Programmazione di sistemi mobili e tablet

Android Development

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WHO WE ARE

Factory Mind is a young cooperative company formed by a team of engineers and young graduates of different nationalities with a common passion for Information Technology and Innovation.
The cooperative has the aim and the ambition of becoming a center of excellence, a benchmark for development and innovation in the software field.
The operational headquarters are located in Trento, a city that, thanks to the Faculty of Information Engineer and Computer Science of the University of Trento, represents a fertile field for development, innovation and internationalization in the sector of Information Technology.

COLLABORATION

PARTNERSHIP

We boast an important partnership with the University of Trento. We have privileged relationship with the Computer Science Department so that it is possible to establish a collaboration with the new graduates and PhDs.
We also have a relevant partnership with Microsoft. We successfully work with them using their latest and innovative borderline Tools and Software.

TEAM

Our team is composed by developers that work on different projects and tasks every day full time. Our main activities are :

- Software Analysis
- Developments (bug fixing, research…)
- Tests (of new software, technologies and code)

On average we are 28 years old, 80% (bachelor degree/master degree) and 20% graduates.
We comes from different Nations (Bulgaria, Paraguay, Italia). We started in 2009, in 2010 our team was composed by 8 developers, since 2012 we are 14!!.

Actually we are looking for new collaborators!!

MORE INFORMATIONS

If you need more information about us, or if you want to contact us, have a look at our site:

www.factorymind.com

For whatever else send an email to:

carlo.menapace @ factorymind.com

...LET'S THE MAGIC BEGIN...

ANDROID

Linux-based operating system for mobile devices such as smartphones and tablet devices. It is developed by the Open Handset Alliance led by **Google**.
Source code is Open Source
Android Apps can be written using Java.

Depending on the mobile device, the latest Android versions are:

- **3.2 Honeycomb** (July 2011) added optimization for a broader range of screen sizes, new "zoom-to-fill" screen compatibility mode, loading media files directly from SD card, and an extended screen support API.

- **4.0 Ice Cream Sandwich** (October 2011) brought Honeycomb features to smartphones and added new features including facial recognition unlock, network data usage monitoring and control, unified social networking contacts, photography enhancements, offline email searching, app folders, NFC.

- **4.2 Jelly Bean** Face unlock, graphics improvement, new camera and gallery, new clock ☺, innovative browser and webview, share, improved accessibility, new keyboard and lock screen

DEVELOPMENT TOOLS

- Eclipse Juno(download at http://www.eclipse.org)
  We also need to install the ADT Plugin for Eclipse .

- Android SDK
  In order to start working with Android, we need to install the Android SDK available on the Android Development site.

  http://developer.android.com/sdk/installing.html

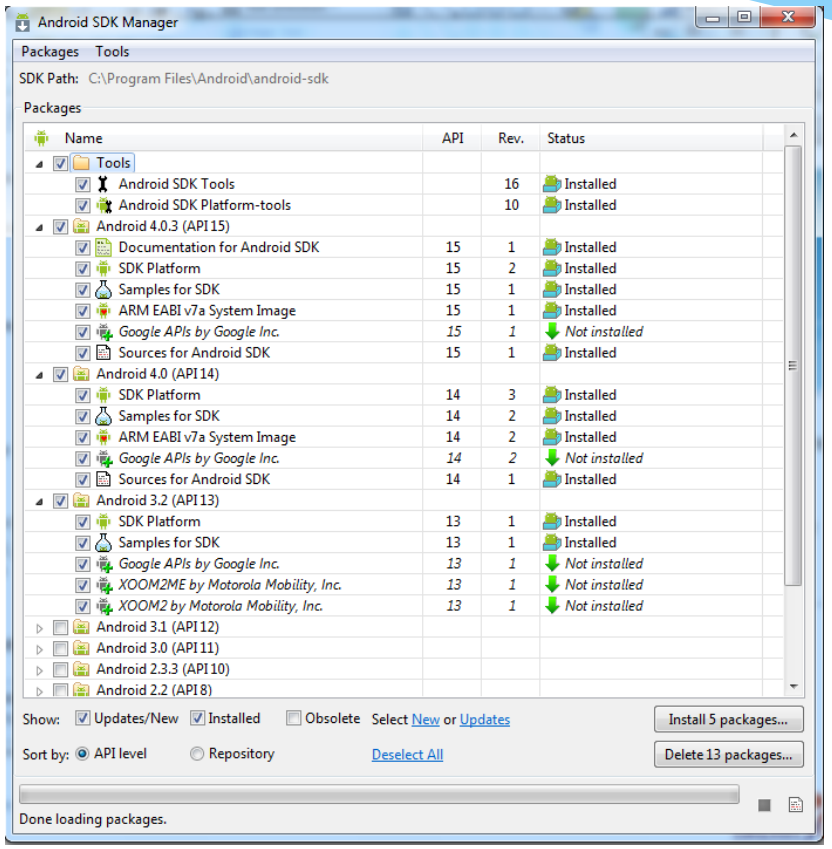
Yeah! When everything has been installed, we can start working with Android!
MMMM.....MAYBE WE HAVE TO WAIT A LOT....QUESTIONS??

SET-UP GUIDE

STEP 1

- Download Eclipse from the **Eclipse** web-site (http://www.eclipse.org).
- Download the **Android SDK**. Depending on you machine and your OS, choose the right package.
- **Wait ☺**

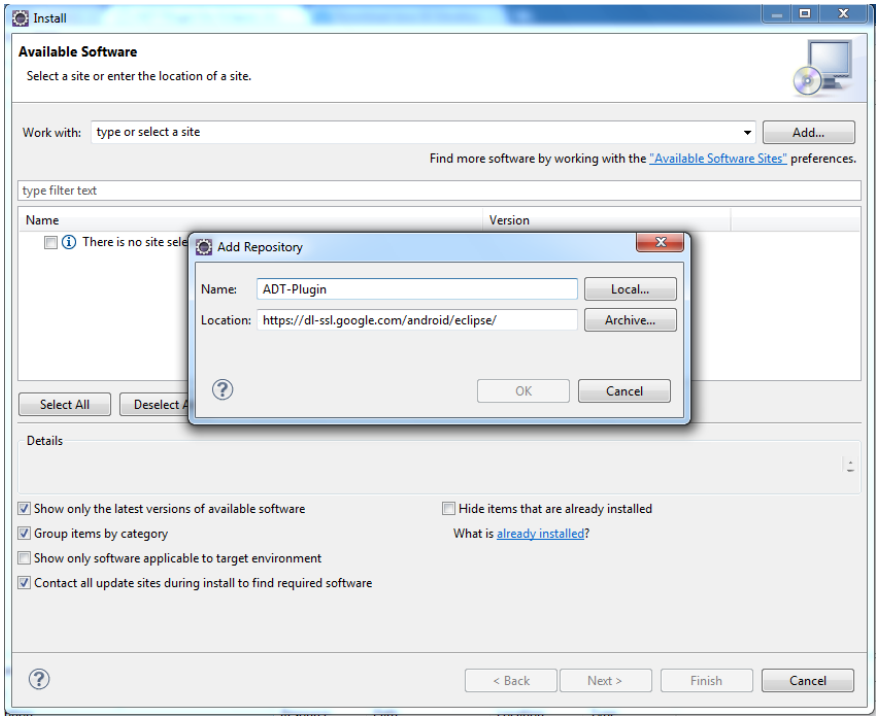
ANDROID SDK-MANAGER



STEP 2

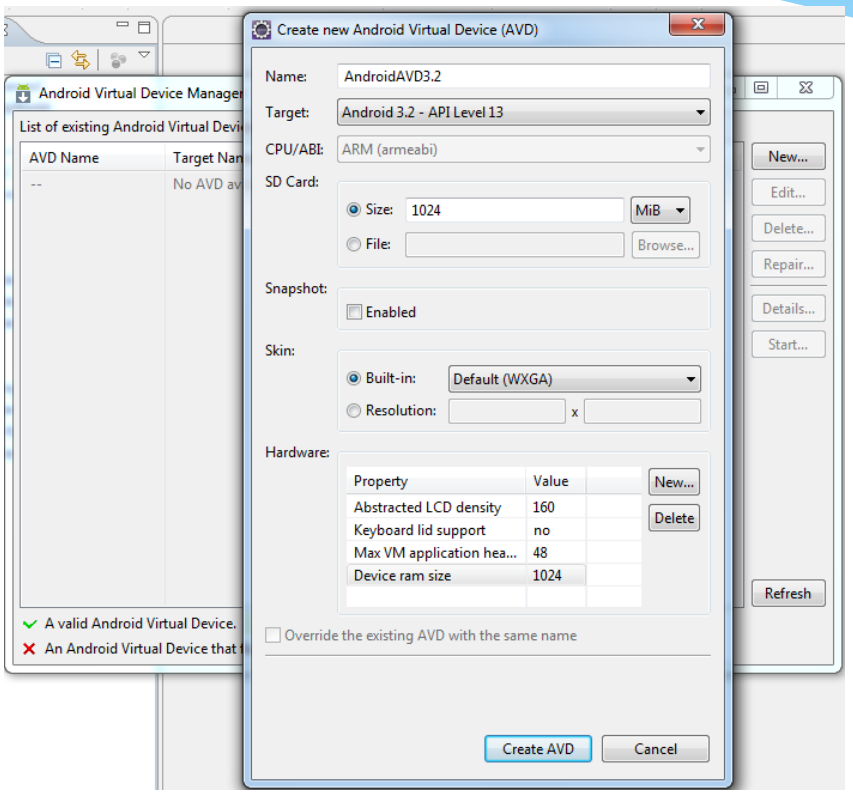
- http://developer.android.com/sdk/index.html
- Install the Android SDK (With Windows install the *.exe file, with Linux extract the *.tar.gz file)
- Open the Android SDK manager (With Linux go to **<android-sdk folder>/tools/** and digit **./android**)
- **select Android Version 3.2 - 4.0 - 4.0.3.** and also the **Tools folder**
- Click on Install packages…
- **Wait ☺**

ECLIPSE-AVD PLUG-IN



- From Eclipse, **Help>Install New Software**
- Click on the Add button and insert
  - Name : ADT-Plugin
  - Location : https://dl-ssl.google.com/android/eclipse/
  - Click OK
- **Wait ☺**
- From the panel, check **Developer Tools**
- Click Next, Accept the license and than Finish. (At some point Eclipse will ask you to restart the environment. Do it!)

SET-UP YOUR EMULATOR



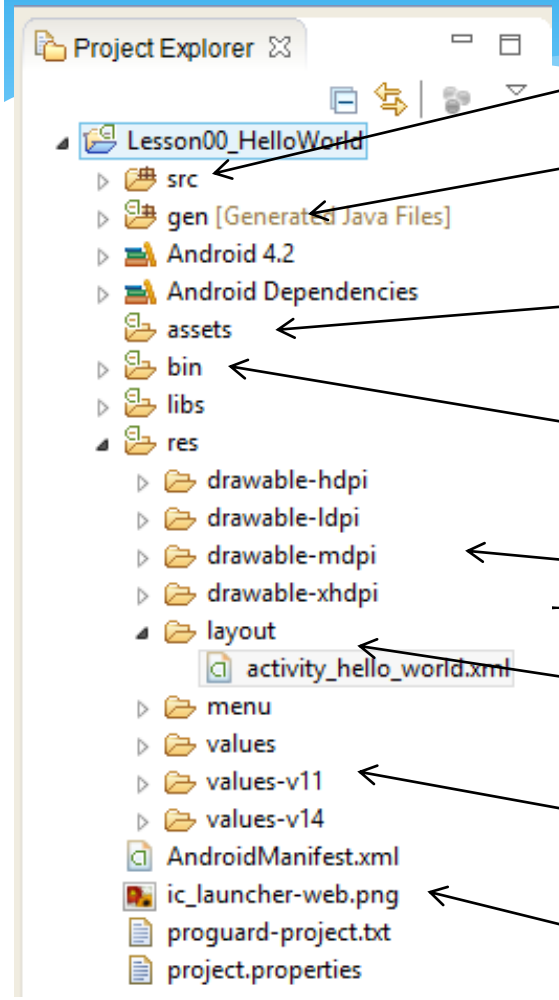
- From Eclipse **Window>AVD Manager**
- On the opening window, click on **New** and fill the form as shown here
  - Name : AndroidAVD3.2
  - Target : Select Android v 3.2
  - SD Card: Size> 1024
  - HW: Device Ram Size>512
- Click Create AVD
- When the new AVD has been created, select it and click **Start>Launch**
- Your Emulator is running!!
- Wait ☺
- x64 ready?

ANDROID PROJECT

Let's create our first Android APP!!

- File>New>Other>Android>Android Project
- Follow the wizard
  - Project Name > the name of the Project Folder(Example1)
  - Next
  - Build Target > the Android SDK version you're using to build your application. The chosen target must be equal to or lower than your AVD target (3.2). Android applications are forward-compatible. Select Android V3.2.
  - Next
  - Application Name > human readable name for you application (Example1)
  - Package Name > this name has to be unique in all your project, it is the location in which the source code will reside. It must have the form of STRING(dot)STRING
  - Create Activity flag > you allow the wizard to create your first main Android Activity with the given name (Example1)
  - Finish

PROJECT OVERVIEW



Source Code

Auto generated class, this folder contains the R.java class.

Directory where you can keep files which also will be included in the **apk** package. The difference between **/res** and **/assets** is that Android doesn't generate IDs for assets content.

Compiled code. Here is (also) your ***.apk** file.

Images folder, based on the dimension/resolution store images here.

Here you can store your application layouts (*.xml).

Localize string that you are going to use in you application (could be more than one).

Application configuration file.

EXERCISE 1

Create a sample **HelloWorld** application with Android.

Execute the **HelloWorld** application you just created and play with the emulator!

Feel free to use whatever control you want!

HANDS ON!

EXTRA SLIDE ;)

If you find the previous exercise too boring, too easy or too stupid, then try this one!!

Create a simple application with a **text field**, a **button** and a **label**.

You should be able to insert some text and, pressing the button you have to show whatever you inserted into the label.

Feel free to use the design pattern you like and the controls you want!!

EXTRA SLIDE 2 :O (no please)

If we are at this point we can have two possible scenarios: a great class or something has broken.

So, if we're in the first case let's do some very strong exercise:

- Let's add another button (say cancel button)
- Pressing the delete button we delete all the entries inserted

That's all for today, any question is appreciated….