INTRODUCTION TO iOS SECURITY CONT
Lecture 17a

COMPSCI 702
Security for Smart-Devices

Nalin Asanka Gamagedara Arachchilage

Slides from Muhammad **Rizwan** Asghar

April 21, 2021

THE UNIVERSITY OF
AUCKLAND
NEW ZEALAND

ABOUT iOS

- iOS 6 asks explicit permission for an app to access contacts, calendars, reminders and photos

    - Apps can give an explanation, which is shown when the request is made

    - A request is made when the first access is required

    - Apps can still run (with reduced functionality) even if the user declines the permission

- An app can use the authorisation status API to check if it can access contacts, calendars, reminders, or the photo library

ANDROID VS iOS

- Developed by Google
- Linux-based OS
- Initial release on September 23, 2008
- Written in C and C++
- App Development: Java, C, C++, …
- Manufactures are Google, LG, Samsung, HTC, Sony and many more
- Google Chrome Browser
- Chat using Google Hangouts
- Voice commands using Google Now
- Google Maps

- Apple Inc.
- OS X, UNIX
- July 29, 2007
- C, C++, Objective-C and Swift
- C, C++, Objective-C, Swift, …
- Apply Inc. only
- Mobile Safari
- iMessage and Facetime (video)
- Siri
- Apple Maps

ANDROID VS iOS (2)

Android	iOS
App distribution through Google Play and other app stores, e.g., Amazon	Apple app store
Open-source	Closed, with open-source components
81.7% market share (Q4 2016)	17.9% market share [Gartner]
Can change almost anything	Limited unless jailbroken
More malware (2014)	Less malware detected [Forbes]
Self-signed apps	Apps signed by Apple
Permissions granted at install time (or runtime from Android 6.0)	Permissions granted at runtime
Limited backup and auto erasure	Backup and auto eraser

[Gartner] http://www.gartner.com/newsroom/id/3609817

[Forbes] https://www.forbes.com/sites/gordonkelly/2014/03/24/report-97-of-mobile-malware-is-on-android-this-is-the-easy-way-you-stay-safe/

SUMMARY

- Earlier iOS versions provided very **little** in terms of **security**

- Now there are many Mandatory Access Control (**MAC**) policies enforced

- Some protections only take effect when the user sets a **passcode**

RESOURCES

- **White Paper on iOS Security**
  https://www.apple.com/business/docs/iOS_Security_Guide.pdf
  [MUST READ]

- **iOS Hacker's Handbook**
  Charlie Miller, Dionysus Blazarkis, Dino Dai Zovi, Stefan Esser,Vincenzo Iozzo, Ralf-Philipp Weinmann
  John Wiley & Sons, Inc., 2012

- **Apple iOS**
  https://www.apple.com/ios/

RESOURCES (2)
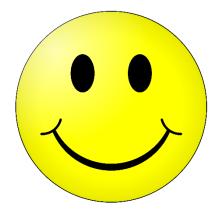
- **When Malware Goes Mobile**
  http://www.sophos.com/en-us/security-news-trends/security-trends/malware-goes-mobile/why-ios-is-safer-than-android.aspx

- **Android vs. Apple iOS Security Showdown**
  http://pittsburgh.issa.org/Archives/Android-vs-iOS-MayUpdate.pdf

- **Android vs. iOS**
  http://www.diffen.com/difference/Android_vs_iOS

ACKNOWLEDGEMENT

- Some slides are based on the lecture delivered by Robert Sheehan, thanks to him!

Questions?

Thanks for your attention!