



Mobile App Development 2

Study diary

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SISÄLLYS

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# Week exercises

## Android BMI App

<https://github.com/jaakko13/mobileAppDev2/tree/master/1.1BmiApp>

No real challenges in this work. Very simple introductory assignment.

## Android Weather App GUI

<https://github.com/jaakko13/mobileAppDev2/tree/master/12_weatherAppGUI>

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/location"  
 android:textSize="24dp"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="164dp"  
 android:layout\_marginTop="98dp"  
 android:text="Tampere"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <TextView  
 android:id="@+id/locationText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="168dp"  
 android:layout\_marginTop="128dp"  
 android:text="Location"  
 android:textSize="16dp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <TextView  
 android:id="@+id/temperature"  
 android:textSize="24dp"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="164dp"  
 android:layout\_marginTop="64dp"  
 android:text="10 Celsius"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/location" />  
  
 <TextView  
 android:id="@+id/temperatureText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="164dp"  
 android:layout\_marginTop="96dp"  
 android:text="Temperature"  
 android:textSize="16dp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/location" />  
  
 <TextView  
 android:id="@+id/percipitationText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="56dp"  
 android:layout\_marginTop="212dp"  
 android:text="Percipitation"  
 android:textSize="16dp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/location" />  
  
 <TextView  
 android:id="@+id/HumidityText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="240dp"  
 android:layout\_marginTop="212dp"  
 android:text="Humidity"  
 android:textSize="16dp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/location" />  
  
 <TextView  
 android:id="@+id/percipitation"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="56dp"  
 android:layout\_marginBottom="165dp"  
 android:text="80 Percent"  
 android:textSize="24dp"  
 app:layout\_constraintBottom\_toTopOf="@+id/button"  
 app:layout\_constraintStart\_toStartOf="parent" />  
  
 <TextView  
 android:id="@+id/Humidity"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginEnd="56dp"  
 android:layout\_marginBottom="164dp"  
 android:text="10 Percent"  
 android:textSize="24dp"  
 app:layout\_constraintBottom\_toTopOf="@+id/button"  
 app:layout\_constraintEnd\_toEndOf="parent" />  
  
 <Button  
 android:id="@+id/addLocationButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="158dp"  
 android:layout\_marginEnd="159dp"  
 android:layout\_marginBottom="174dp"  
 android:text="Add Location"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent" />  
  
 <Button  
 android:id="@+id/refreshButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="75dp"  
 android:layout\_marginTop="98dp"  
 android:layout\_marginEnd="16dp"  
 android:text="Refresh"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toEndOf="@+id/location"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

Again pretty simple introductory assignment.

# Week excercises

2.1 <https://github.com/jaakko13/mobileAppDev2/tree/master/flashlight>

fun switchFlashlight(view: android.view.View){  
 val cameraManager = getSystemService(*CAMERA\_SERVICE*) as CameraManager  
  
 for( id in cameraManager.*cameraIdList*){  
 if(cameraManager.getCameraCharacteristics(id).get(CameraCharacteristics.*FLASH\_INFO\_AVAILABLE*) == true){  
 torch = !torch  
 cameraManager.setTorchMode(id, torch)  
 }  
  
 val background = findViewById<ConstraintLayout>(R.id.*backgroundConstraintLayout*)  
 if(torch){  
 background.setBackgroundColor(Color.*YELLOW*)  
 }  
 else{  
 background.setBackgroundColor(Color.*BLACK*)  
 }  
 }  
   
}

Enjoyed learning the best practices of accessing the sensors. Farly easy overall but useful info. Opens the door for a lot of functionality for future apps and has already given me some ideas. No real challenges in the exercise.

2.2 <https://github.com/jaakko13/mobileAppDev2/tree/master/level>

fun leveler(view: android.view.View){  
 val sensorList = sensorManager.getSensorList(Sensor.*TYPE\_ALL*)  
  
 for( sensor in sensorList){  
 Toast.makeText(this, sensor.*name*, Toast.*LENGTH\_SHORT*).show()  
 }  
  
 val accelerometer = sensorManager.getDefaultSensor(Sensor.*TYPE\_ACCELEROMETER*)  
  
 if(accelerometer != null) {  
 sensorManager.registerListener(this, accelerometer, SensorManager.*SENSOR\_DELAY\_NORMAL*)  
 levelingStarted = true  
 }  
}

Very interesting learning how to access all the different sensor. The function above is how we got the data. But most of the visual code was in the onSensorChanged function as it updated the data on the screen. Not too complicated overall and didn’t face any big challenges.

# Week exercises

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# Week exercises

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# Week exercises

# Week exercises

# Final project (not mandatory but required for best grades)

Sources used with exercises

List here the possible sources you’ve used with exercises (e.g. stackoverflow, tutorialspoint, github etc.)