INTRODUCTION TO THE ANDROID PLATFORM

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Operating Systems

• For a PC

• For Smart Devices: Additional Support
What is Android?

- Software stack for mobile devices

Key Applications

Phone, Contacts, Browsers ....

Middleware

Application framework, run-time environment for apps

Operating System

Linux Kernel

MOOC on M4D 2013
Open Handset Alliance (OHA)

- Alliance of companies
  - to develop open standards for mobile devices

Why Android?

● ~900M active devices,
  ○ 1M daily activation

● Open
  ○ Open-source
  ○ Users control their experience, installed applications
  ○ Developers do not need any permission for delivering applications
Android Versions

- Android versions are named after desserts or sweets and are alphabetically ordered.
Update Process

• Google releases the Android
  o The code is ready for flagship devices of google

• For other devices, updates are released by their manufacturers (HTC, Samsung, etc.)
  o Need to configure the new version for device capabilities, manufacturer apps
  o Updates for old devices might not be available soon, (not a priority for manufacture)
Android Architecture

Applications
(Contacts, Browser, Phone...)

Application Framework
(Activity Manager, Window Manager, Location Manager...)

Libraries
(SSL, SQLite, Webkit, Android Runtime, Dalvik Virtual Machine...)

Linux Kernel
(WiFi Driver, Camera Driver, Display Driver...)
Android Apps

• Applications for Android platform
  o App Model vs Web
  o 975000+ Apps

• All apps are equal
  o Run in a sandbox given by Android run-time environment

• Where do we get them?
App Stores

• Repository for apps

• Google Play:
  o ~ 1 million apps and ~50 billion downloads
Android Permissions

- 100+ permissions to protect sensitive resources
- User needs to grant these permissions explicitly to the apps
Summary
THANK YOU