

ANDROID PROGRAMMING

LESSON 1

Version 1.0

Agenda

- **Instructor introduction**
- **Contents**
- **Course Requirements**
- **Grading policy**
- **Android programming overview**
- **Installation environment**
- **Hello world**
- **Creating AVD (Android Virtual Devices)**

Instructor introduction

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Group online:

Nộp bài: <https://classroom.google.com/>

- Bảng điểm

Contents

- Android Environment Development Setting
- Android Architecture - Activity life cycle
- Android Layout
- Constrain - Event Handling
- Android Touch and Multi-touch Event Handling
- Fragment
- Transitions
- Floating Action Button - SnackBar - TabLayout

- Navigation – MasterDetail
- Android Intent
- Android Thread
- Android Service
- Android Notification
- Google Firebase
- SQLite - Content Provider
- Google Map

Course Requirements

- Following lessons in classroom
- Reading textbook and documents at home
- Doing all exercises at home
- should bring your laptop to class for short exercises

Grading policy

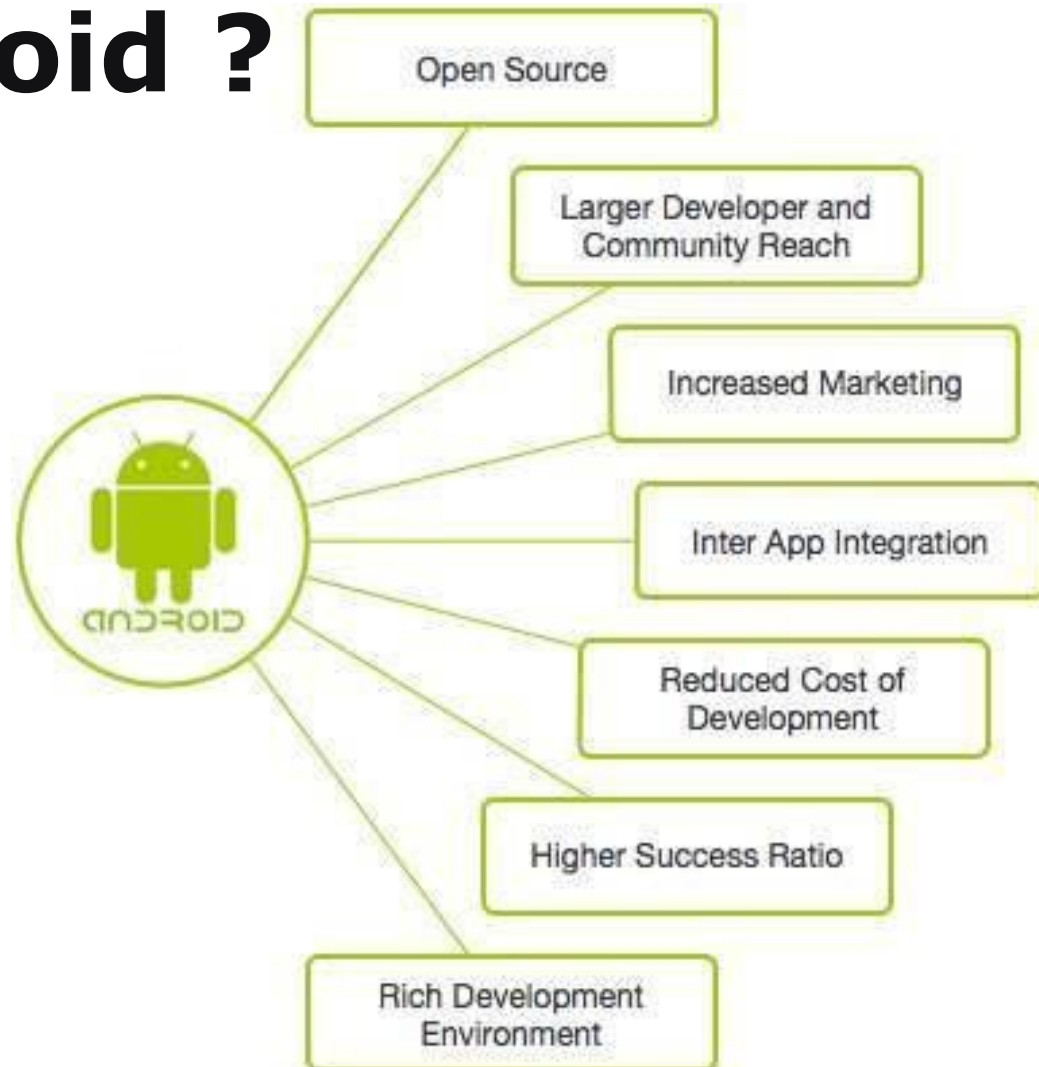
- Must attend at least 75% of contact hours (if not, not allow to take exams).
- Evaluating
 - Attendance marks (**AD**, 10%)
 - **all** exercises (at class or at home) **or** a presentation for a session (your choice) for **L1** (10%)
 - **all** exercises (at Labs) for **L1** (10%)
 - Assignment for **L2** (20%)
 - Final Exam (**FE**, 50%) (Lab)
 - Total score =
 $10\%(AD) + 20\%(L1) + 20\%(L2) + 50\% (FE)$

Android programming overview

- Android is an open source and Linux-based **Operating System** was developed by the *Open Handset Alliance* led by Google
- The first beta version of android ADK was released by Google in 2007

Android programming overview

Why Android ?

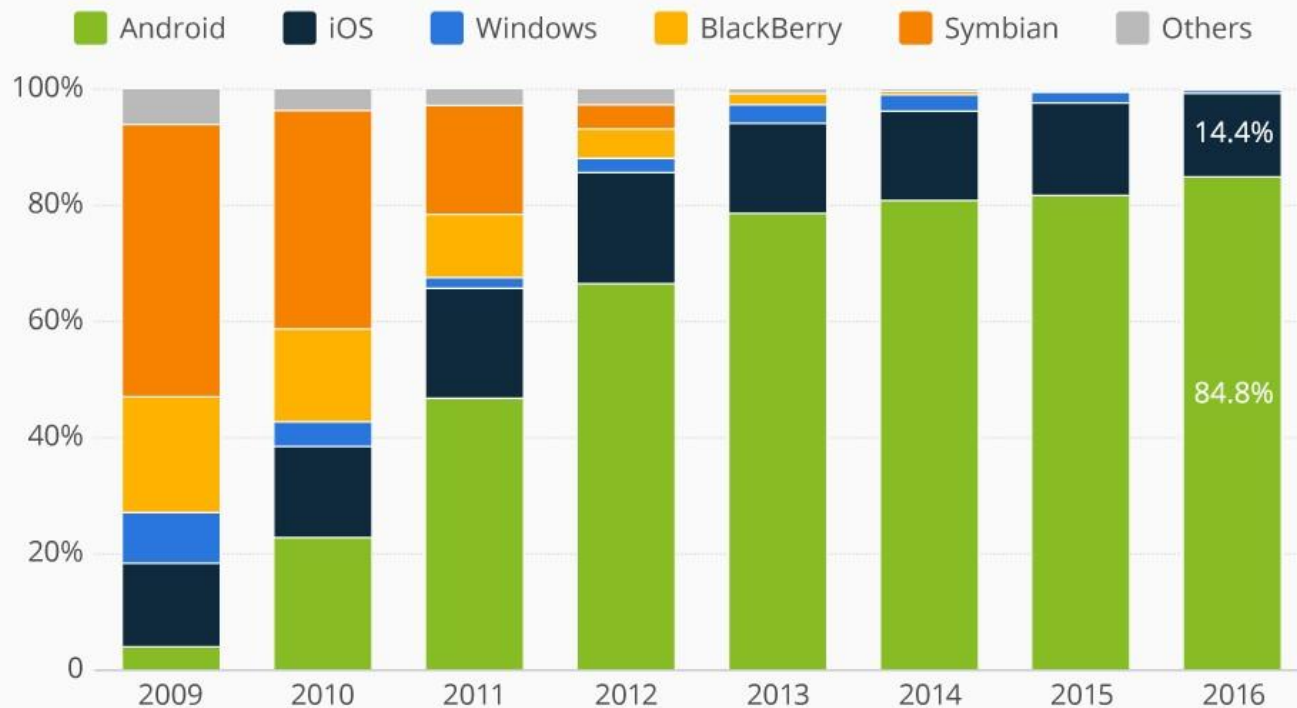


Android programming overview

Why Android ?

The Smartphone Platform War Is Over

Worldwide smartphone operating system market share (based on unit sales)



@StatistaCharts Source: Gartner

statista

Android programming overview

Features of Android

- UI & UX_(User Experience)
- Connectivity
- Storage
- Messaging
- Web browser
- Multi-touch
- Multi-tasking
- Resizable widgets
- Multi-Language
- GCM (_{Google Cloud Messaging})
- Wi-Fi Direct
- Sensors

Android programming overview



Angel Cake
Android 1.0



Battenberg
Android 1.1



Cupcake
Android 1.5



Donut
Android 1.6



Eclair
Android 2.02.1



Froyo
Android 2.2



Gingerbread
Android 2.3



ANDROID VERSIONS



Honeycomb
Android 3.0



Ice Cream Sandwich
Android 4.0



Jelly Bean
Android 4.1



KitKat
Android 4.4



Lollipop
Android 5.0



Marshmallow
Android 6.0

Installation environment

- **System requirement**

<https://developer.android.com/studio/#Requirements>

- **Installing JDK**

<https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

- **Installing Android Studio**

<https://developer.android.com/studio/>

- **Installing Additional Android SDK Packages**

File | Settings | Appearance & Behavior | System Settings | Android SDK

Installation environment

- **Setting environment variables**

System | Advanced System Settings |
Environment Variables

Hello world

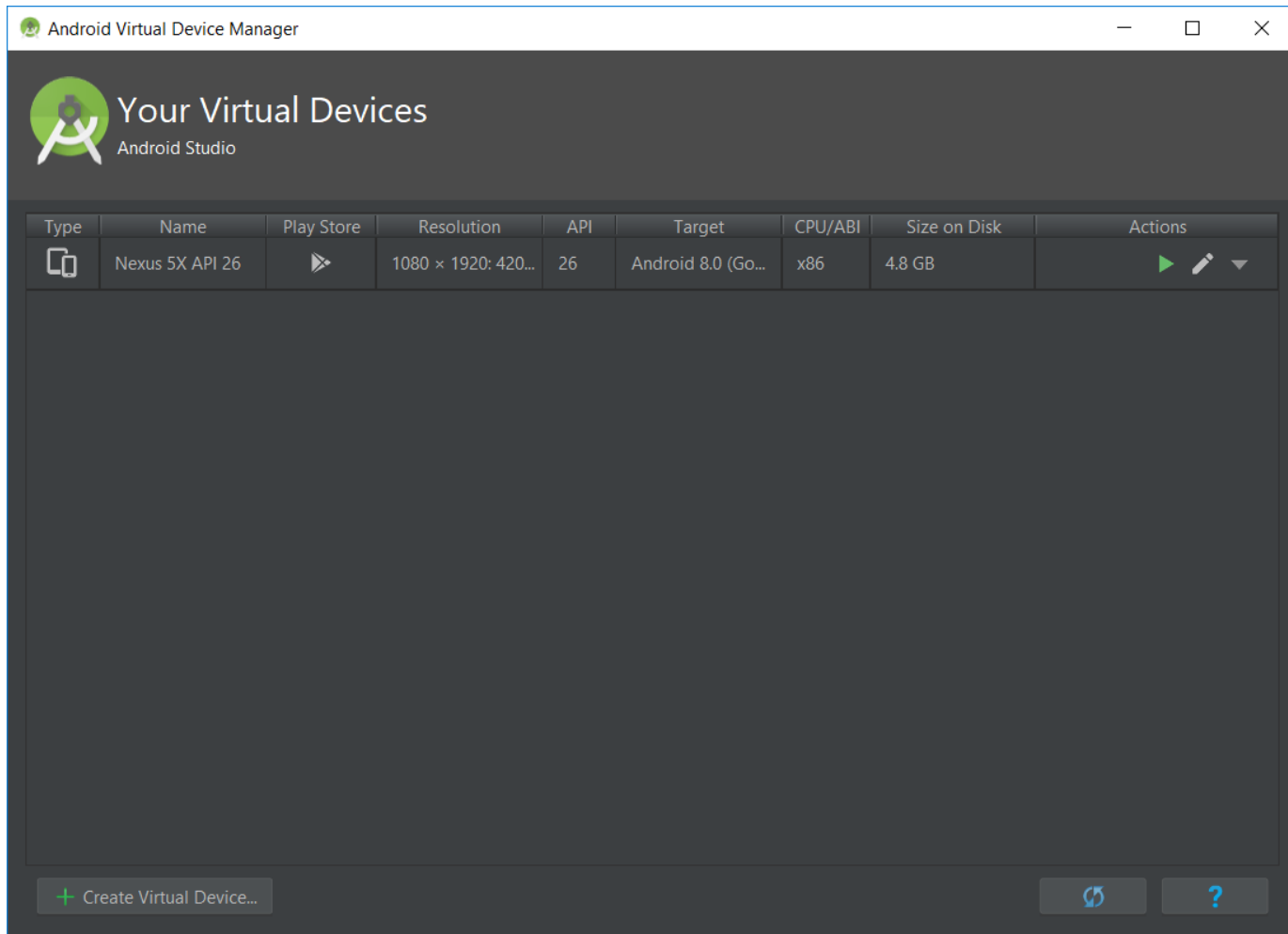
- **Create the 1st project**
- **A Tour of the Android Studio User Interface**

Creating AVD

- What is AVD (Android Virtual Device)



Creating AVD



Debug on real device

- Android Debug Bridge (ADB)

Facilitate interaction between Android Studio and both AVD emulators and physical Android devices for the purposes of running and debugging applications

- Where's the ADB locate?

Android SDK *platform-tools* sub-directory

Debug on real device

- Enable Developer Options

Kernel version

4.4.78-perf+ (gcc version 4.9.x 20150123
(prerelease) (GCC))
queen@dff1366f11d0 #1
Tue Nov 6 10:12:39 CST 2018

Build number

OPM1.WW_Phone-15.2016.1810.337-
20181106

Tap 7 times here

Debug on real device

- Enable debugging mode

Debugging

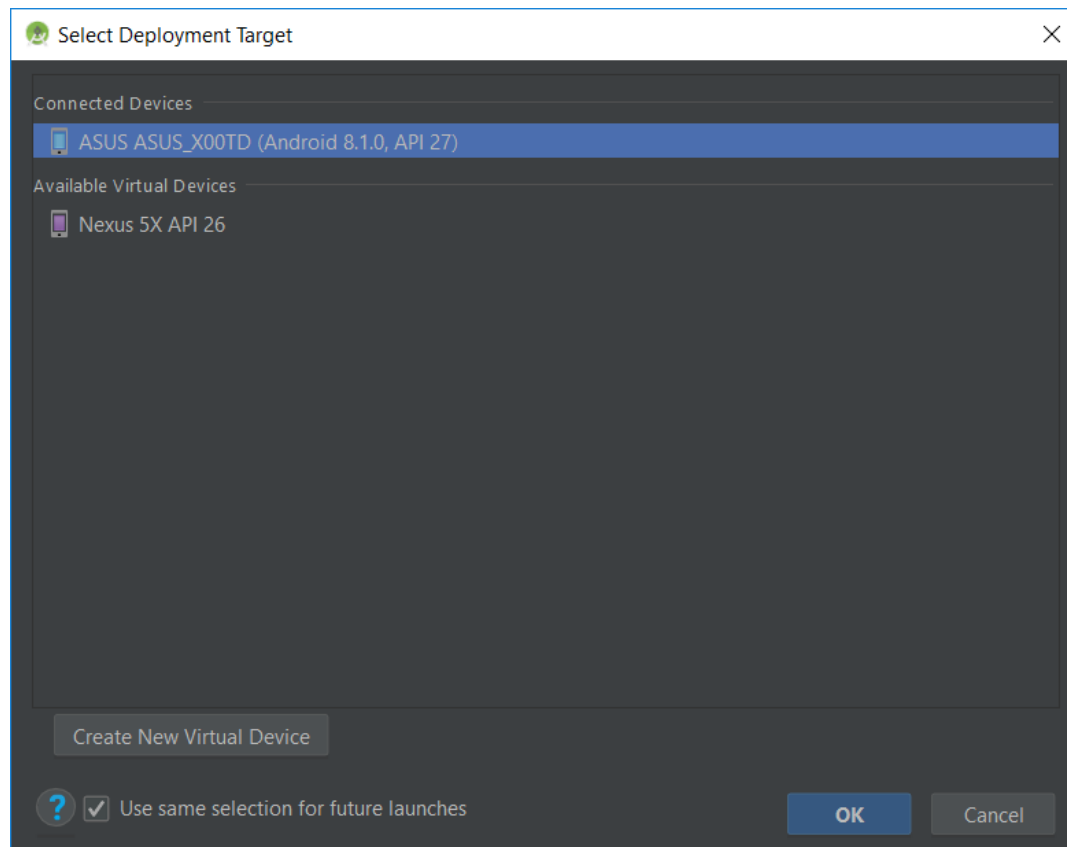
USB debugging

Debug mode when USB is connected



Debug on real device

- Plugging and Testing



Hello world Demo



Android Studio

Version 3.5.2

- + [Start a new Android Studio project](#)
- 📁 Open an existing Android Studio project
- 📁 Check out project from Version Control ▼
- 📁 Profile or debug APK
- 📁 Import project (Gradle, Eclipse ADT, etc.)
- 📁 Import an Android code sample

⚙️ [Configure](#) ▼ [Get Help](#) ▼

Choose your project

Phone and Tablet

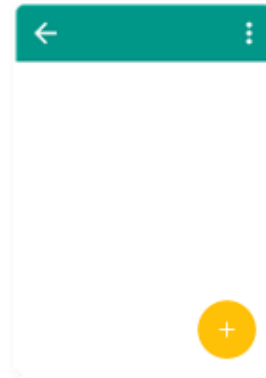
Wear OS

TV

Android Auto

Android Things

Add No Activity



Basic Activity



Empty Activity



Empty Activity

Creates a new empty activity

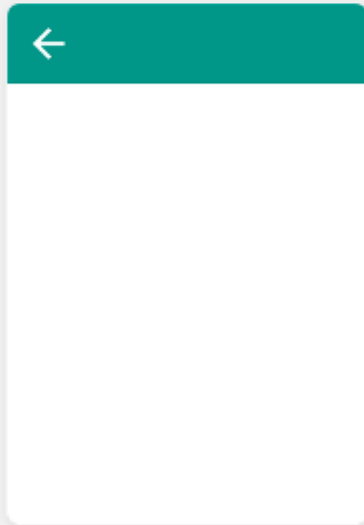
Previous

Next

Cancel

Finish

Configure your project



Name

HeloWorlddemo

Package name

com.heloworlemo

Save location

C:\Subjects\Ex-D16



Language

Java



Empty Activity

Minimum API level

API 15: Android 4.0.3 (IceCreamSandwich)

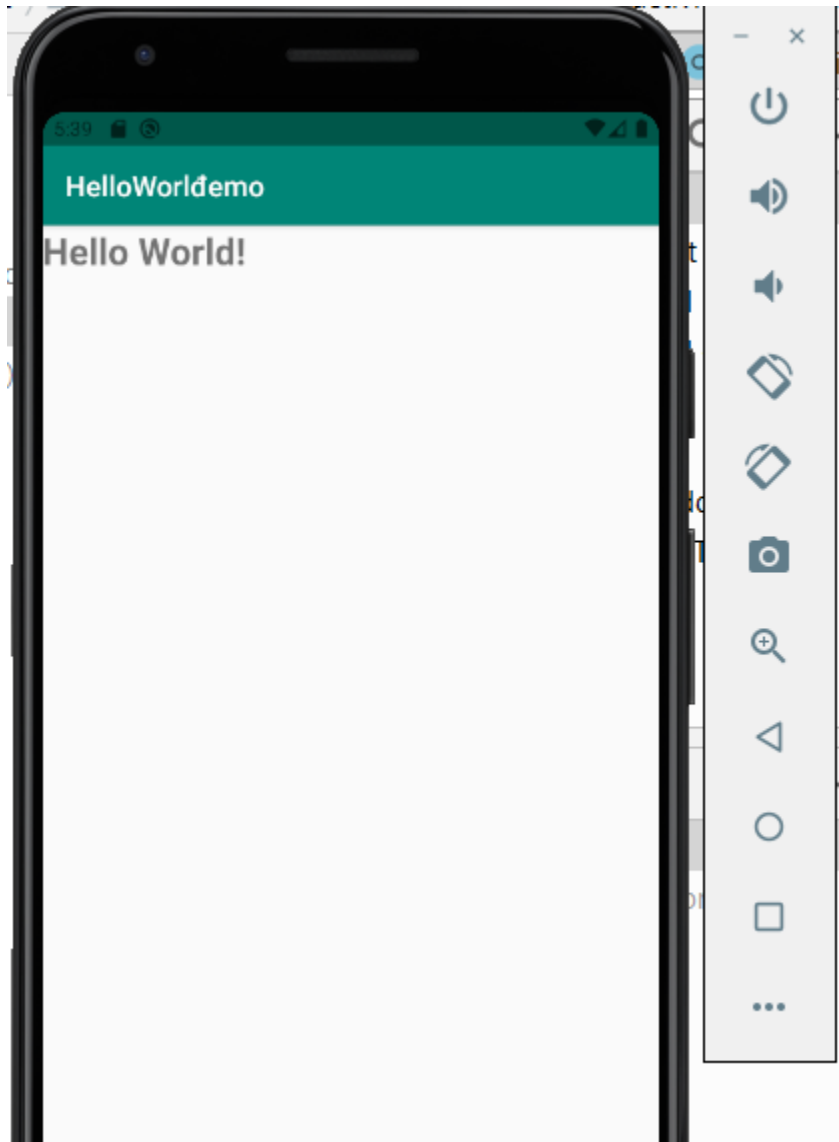


Previous

Next

Cancel

Finish



- End of Lesson 1



Thank you!