



Laboratorio di Applicazioni Mobili (LAM 2017)

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**Dipartimento di Informatica – Scienza e Ingegneria
Alma Mater Studiorum - Università di Bologna**



General course considerations

- ❖ Preliminary considerations: YES, slides In ENGLISH!
 - Dynamic course, with some initial problems and ongoing adaptation process
 - People, support, devices and **labs**, material, numbers...
 - This is the 6th year edition... 100% new material with respect to 3rd edition.
 - Motivations for the course (...you know why you are here, but...)
 - Enabling expression of potential for students towards apps world and projects
 - Activating bindings with research themes: IoT, M2M, pervasive apps, etc....
 - Both Android AND iOS! Highly required both in the market (75% vs 25% share)
 - The classes distribution will be **60% ANDROID** and **40% iOS** to cope with projects potential.
 - Need your help to make it evolve into something better year by year
 - Be patient, be constructive, be ambitious



Programming in Swift with iOS 10: Module Overview



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iOS ... **Why?**

GOALS OF THE MODULE:

- Introducing the iOS architecture
- Implementing simple iOS applications
- Get familiar with Xcode and Swift (3.0)
(with reminiscence of Objective C and Swift 2.0)



iOS considerations

❖ Preliminary considerations:

- iOS 10.0 programming requires a MAC (Intel based, Sierra 10.12 or better)
 - Limited lab facilities in Ranzani Lab (7 iMAC with configuration in process)
 - Reference is iOS10 (*) (some remarks on differences with previous iOSs)
 - Xcode SDK (free download) needed. No need to join a “program”.(*)
 - No HW required (but OK to have it): emulation possible for our apps. For running on device or app store you must join a program (not for free. University programs possible. We will discuss this).
 - Raise up your hands: how many of you feel the iOS interest?
 - How many have a MAC or iOS device?
 - How many played with iOS (<10.0), Xcode >7.2, or older Interface Builder and SWIFT/ objective C?
- (*) issue with the lab: El Capitan installed will be replaced by Sierra to support Xcode 8.2.1 and iOS 10.0



iOS considerations

- ❖ Prerequisites: Object-Oriented Programming
- ❖ ...you should be familiar (how many are?) with:
 - Object-Oriented Terms
 - Class (description/template for an object)
 - Instance (manifestation of a class)
 - Message (sent to objects to make them act)
 - Method (code invoked by a Message)
 - Instance Variable (object-specific storage)
 - Inheritance (code-sharing mechanism)
 - Superclass/Subclass (Inheritance relationships)
 - Protocol (non-class-specific method declaration)



iOS considerations

- ❖ ...logistic of lessons is complicated:
 - Frequent absence due to EU projects and missions
 - Interleaving of classes between iOS and Android (exceptions possible)
 - **Monday**: Android, **Thursday**: iOS, **Friday**: Android/Project club
 - Important to have a mailing list for urgent communications
 - Creation and collection of names – emails: lam2017
 - Twitter account: @profBononi
 - Important to always check for last minute problems with lessons on the same day (morning check recommended)
 - Course website and mailbox. No newsgroup needed.
 - <http://www.cs.unibo.it/~bononi/> > courses > Lab Applicaz. Mobili
 - Luca's reference URLs for Android material will be communicated.



iOS considerations

- Typical Lessons calendar:
 - Monday, 9.30-11.30 Room E2
 - Thursday, 9.00-11.00 Room E2
 - Friday, 9.00-11.00 Room E1
- Today: just a welcome and course introduction.
- Next lesson Thursday February 23, 2017 (with iOS)



iOS considerations

- However: for people having difficulties to attend lessons there is a great option (only for iOS part):
 - Our lessons are mainly based on Stanford Winter 2017 classes available online @iTunes (a subset is illustrated for time reasons)
 - 2017 material appearing now (iOS 10.0)
 - **DO NOT CONTACT STANFORD PEOPLE TO ASK QUESTIONS! They are not our online reference manual. Contact me in case of questions or problems.**
 - If you want to see the excellent illustration of Stanford's course contents you can access iTunes U and remotely download material and attend classes (in english):
 - Previous years available, starting from 2010.
 - You are free to go further our lessons on iTunesU (if you are interested) covering the full course potential.
 - Excellent covering of advanced iOS topics not covered in classes for time reasons



iOS considerations

- Course exam and projects:
- Exam:
 - discussion of the project with presentation and questions (oral)
 - When? When you are ready (more or less, due to high numbers)... we are clustering exams in time windows or “exam days” with open participation of your colleagues. There will be multiple project submission deadlines!
- Course Project:
 - individual (max 2 persons)
 - Preliminary agreed (and officially assigned) by me or Luca (written consent)
 - List will be supplied... but we are open to your initiative and interests... sky’s limit.
 - Natural binding with thesis work (if interested), specifically in vehicular and IoT apps.
 - Best projects selected for department initiatives (best project award and show up)
 - Credentials for jobs... disclaimer: this course is not a certification! (too short) It is an introduction to the context of iOS and Android mobile apps development.



iOS considerations

■ References (iOS)

- Apple on-line documentation
 - <http://developer.apple.com>
- My website will contain all lessons' material:
 - <http://www.cs.unibo.it/bononi/LAM2017/>
- <https://swift.org/documentation/>
- The Swift Programming Language (Swift 3.0.1), Swift Programming Series, Apple Inc. (available for free on iTunes)



iOS considerations

Questions?