



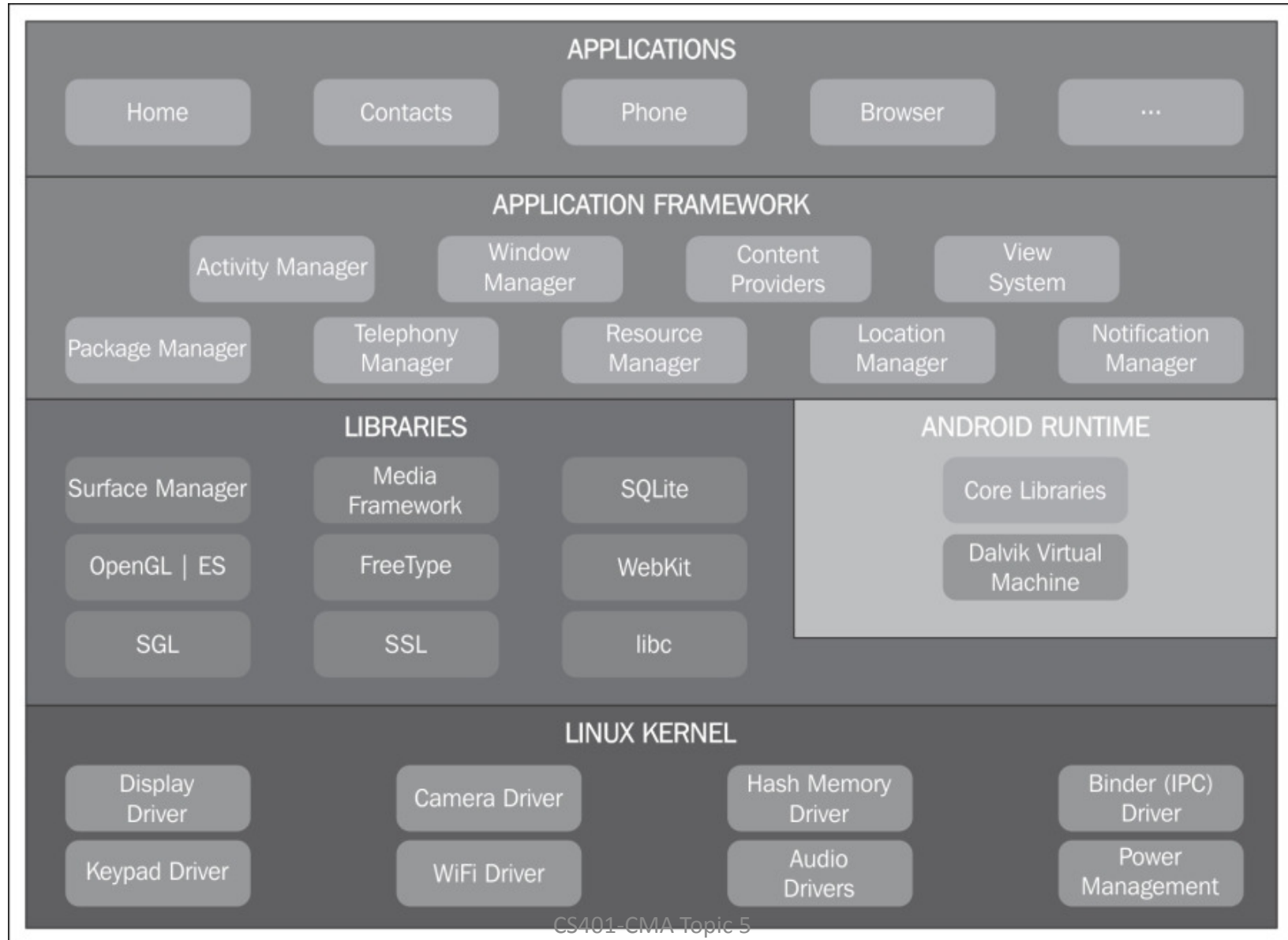
Overview of Android Platform



A SOFTWARE STACK FOR MOBILE DEVICES:
OS KERNEL, SYSTEM LIBRARIES, APPLICATION
FRAMEWORKS & KEY APPS

ANDROID SDK FOR CREATING APPS
LIBRARIES & DEVELOPMENT TOOLS

Architecture



LINUX KERNEL – STANDARD SERVICES

SECURITY

MEMORY & PROCESS MANAGEMENT

FILE & NETWORK I/O

DEVICE DRIVERS

LINUX KERNEL – ANDROID-SPECIFIC

POWER MANAGEMENT

ANDROID SHARED MEMORY

LOW MEMORY KILLER

INTERPROCESS COMMUNICATION

AND MUCH MORE

LIBRARIES

SYSTEM C LIBRARY

BIONIC LIBC

SURFACE MGR.

DISPLAY
MANAGEMENT

MEDIA

FRAMEWORK

AUDIO/ VIDEO

WEBKIT

BROWSER ENGINE

OPENGL

GRAPHICS ENGINES

SQLITE

RELATIONAL
DATABASE ENGINE

ANDROID RUNTIME

TWO MAIN COMPONENTS

CORE JAVA LIBRARIES

DALVIK VIRTUAL MACHINE

CORE JAVA LIBRARIES

BASIC JAVA CLASSES -- JAVA.*, JAVAX.*

APP LIFECYCLE -- ANDROID.*

INTERNET/WEB SERVICES -- ORG.*

UNIT TESTING -- JUNIT.*

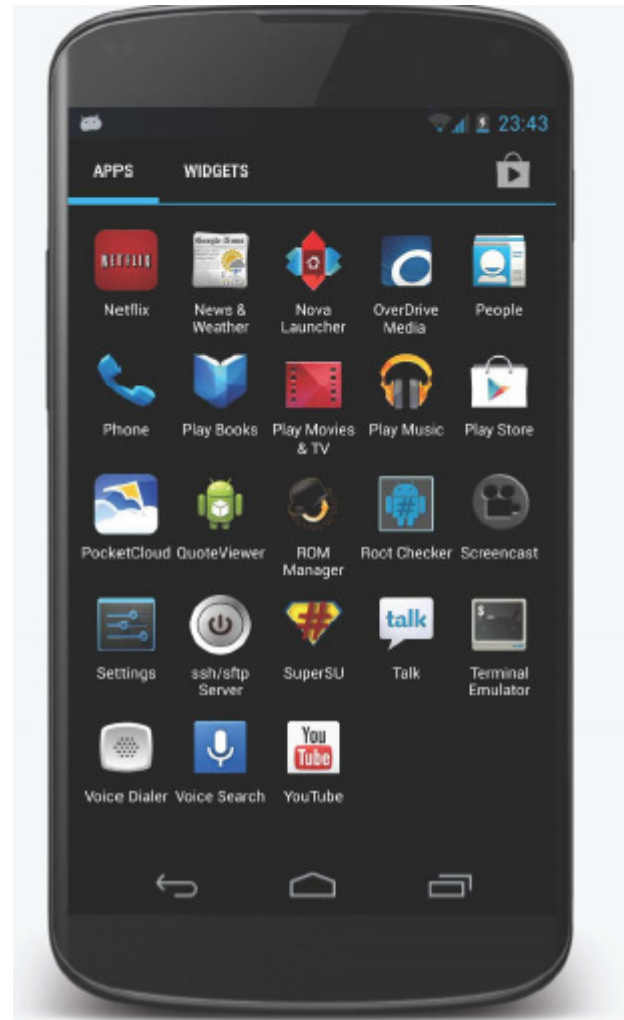
DALVIK VIRTUAL MACHINE

APPS ARE EXECUTED BY THE DALVIK
VIRTUAL MACHINE

Application Framework

PACKAGE MANAGER

KEEPS TRACK OF APP PACKAGES ON
DEVICE



WINDOW MANAGER

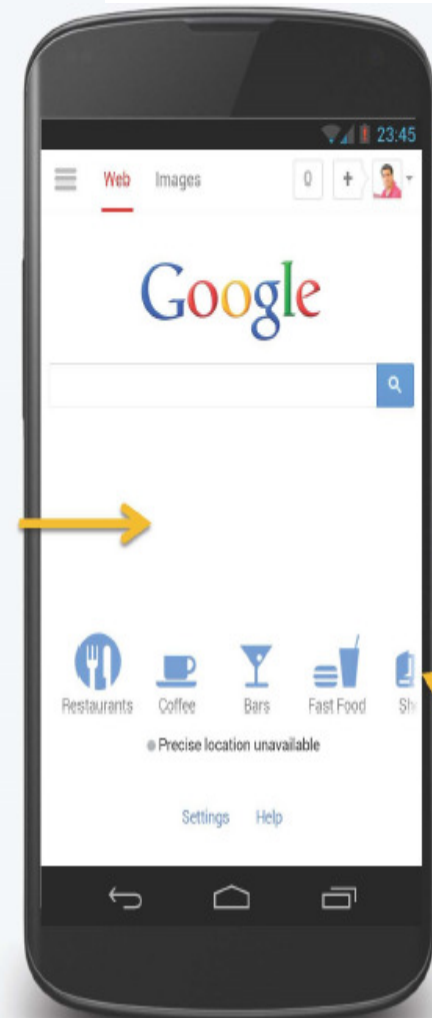
MANAGES THE WINDOWS COMPRISING
AN APP

VIEW SYSTEM

PROVIDES COMMON USER INTERFACE
ELEMENTS

E.G., ICONS, TEXT ENTRY BOXES, BUTTONS AND
MORE

SUBWINDOW



NOTIFICATION
BAR

MAIN
WINDOW

RESOURCE MANAGER

MANAGES NON-COMPILED RESOURCES

E.G., STRINGS, GRAPHICS, & LAYOUT FILES

ACTIVITY MANAGER

MANAGES APP LIFECYCLE AND
NAVIGATION STACK

CONTENTPROVIDER

INTER-APPLICATION DATA SHARING

LOCATIONMANAGER

PROVIDES LOCATION & MOVEMENT
INFORMATION

NOTIFICATIONMANAGER

PLACE NOTIFICATION ICONS IN THE STATUS
BAR WHEN IMPORTANT EVENTS OCCUR

APPLICATIONS

STANDARD APPS INCLUDE:

HOME – MAIN SCREEN

CONTACTS – CONTACTS DATABASE

PHONE – DIAL PHONE NUMBERS

BROWSER – VIEW WEB PAGES

EMAIL READER – COMPOSE & READ EMAIL
MESSAGES

Setting-Up-Your-Android- Development-Environment

<https://www.codeproject.com/Articles/797553/Setting-Up-Your-Android-Development-Environment>

Mobile App Development flow

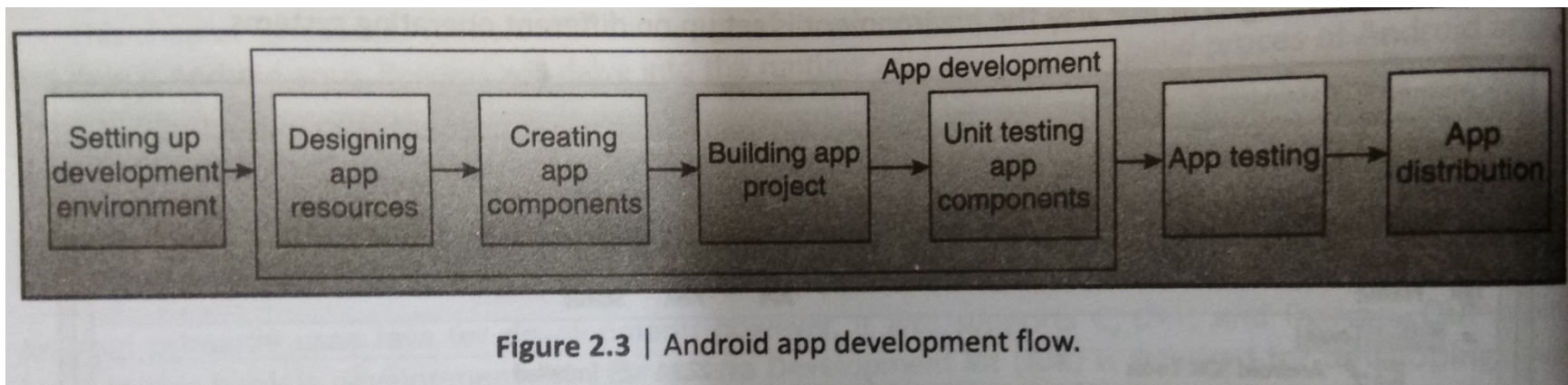


Figure 2.3 | Android app development flow.