Laboratorio di Applicazioni Mobili (LAM 2019)

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General course considerations

❖ Preliminary considerations: YES, slides In ENGLISH!

- ▪ Dynamic course, with problems due to ongoing adaptation process
  - People, support, devices and **labs**, material, numbers…
  - This is the 7th year edition… 100% new material with respect to 6th 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 **75% ANDROID and 25% 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 (12)
Module Overview (2019)

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iOS ... Why?

GOALs OF THE MODULE:

➢ **Introducing** the iOS architecture

➢ **Implementing** simple iOS applications

➢ **Get familiar with Xcode and Swift**
(with reminiscence of Objective C and previous Swift versions)

iOS considerations

❖ **Preliminary considerations:**

- ▪ iOS programming requires a MAC
- ▪ Limited lab facilities in Ranzani Lab (4 iMAC with configuration in process)
  - • Reference is > iOS11 (*) (some remarks on differences with previous iOSs)
  - • Xcode 10 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 (12.0), Xcode 10, or older Interface Builder and SWIFT/ objective-C?

  - • (*) issue with the lab: to support Xcode 10 and iOS 12.0

iOS considerations

❖ Prerequisites: Object-Oriented Programming

❖ …you should be (how many of you are?) familiar with:

- Object-Oriented concept, programming and terminology
- Class (description/template for an object)
- Object Instance (manifestation of a class)
- Message/Method (sent to objects to make them run some code)
- Instance Variable (object-specific storage) called Property in iOS
- Inheritance (code-sharing mechanism)
- Superclass/Subclass (Inheritance relationships)
- Protocol (non-class-specific method declaration)
- Bonus: Model-View-Controller (MVC) design

iOS considerations

❖ …logistic of lessons is complicated:

- Frequent absence due to other classes, projects and missions
- Interleaving of classes between iOS and Android (exceptions possible)
  - Wednesday:Android/iOS, Thursday: Android/iOS
- Important to have a mailing list for urgent communications
  - Creation and collection of names – emails: lam2019
  - 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:
  - See schedule

- Today: just a welcome and course introduction.
- First classes will be on Android (February – April)
- iOS at the end (April - May)
- In the week 11-15 March lessons suspended

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 2019 classes available online @iTunes (a subset is illustrated for time reasons)
  - 2018 and 2019 material (iOS 11.0 and 12.0)
  - 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/LAM2019/

  - https://swift.org/documentation/
  - The Swift Programming Language, Swift Programming Series, Apple Inc. (available for free on iTunes)

Questions?