

Lecture 4: Android Fundamentals

1. Architecture

4 Components:

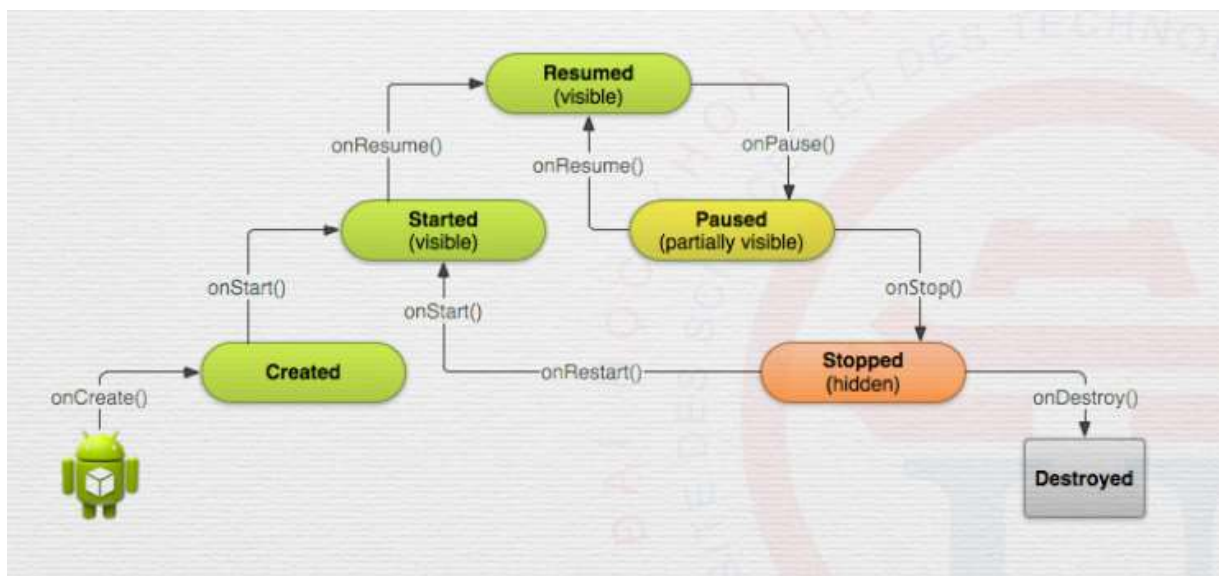
- Linux Kernel
- Library: C/C++, low level services
- Framework: Java; Higher level; Provide Interface, high level service
- Application layer: Java; Our App

2. Compilation

- Java -> Java Bytecode -> Android Virtual Machine
- Virtual Machines: Dalvik vs ART

3. Controllers: Context, Application, Activity and Fragment

- MVC Model: Model-view-controller
- Controllers
 - Context: Access Application specific data; Access System services; Central control
 - Application: Context's subclass; Global data & Early initialization of libraries
 - Memory management: Garbage Collector; Upper limit for Application; Out of memory exception
 - Activity: Building block for app; has a unique task/purpose; one or more per app; handles display of a single screen
 - Activity lifecycle



- Intent: Asynchronous messaging mechanism: Message to pass to other services/activities; contain data
- Fragment: A behavior or a portion of UI; officially supported from Honeycomb

4. View

- Interact with user
- Building blocks for User Interface
- XML or dynamic code

- d. Viewgroup: Contain children; Layouts