

An Introduction to **Android Development**

Accessibility Capstone
Nov 15, 2011





outline for today

- Why Android?
- Architecture Overview
- Application Lifecycle
- Application Building Blocks
- Getting Started
- Hello World



why android?

- Open, free development platform
- Built-in services out of the box
- Automatic management of app lifecycle
- Portability across hardware



architecture overview

- Linux kernel
- Native libraries
- Android runtime
- Application framework
- Applications

Applications

Home

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Browser

Your App Here

Application Framework

Activity
Manager

Window
Manager

Content
Providers

View System

Notification
Manager

Package
Manager

Telephony
Manager

Resource

Location
Manager

Sensor
Manager

Libraries

Surface
Manager

Media
Framework

SQLite

OpenGL | ES

FreeType

WebKit

SGL

SSL

libc

Android Runtime

Core Libraries

Dalvik Virtual
Machine

Linux Kernel

Display Driver

Bluetooth
Driver

Camera Driver

Flash Memory
Driver

Binder (IPC)
Driver

Keypad Driver

USB Driver

WiFi Driver

Audio Drivers

Power
Management

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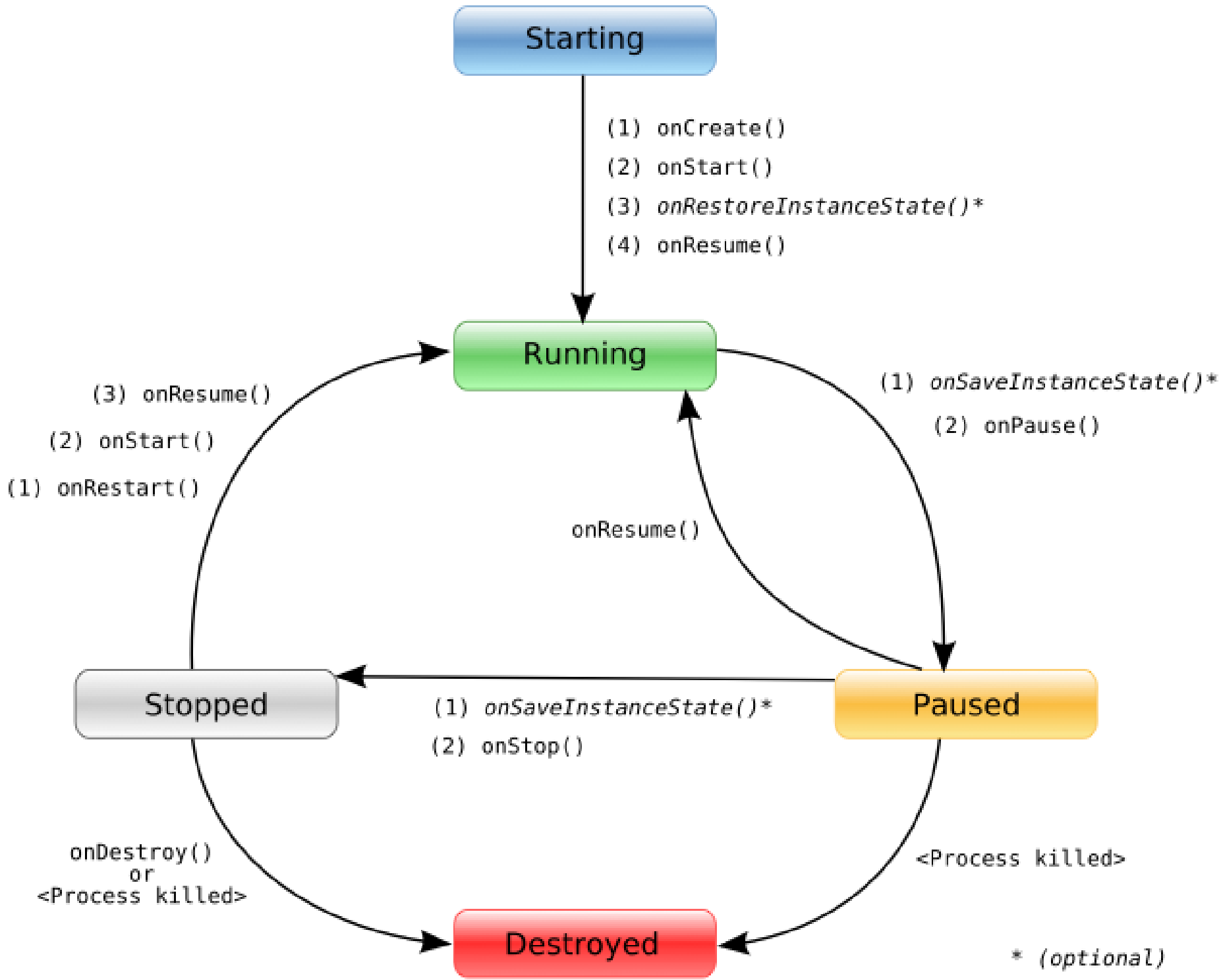
Audio Drivers

Power Management



application lifecycle

- How is Android different than desktop?
- One app in the foreground
- Move from one application to another
- User can hit “back” button





application building blocks

- Activities (activated by Intents)
 - Presents a visual user interface for one focused endeavor the user can undertake
- Services
 - No visual UI but runs in background for an indefinite period of time
- Content Providers
 - Makes a specific set of an application's data available to other applications



getting started

- Supported Operating Systems
 - Windows XP or Vista
 - Mac OS 10.4.8 or later
 - Linux
- Hardware Requirements
 - > 900 MB



development environments

- Eclipse IDE
 - Eclipse 3.4 (Ganymede) or 3.5 (Galileo)
 - Recommended Packages: Eclipse IDE for Java EE Developers, Eclipse IDE for Java Developers, Eclipse for RCP/Plugin-Developers, or Eclipse Classic (3.5.1+)
 - Eclipse JDT Plugin (incl. in most Eclipse IDE packages)
 - JDK 5 or JDK 6 (JRE not enough)
 - Android Development Tools Plugin



get started tutorial

1. Install and setup the SDK

<http://developer.android.com/sdk/index.html#quickstart>

2. Complete the “Hello World” tutorial

<http://developer.android.com/guide/tutorials/hello-world.html>