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Programming Mobile Applications with Android Lab1

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25 años
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Programming Mobile Applications with Android

- Android Lab I.- Create, compile and execute a hello world application
  - Follow the instructions to prepare your computer for development
  - Create a new application and discover all the options that are available
  - Execute the application both in the emulator and your mobile phone

Programming Mobile Applications with Android

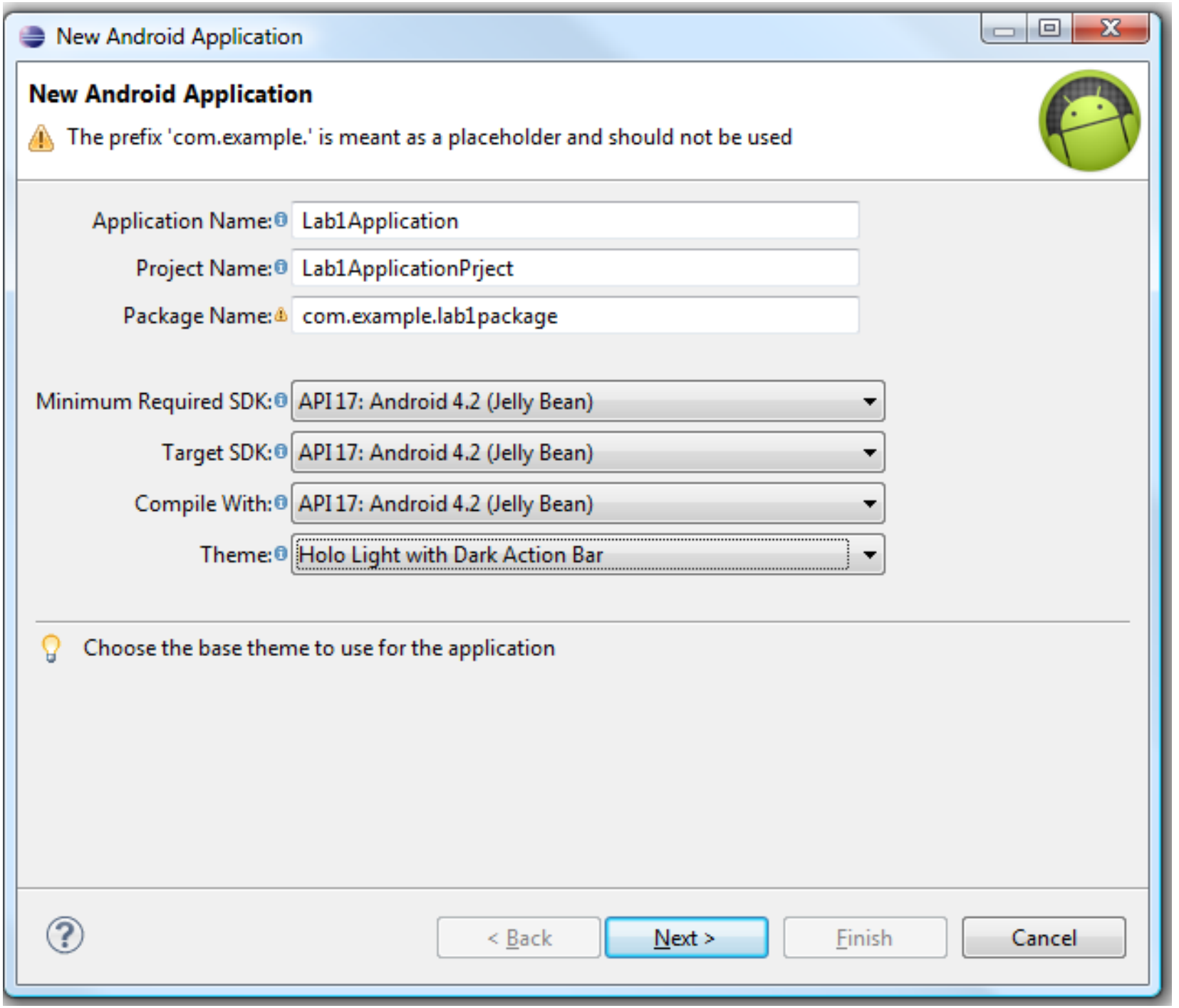
- Android Lab I
  - Check the environment has been correctly established for Android developments
    - JDK6 (prerequisite)
    - Eclipse ADT+PlugIn
    - Android SDK Tools
    - Android Platform Tools
    - Installations from the SDK manager
      - Version 4.2 and X.Y (your mobile) of the Android Platform and Image System

Programming Mobile Applications with Android

- Android Lab I
  - Open Eclipse and establish as workspace a folder created for the labs from your file system
  - File → New → Android Application Project

Programming Mobile Applications with Android

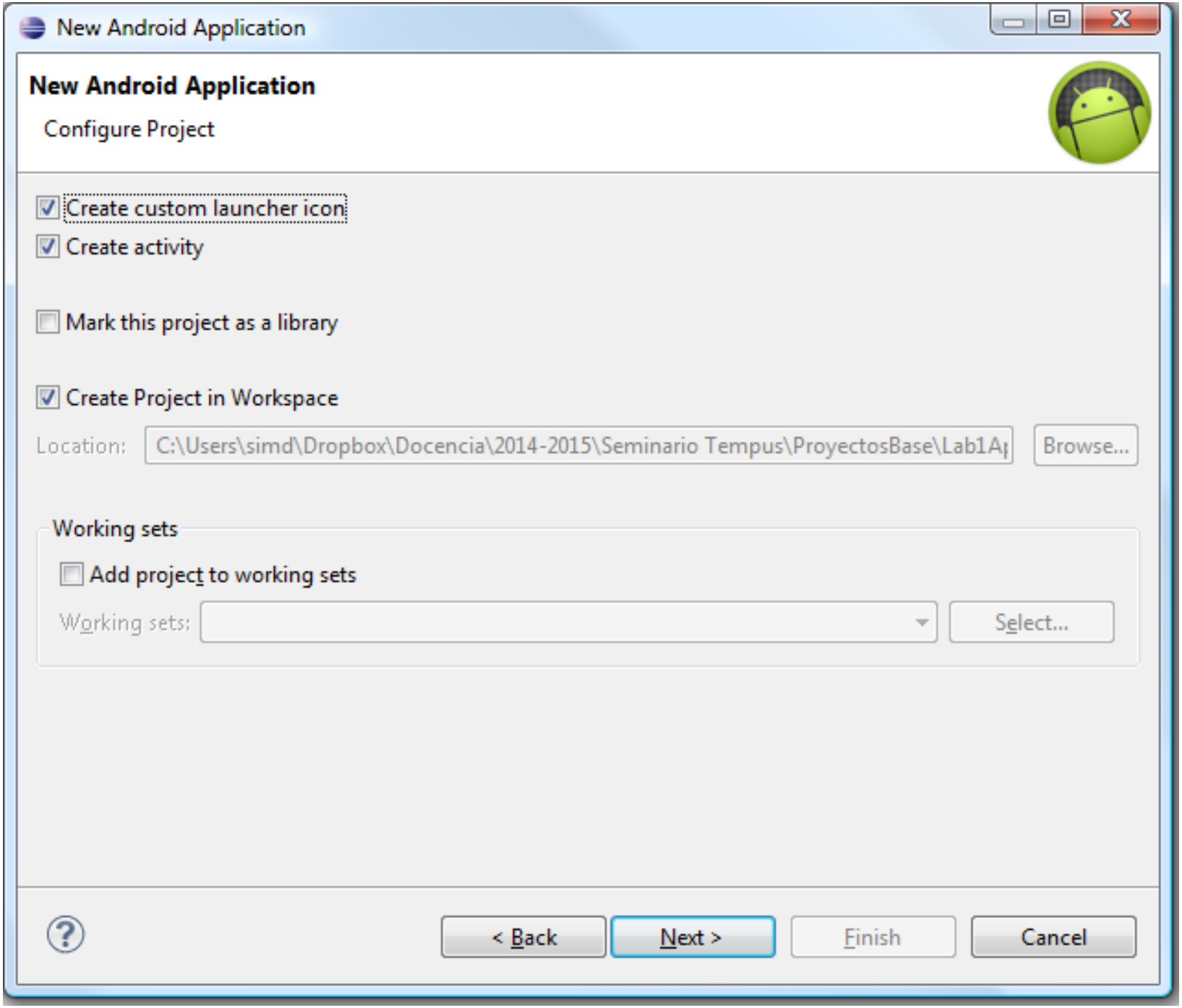
- Android Lab I – Window 1
  - Name of the application, the project and the package
  - Android requirements
    - Highest Android versions provide with more powerful capabilities, but reduce the number of devices where the application can be executed


New Android Application
New Android Application
The prefix 'com.example.' is meant as a placeholder and should not be used
Application Name:
Lab1Application
Project Name:
Lab1ApplicationPrject
Package Name:
com.example.lab1package
Minimum Required SDK:
API 17: Android 4.2 (Jelly Bean)
Target SDK:
API 17: Android 4.2 (Jelly Bean)
Compile With:
API 17: Android 4.2 (Jelly Bean)
Theme:
Holo Light with Dark Action Bar
Choose the base theme to use for the application
< Back
Next >
Finish
Cancel

Programming Mobile Applications with Android

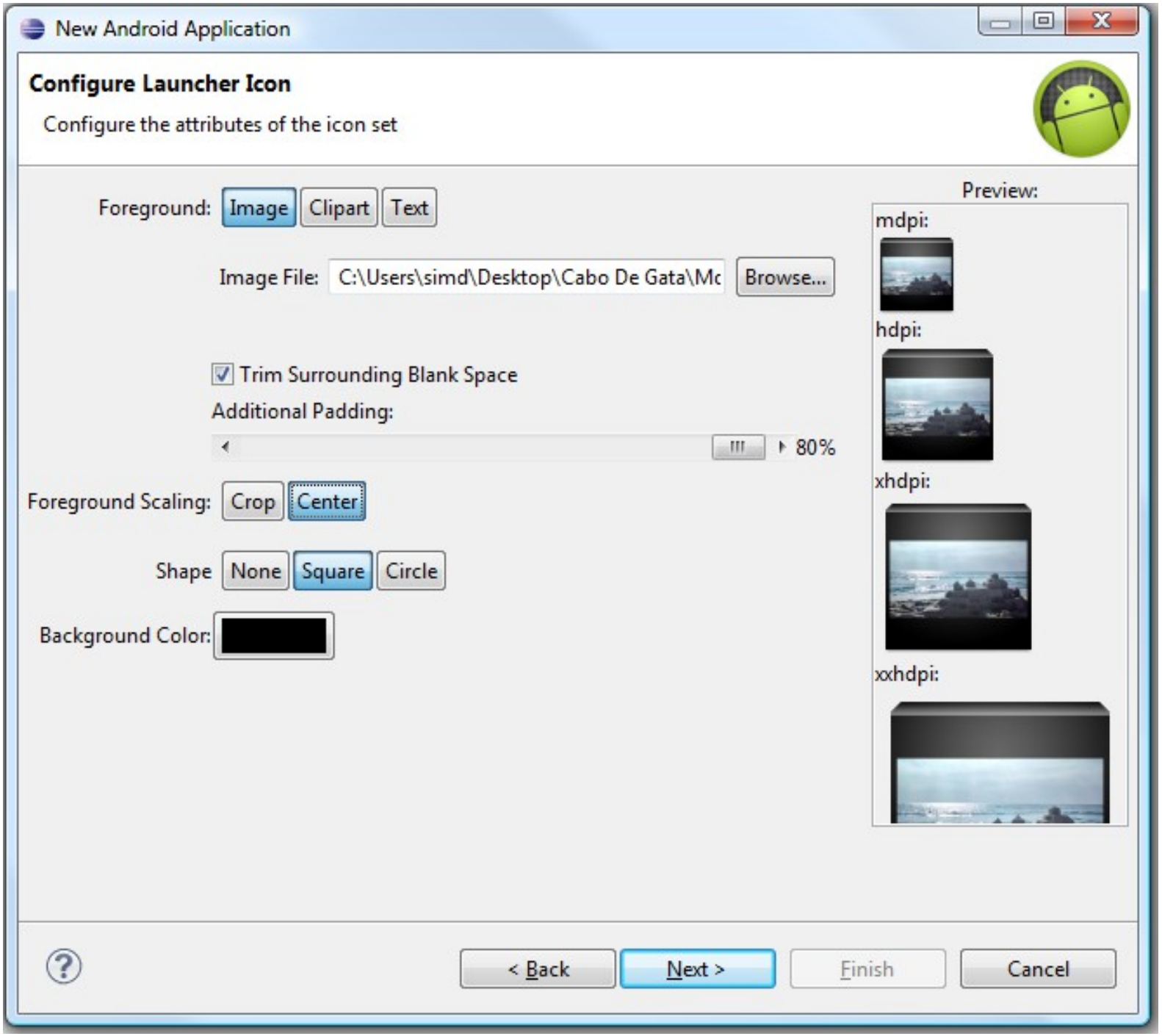
- Android Lab I – Window 2
  - Create custom launcher Icon
  - Create Activity
  - Create Project in Workspace

    …
  - All default options


New Android Application
New Android Application
Configure Project
Create custom launcher icon
Create activity
Mark this project as a library
Create Project in Workspace
Location:
C:\Users\simd\Dropbox\Docencia\2014-2015\Seminario Tempus\ProyectosBase\Lab1A
Browse...
Working sets
Add project to working sets
Working sets:
Select...
< Back
Next >
Finish
Cancel

Programming Mobile Applications with Android

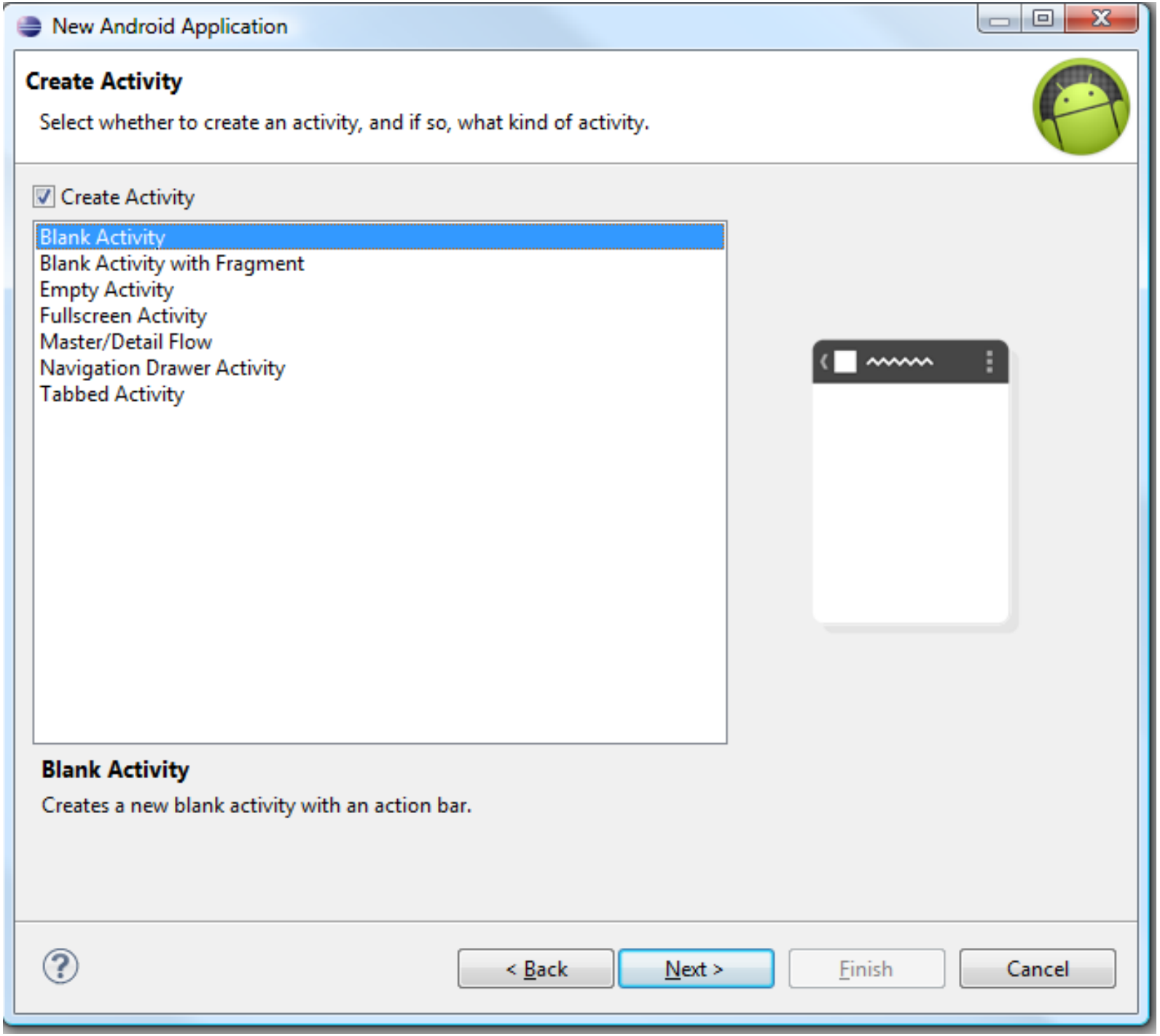
- Android Lab I – Window 3
  - Configure launcher Icon
    - Shape, Color, etc
  - Select your desired photograph and style


New Android Application
Configure Launcher Icon
Configure the attributes of the icon set
Foreground:
Image
Clipart
Text
Image File:
C:\Users\simd\Desktop\Cabo De Gata\Mc
Browse...
Trim Surrounding Blank Space
Additional Padding:
80%
Foreground Scaling:
Crop
Center
Shape
None
Square
Circle
Background Color:
Preview:
mdpi:
hdpi:
xhdpi:
xxhdpi:
< Back
Next >
Finish
Cancel

Programming Mobile Applications with Android

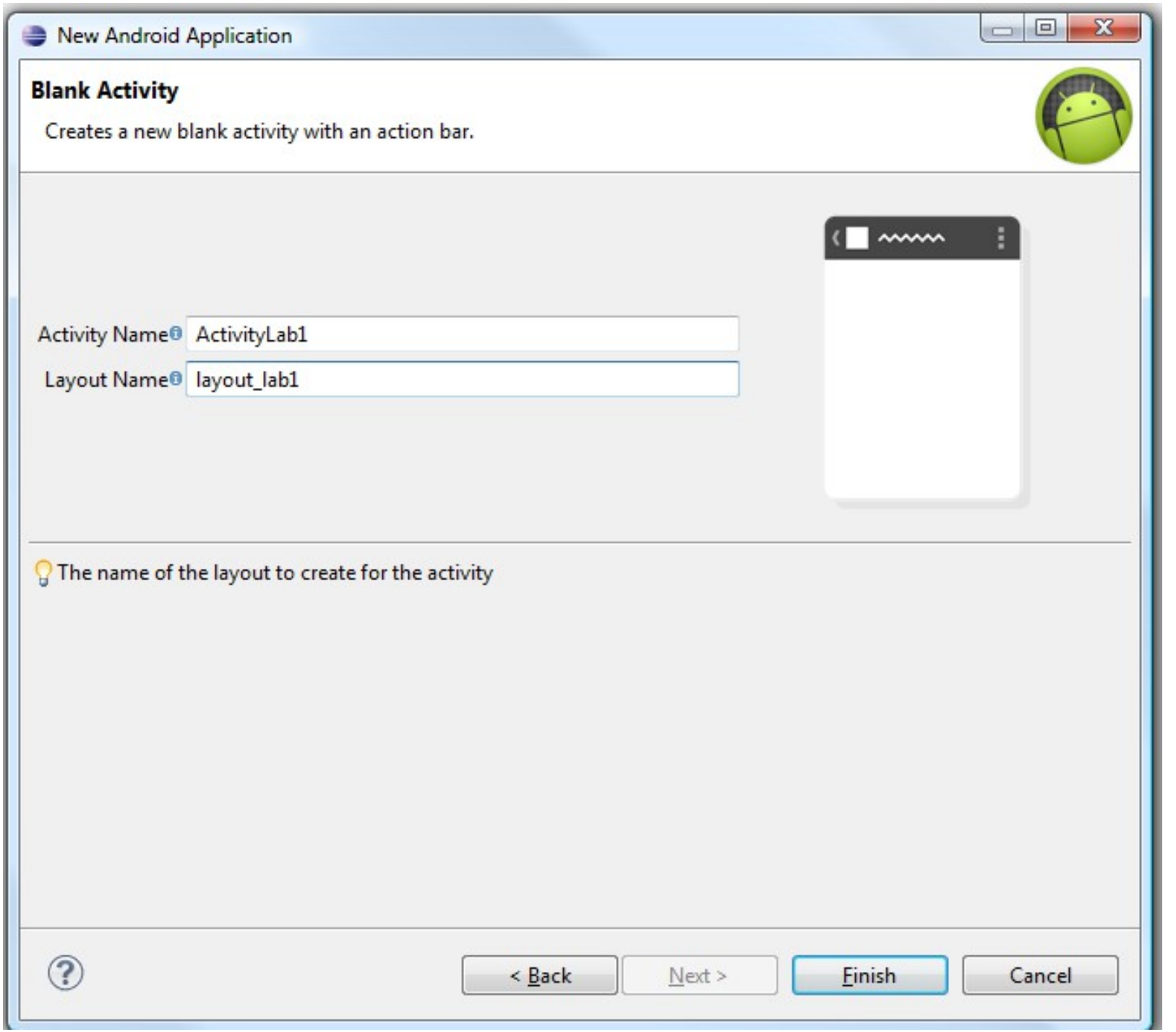
- Android Lab I – Window 4
  - Create the activity and select the type
    - Non blank activities are used for advanced GUI options

    → Select Blank Activity


New Android Application
Create Activity
Select whether to create an activity, and if so, what kind of activity.
Create Activity
Blank Activity
Blank Activity with Fragment
Empty Activity
Fullscreen Activity
Master/Detail Flow
Navigation Drawer Activity
Tabbed Activity
Blank Activity
Creates a new blank activity with an action bar.
< Back
Next >
Finish
Cancel

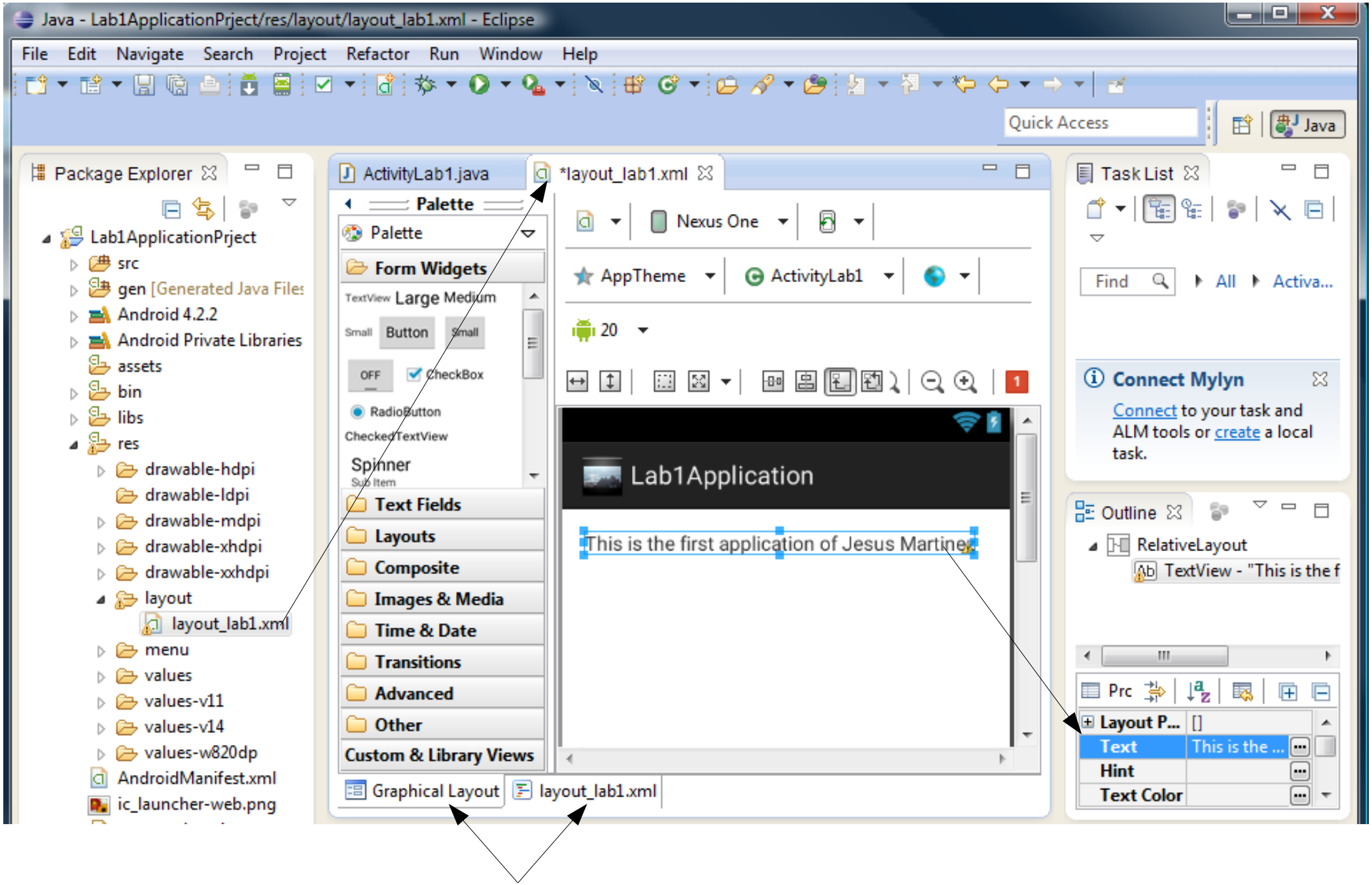
Programming Mobile Applications with Android

- Android Lab I – Window 5
  - Name of the
    - Activity → Java file with the source code
    - Layout → XML file with the interface elements


New Android Application
Blank Activity
Creates a new blank activity with an action bar.
Activity Name
ActivityLab1
Layout Name
layout_lab1
The name of the layout to create for the activity
< Back
Next >
Finish
Cancel

Programming Mobile Applications with Android

- Android Lab I
  - Open the layout file (res/layout/layout_lab1.xml) and explore the graphical layout view and the code view
  - The layout contains a Relative Layout element (define how the sub-elements are visualized) and a TextView
  - Select the TextView element and modify the text field

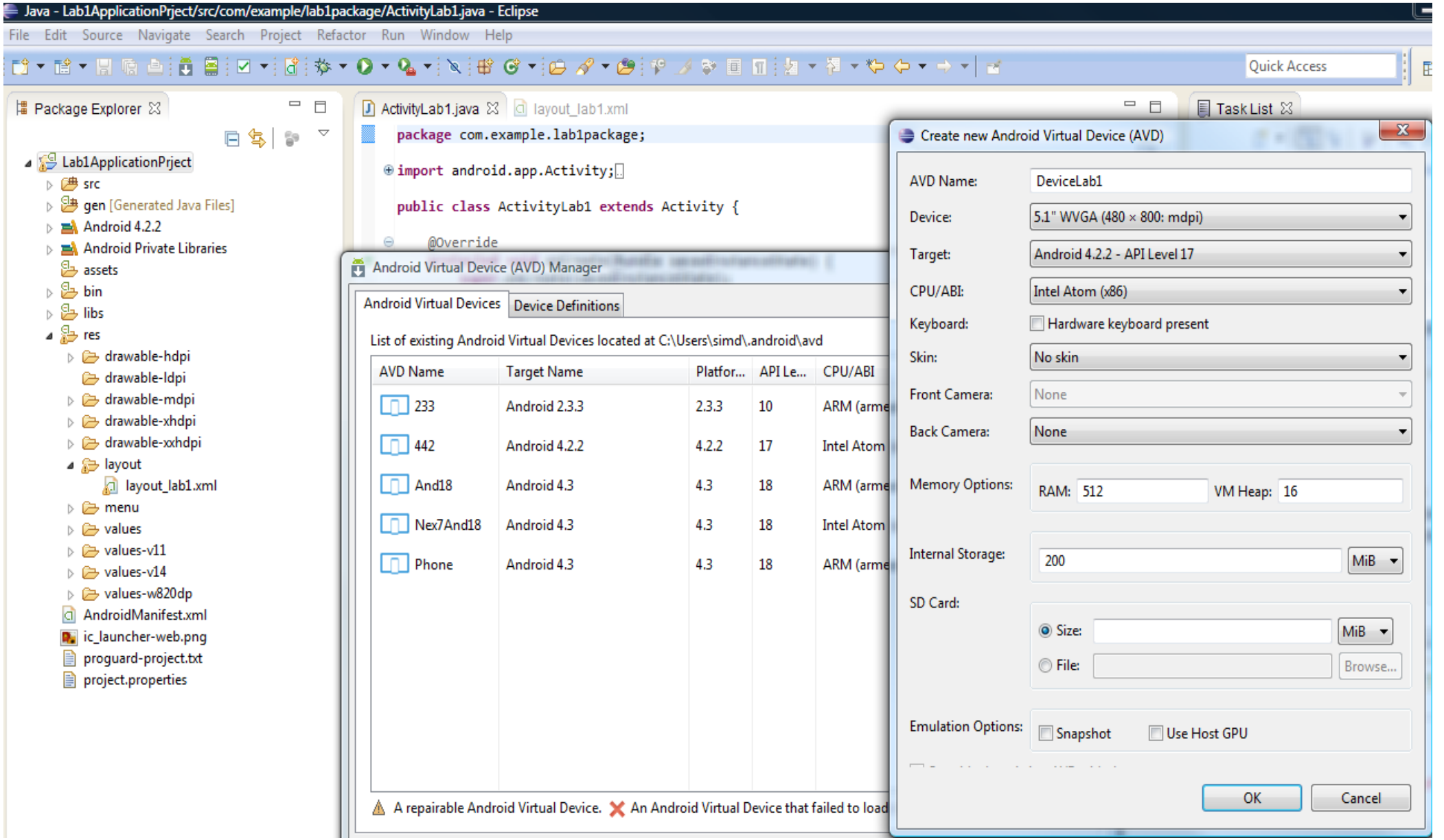

Java - Lab1ApplicationPrject/res/layout/layout_lab1.xml - Eclipse
File Edit Navigate Search Project Refactor Run Window Help
Quick Access
Java
Package Explorer
Lab1ApplicationPrject
src
gen [Generated Java Files]
Android 4.2.2
Android Private Libraries
assets
bin
libs
res
drawable-hdpi
drawable-ldpi
drawable-mdpi
drawable-xhdpi
drawable-xxhdpi
layout
layout_lab1.xml
menu
values
values-v11
values-v14
values-w820dp
AndroidManifest.xml
ic_launcher-web.png
ActivityLab1.java
*layout_lab1.xml
Palette
Form Widgets
Text Fields
Layouts
Composite
Images & Media
Time & Date
Transitions
Advanced
Other
Custom & Library Views
Nexus One
AppTheme
ActivityLab1
20
Lab1Application
This is the first application of Jesus Martinez
Graphical Layout
layout_lab1.xml
Task List
Find
All
Activa...
Connect Mylyn
Connect to your task and ALM tools or create a local task.
Outline
RelativeLayout
TextView - "This is the f
Layout P...
Text
This is the ...
Hint
Text Color

Programming Mobile Applications with Android

- Android Lab I
  - Add some elements to explore the capabilities of the layout: buttons, image views, etc …
  - Then, save and run the application
    - Right button on the application → Run As → Android Application
  - Any application can run on
    - Emulator
    - Physical device plugged to the computer

Programming Mobile Applications with Android

- Android Lab I
  - Firstly, we will create a **compatible** emulator.
  - Android Virtual Device Manager Button
    - Create with the desired options but
      - Target → Android 4.2
  - Then start the emulator and wait, wait, wait …


Java - Lab1ApplicationPrject/src/com/example/lab1package/ActivityLab1.java - Eclipse
File Edit Source Navigate Search Project Refactor Run Window Help
Quick Access
Package Explorer
Lab1ApplicationPrject
src
gen [Generated Java Files]
Android 4.2.2
Android Private Libraries
assets
bin
libs
res
drawable-hdpi
drawable-ldpi
drawable-mdpi
drawable-xhdpi
drawable-xxhdpi
layout
layout_lab1.xml
menu
values
values-v11
values-v14
values-w820dp
AndroidManifest.xml
ic_launcher-web.png
proguard-project.txt
project.properties
ActivityLab1.java
layout_lab1.xml
package com.example.lab1package;
import android.app.Activity;
public class ActivityLab1 extends Activity {
@Override
Task List
Android Virtual Device (AVD) Manager
Android Virtual Devices
Device Definitions
List of existing Android Virtual Devices located at C:\Users\simd\.android\avd
AVD Name
Target Name
Platfor...
API Le...
CPU/ABI
233
Android 2.3.3
2.3.3
10
ARM (arme
442
Android 4.2.2
4.2.2
17
Intel Atom
And18
Android 4.3
4.3
18
ARM (arme
Nex7And18
Android 4.3
4.3
18
Intel Atom
Phone
Android 4.3
4.3
18
ARM (arme
A repairable Android Virtual Device.
An Android Virtual Device that failed to load
Create new Android Virtual Device (AVD)
AVD Name:
DeviceLab1
Device:
5.1" WVGA (480 × 800: mdpi)
Target:
Android 4.2.2 - API Level 17
CPU/ABI:
Intel Atom (x86)
Keyboard:
Hardware keyboard present
Skin:
No skin
Front Camera:
None
Back Camera:
None
Memory Options:
RAM:
512
VM Heap:
16
Internal Storage:
200
MiB
SD Card:
Size:
MiB
File:
Browse...
Emulation Options:
Snapshot
Use Host GPU
OK
Cancel

Programming Mobile Applications with Android

- Android Lab I
  - Secondly, if you have an Android mobile device plugged to your computer, you can test the application
  - The first step consists in installing the driver of your mobile
    - http://developer.android.com/tools/extras/oem-usb.ht
  - For advance debug features, you must activate this option in your mobile
    - Settings → System → Developer Settings → USB debug