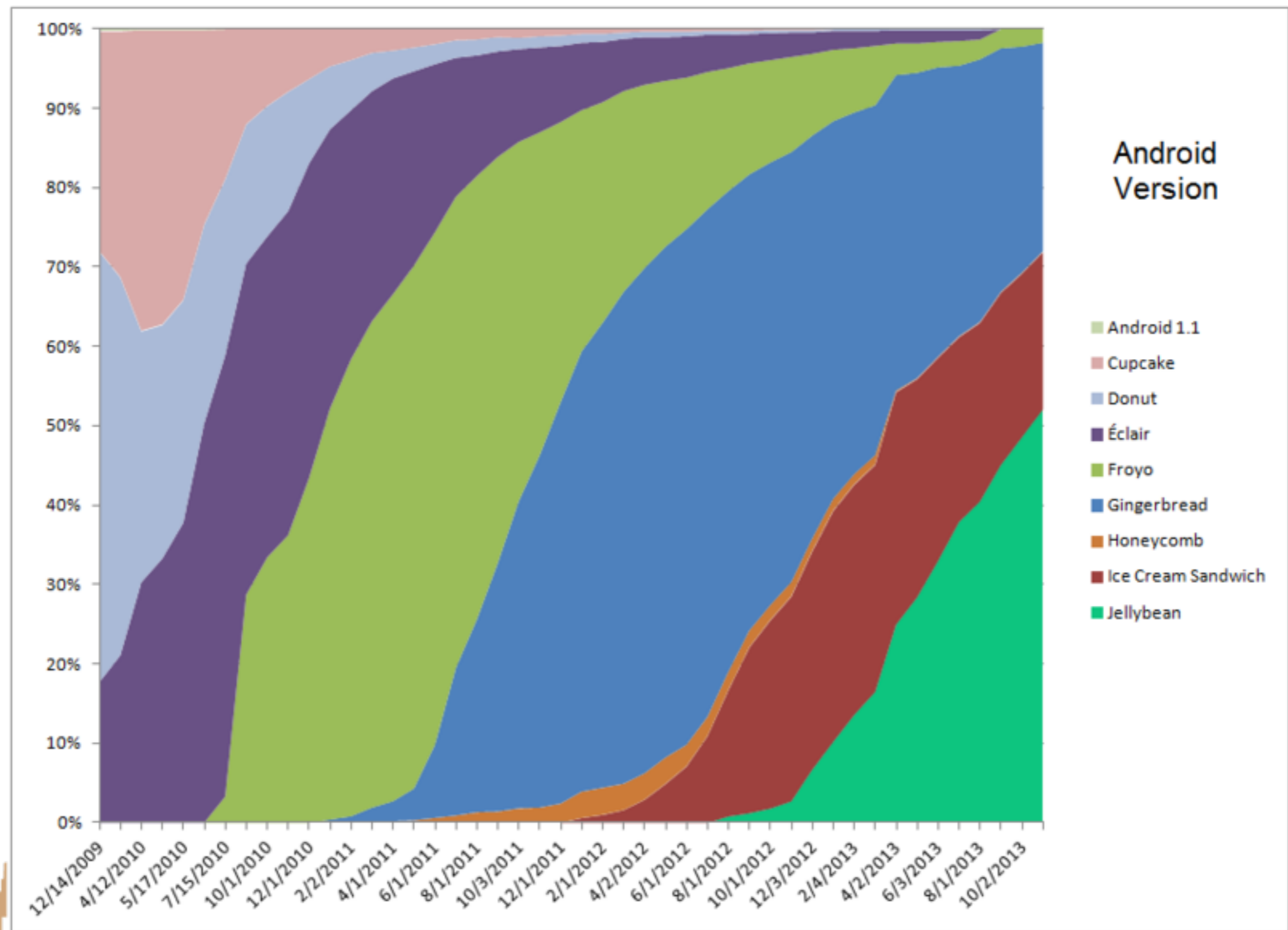


# User Interaction: Intro to Android

Assoc. Professor Donald J. Patterson  
INF 133 Fall 2013



# Intro to Android



## Overview of Android

- Google play (née Android Marketplace)
- Place to get 3rd-party android apps
- Utilizes Google Checkout for payment
- Not exclusive source for applications
- Applications are not “blessed” at all by Google
  - It is merely a convenience for developers



## Easy Tie

basesign



★★★★★ (98)

\$1.99 BUY

### More from developer



#### Easy Tie Lite

BASESIGN

★★★★★ (557)

Free



#### Lesari - Meine FilmDatenba

BASESIGN

★★★★★ (42)

Free



#### Calc n Con

BASESIGN

★★★★★ (2)

\$1.40

### Users who viewed this also viewed



#### Tie Deluxe

JQ SOFT

★★★★★ (31)

\$0.99

### Users who installed this also installed

### OVERVIEW

### USER REVIEWS

### WHAT'S NEW

### PERMISSIONS

## Description

Don't know how to tie a tie?

Learn it with Easy Tie!

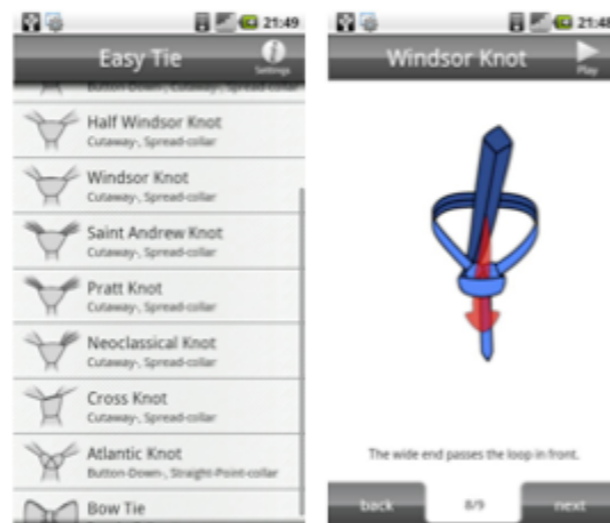
Easy Tie is an app that shows you step-by-step how to tie a necktie.

Knots included:

- Simple Knot
- Double K.
- Small K.
- Half Windsor K.
- Windsor K.

[Visit Developer's Website](#)

## App Screenshots



## User Reviews

5 star  71

4 star  10

Average rating:

+1 10

[Tweet](#)

### ABOUT THIS APP

RATING:

★★★★★ (98)

UPDATED:

June 21, 2010

CURRENT VERSION:

1.6

REQUIRES ANDROID:

1.5 and up

CATEGORY:

Lifestyle

INSTALLS:

1,000 - 5,000



last 30 days

SIZE:

1.0M

PRICE:

\$1.99

CONTENT RATING:

Everyone



**Easy Tie**  
basesign



★★★★★ (106)

\$1.99 BUY

⚠ You don't have any devices.

More from developer



**Easy Tie Lite**

BASESIGN

★★★★★ (589)

Free



**Lesari - Meine FilmDatenbank**

BASESIGN

★★★★★ (69)

Free



**Calc n Con**

BASESIGN

★★★★★ (2)

\$1.40

See more >

Users who viewed this also viewed



**How to knot a tie**

MARC WEBER

★★★★★ (1,349)

OVERVIEW

USER REVIEWS

WHAT'S NEW

PERMISSIONS

Description

Don't know how to tie a tie?

Learn it with Easy Tie!

Easy Tie is an app that shows you step-by-step how to tie a necktie.

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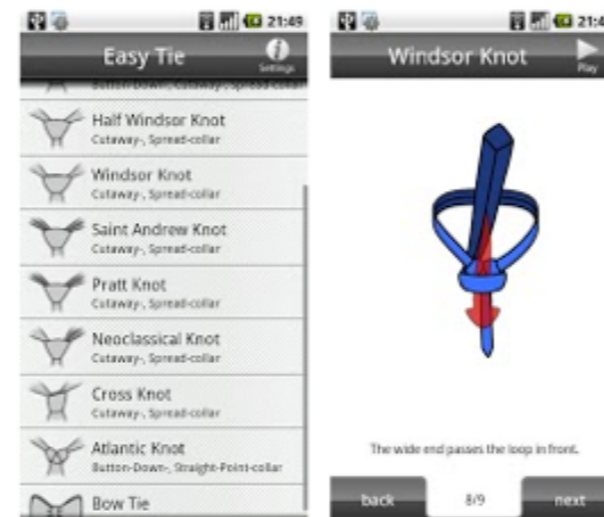
- Simple Knot
- Double K.
- Small K.
- Half Windsor K.
- Windsor K.
- Saint Andrew K.

MORE

Visit Developer's Website >

Email Developer >

App Screenshots



User Reviews

Write a Review

5 star

79

Average rating

+1 36

Tweet

ABOUT THIS APP

RATING:

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5,000 - 10,000

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1.0M

PRICE:

\$1.99

CONTENT RATING:

Everyone

# Android Features (hardware dependent)

- Application Framework
  - enabling reuse and replacement of components
- Dalvik virtual machine (now ART)
  - optimized for mobile devices
- Integrated browser
  - based on the open source WebKit engine
- Optimized graphics
  - powered by a custom 2D graphics library; 3D graphics based on the OpenGL ES 1.0 specification

# Android Features (hardware dependent)

- SQLite
  - for structured data storage
- Media support
  - (MPEG4, H.264, MP3, AAC, AMR, JPG, PNG, GIF)
- GSM Telephony
- Bluetooth, EDGE, 3G, and WiFi
- Camera, GPS, compass, and accelerometer
  - Some more advanced context in KitKat

# Android Features (hardware dependent)

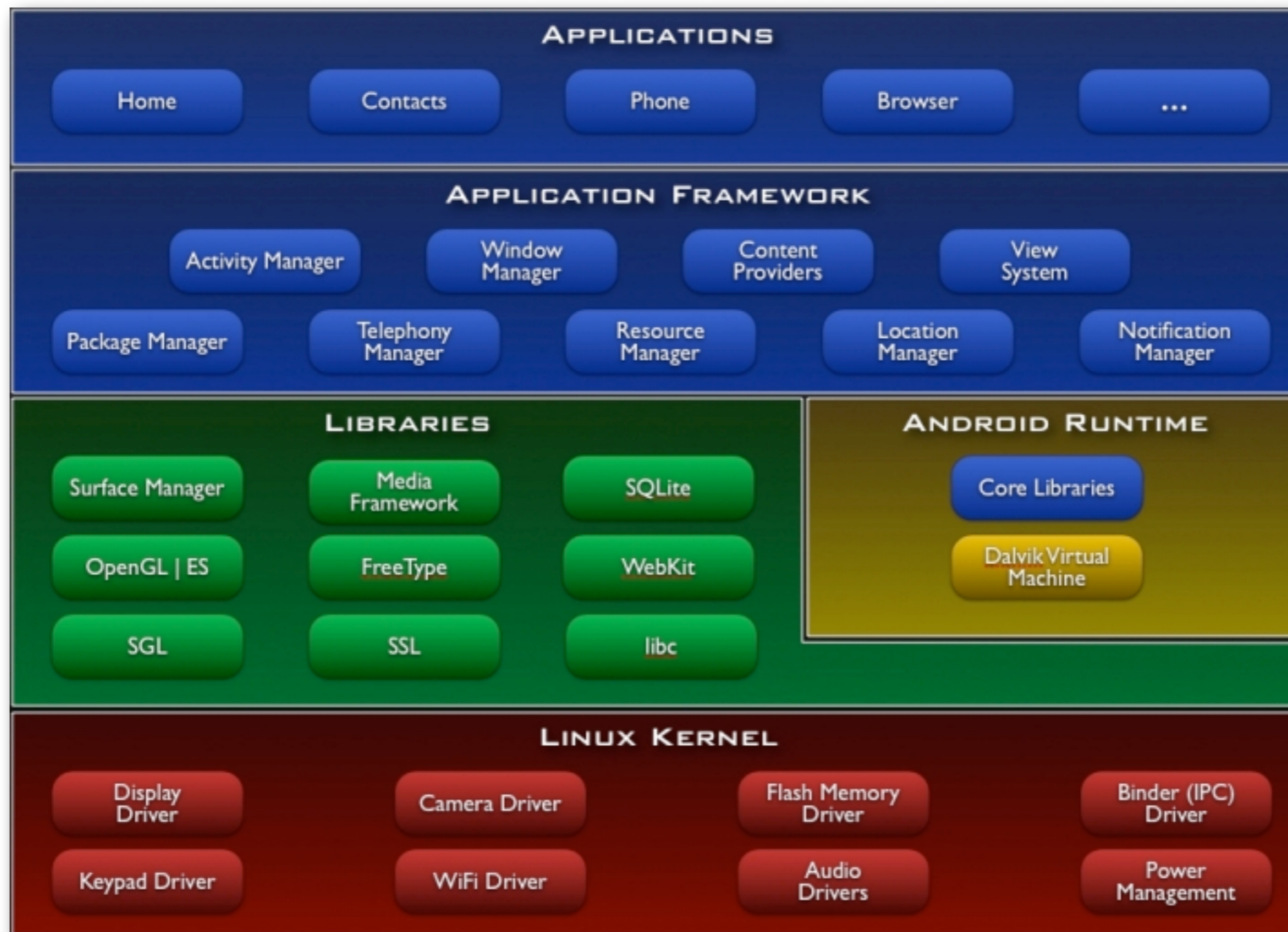
- Multi-touch
  - brief concern about patent infringement with Apple
- Multi-tasking support
- Tethering
  - What is this?
- NFC / Android Beam



# Android Features (hardware dependent)

- Rich development environment
  - a device emulator
  - tools for debugging
  - tools for memory profiling
  - tools for performance profiling
  - plugin for Eclipse IDE

## Android Features (hardware dependent)



# Application Fundamentals

- By default:
  - Each application is run in its own process
  - Each process has its own virtual machine
  - Each process has its own user that runs it

# Application Fundamentals

- Code reuse is central to Android
- Applications can be started from several points
  - not just “main()”
- Four components that can be run:
  - Activities
  - Services
  - Broadcast receivers
  - Content providers

# Application Fundamentals

- Activities
  - a user interface for doing a task
    - e.g, a photo browser, a “send-mail” interface
    - subclass of “Activity” base class
  - an application is a collection of activities that call each other (or activities in other applications)



## Application Fundamentals

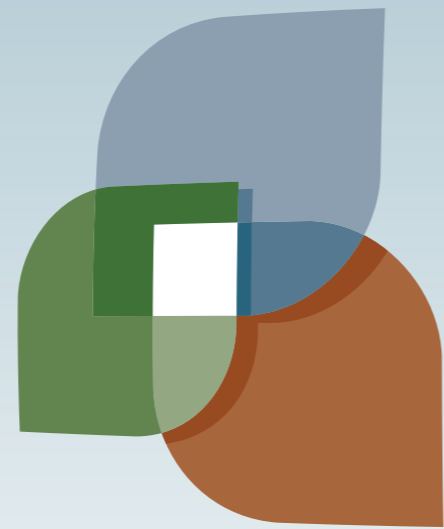
- Services
  - a task that is typically run in the background
    - e.g, a music player
    - subclass of “Service” base class

# Application Fundamentals

- Broadcast receivers
  - receives broadcast announcements
    - signals from the os and other applications
    - e.g., “user has entered a new location”
      - “user has taken a photo”
  - subclass from “BroadcastReceiver”

# Application Fundamentals

- Content provider
  - provides data
  - extends the “ContentProvider” class



L U C I

