a note it will open a new activity that tells the characteristics that this note has, include the image, the name and the description. If we long press a note it will show a pop up menu with two options: “Edit” and “Delete”. If we click delete it will automatically deleted it in the record lines of the database and it will refresh the “Main Activity” to see just the records that are still in the database. If we click “Edit”, then a new activity will show, where we can modify the properties of the note.

USE OF STORED DATA WHEN RESTARTING FROM SHUTDOWN

In the first time the app is created a database is also created, so each time we add a new note, this note will be inserted in that database. This database and the data inside her will stay on the device independent, if the app is running or not. This data represent notes that the user adds and are shown in a fragment of the “Main Activity” This app has also some methods for edit or delete this notes. If the user close the app this data will not deleted, just when the user uninstalled the app the data inside the database will drop.

EXPLANATION OF HOW THE APP COULD BE EXTENDED

The app in not completed at all, but for the assignment I hope I have included all what we needed. This application needs so much, but what it comes in my mind that this app needs are: to have a settings menu where we can do some maneuvering like: change the tittle name, change the color, the background color, the history of what the current user has looking etc., we can add also some regular expression for checking the “TextView” or “EditText”. We can extended it with adding more types of phones that the user can adds. Also, when a user adds a phone (the notes that the user adds are actually phone notes) we can make a new table in the database which will records the time, the properties of the note, who has added this note, the location of this note and other stuff, which database can be seen just by the provider of the app. It will look better if we had a log in activity, when the app starts, so we can record all the user that use this app in a new table. If the user log in for the first time he must create a new account, else if he/she has an account he just can login. We can make some restrictions, for example we can classify the user that are logged, they that can offer some phones for sale and they that just have the app, but they are signed just as client and can by them. So this app could be like a mini store app, where people can buy or sale phones. We can make also a “RattingBar” so the buyer can rate the phones. And of course the application needs to be developed for a later android, like “Android KitKat” [10] would be a good idea since there is a bigger market margin for the application to be popular.

What was hard and what was easy

Although that it was the first time on mobile development it was a little bit difficult, but also the new things are good for a developer. In the beginning I don't like it, because I was learned

to use c# of “Visual Studio” and it was a bit different compare with “Android Studio”. So I saw some tutorials for Android Studio that helps me lot to understand the logic and the syntax. The difficult part became in debugging and fixing problems. So when I implemented a map activity, we had to run it in a real device, but although that I installed an android emulator from “Genymotion” [11] [12] that allows to test my app directly on my laptop as a VM. But it still lacks of Google Services just like Google Play Store, Google Maps, etc. on “Genymotion” emulator which makes us developer not be able to test those functionalities that use Google Services for example GCM Push Notifications or Google Maps. Anyway it is not a problem anymore because there are some simple steps to do to make Google Services be available on “Genymotion” with some help from Cyanogen Mod's gapps. I also run my app in my phone. Regarding to the easy part, I don't think it was something so east, but what I implemented easy was the SQLite. The portrait and landscape modes were interesting to implement, so we had to save the information before our orientation changes and to restore the information after we come back from an orientation change. I learned a lot about permissions and how to handle them, fragments, SQLite, API [13] handling, menu bar, different types of widgets, serialization methods etc.

DIFFERENCE BETWEEN NATIVE APPS AND WEB APPS

The difference is obvious. So a native app is one that is installed directly onto smart phone and can work, in most cases with no internet connectivity depending in the nature of the app. A web app works via web browser on the smartphone but requires either a cell signal or wi-fi to function. The benefits of the native app is that it can world independently of the web, but most are pulling information or function for the web. The native apps can work much faster by harnessing the power of the processor and can access specific hardware like GPS. In some smart phone the app can control devices and act as a controller itself. The web apps has the fortune of being used on various devices with the only requirement being a web browser and an internet connection. For my opinion as long as the web app is written for cross-browser compatibility they will survive. Also a web app in contrast to the native app, it requires internet access and its signal or the speed of the wi-fi broadband we are connected to. This also alludes to the fact that we have to be in range of either connection. One other issue is that we won't have access to internal hardware such as GPS and other connectivity. So it comes down to whether you want to sacrifice function for ease of porting to various devices. So native apps runs better because they are written in the same language as the operating system and also have direct access to devices functions like GPS, sensors, camera, graphic, processor etc. Web apps are limited by the browser HTML, JS, CSS interpreter so generally performance is limited.[14] [15] [16]

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