UA/DETI • 45424 - Introdução à Computação Móvel (ICM)
Ilídio C Oliveira (ico@ua.pt)

Android labs – 2020/21

Learning resources

- [Android documentation](): tutorials, API documentation, tools, best practices,…
- [Android training](), including [courses by Google]()
- Android [Courses at Udacity]() (by Google staff members)
- R. Meirs' "[Professional Android]()" Book
- [CodePath]() Android Cliffnotes: very good collection of topics on Android development.

Lab #1- Introduction to the development workflow and tools

Readings & learning resources

— Required: concepts for [Lesson 1 and Lesson 2]() in [Android Developer Fundamentals course]()
— Optional: [slides]() for lesson 1.* and lesson 2.*
— Optional: [Meiers' PA4](): Chap. 2, 3 & 5.

Lab

Pre-requirements: [install Android Studio]().
In this lab, we will complete:

a) "[Build your first app]()" – introductory tutorial, from Android documentation.
b) [Code labs for "Lesson 2.x" (from Android Developer Fundamentals course materials)]()

HW/checkpoint assignment

CA1: build an app that acts as a dialer, with a "keypad" to enter the calling number. Start with the simplest approach possible.

When you press the dial button, a call should be started (just hand-over to the "real" built-in dialer).

You should add a set of 3 "speed dial" buttons (memories); when the users does a long press on one of these "speed dials"/memories, a secondary activity is offered to allow the user to update the speed dial details (define a label and associate a phone number).

Explore

- [CodePath](#) Android Cliffnotes: very good collection of topics on Android development.

#2- Flexible user interfaces and fragments

Readings & learning resources

⎯ Concepts for [Lesson 4 and Lesson 5](#) in ADF course
⎯ Concepts for [Lesson 1: Fragments](#) in Android Developer Advanced
⎯ Optional: [slides](#) for lesson 4.* and 5.* in ADF
⎯ Optional: [slides](#) for Lesson 1: Fragments in ADAdv
⎯ The Android Studio visual [Layout Editor](#)
⎯ Optional: [Meiers' PA4](#): Chap. 2, 3 & 5.

Lab

Proposed lab activities: (mostly from the [Android Developer Fundamentals course materials)](#):

    a) Code lab 4.1 ([Clickable images](#)), from ADF course
    b) Code lab 4.5 ([RecyclerView](#)), from ADF course. Make sure the RecyclerView AndroidX library.
    c) Code lab for [Lesson 1: Fragments](#) (1.1 + 1.2) from Android Developer Advanced
    d) Code lab 4.4 ([user navigation](#)), from ADF course
    e) Code lab 5.3 ([adaptative layouts](#)), from ADF course
    f) Code lab 4.3 ([menu and pickers](#)), from ADF course

Note 1: some code labs use the old support library (e.g: android.**support**.v7.widget.RecyclerView). You should prefer, instead, the new packages under AndroidX (e.g.: **androidx.**recyclerview.widget.RecyclerView). If you need to use the old packages, when creating the project, select the option to use legacy libraries. More info on [migrating to AndroidX](#).

Note 2: be sure to complete the code labs b) and c). Fragments and the ReciclerView will appear very often.

Explore

- [Material design guidelines](#) for User Experience (UX) and look-and-feel.
- Another guide to [RecyclerView](#).
- Example of [Master-Detail navigation](#), with Fragments.