Go On Android 試作

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為何會對 Gomobile 有興趣？

Q: Go 語言到底有沒有前途?

沒有支援 Mobile 的語言前途是有限的(June, 2015)

gomobile was released with go1.5 (Aug, 2015)

First App written by Go - **Ivy big number calculator**

所以 … Golang 是有前途的！

- Gomobile 簡介
- 試做
  - Android Native App
  - Library for Android

Gomobile

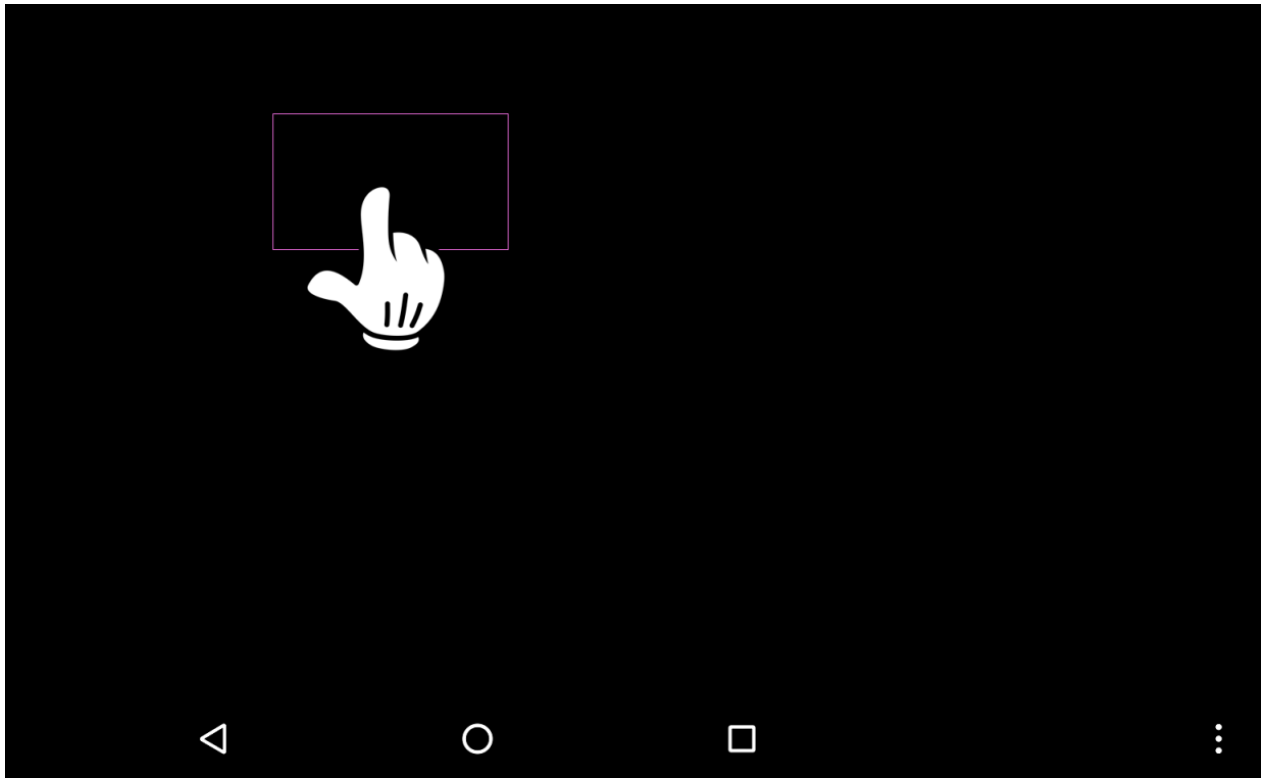
- 提供對 Android 與 IOS Platform 的開發工具
- 可以讓使用者開發 Native(原生的) App
- 開發 Library

Gomobile 的安装

- go get golang.org/x/mobile/cmd/gomobile
- gomobile init

試做 Native App

- 目的: 使用 Go 試做原生 App ，了解架構與流程

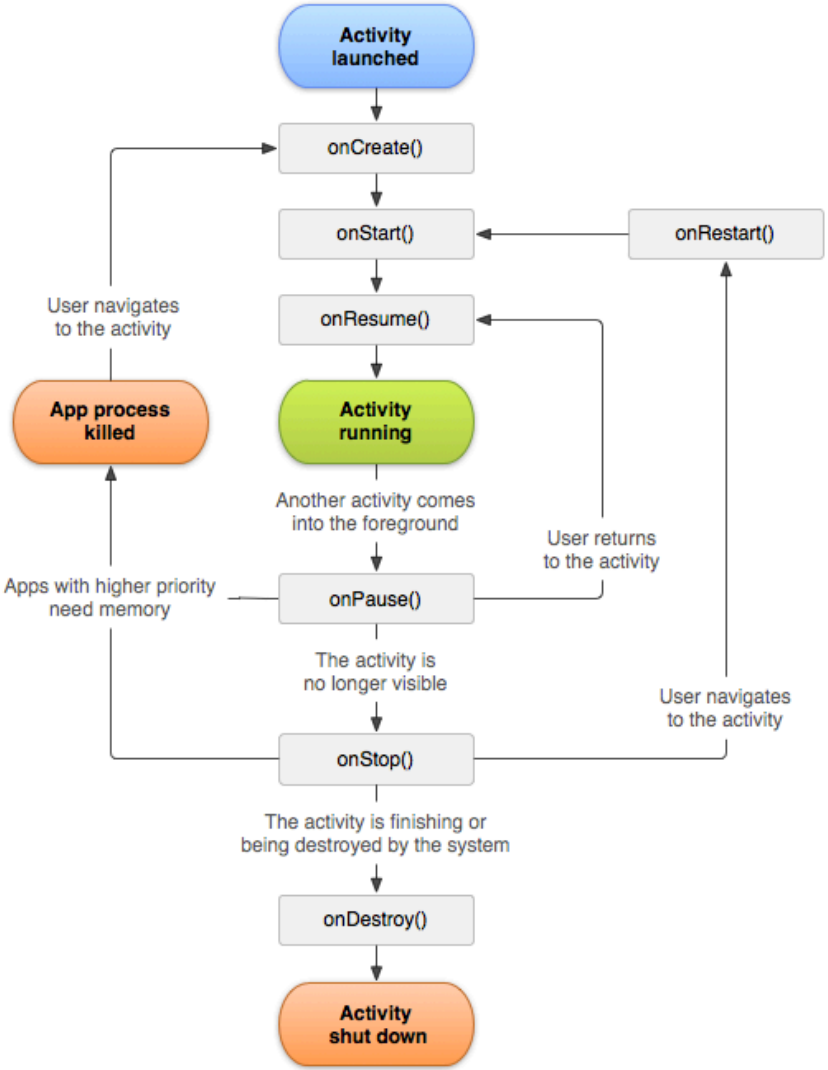


Main - Event Loop

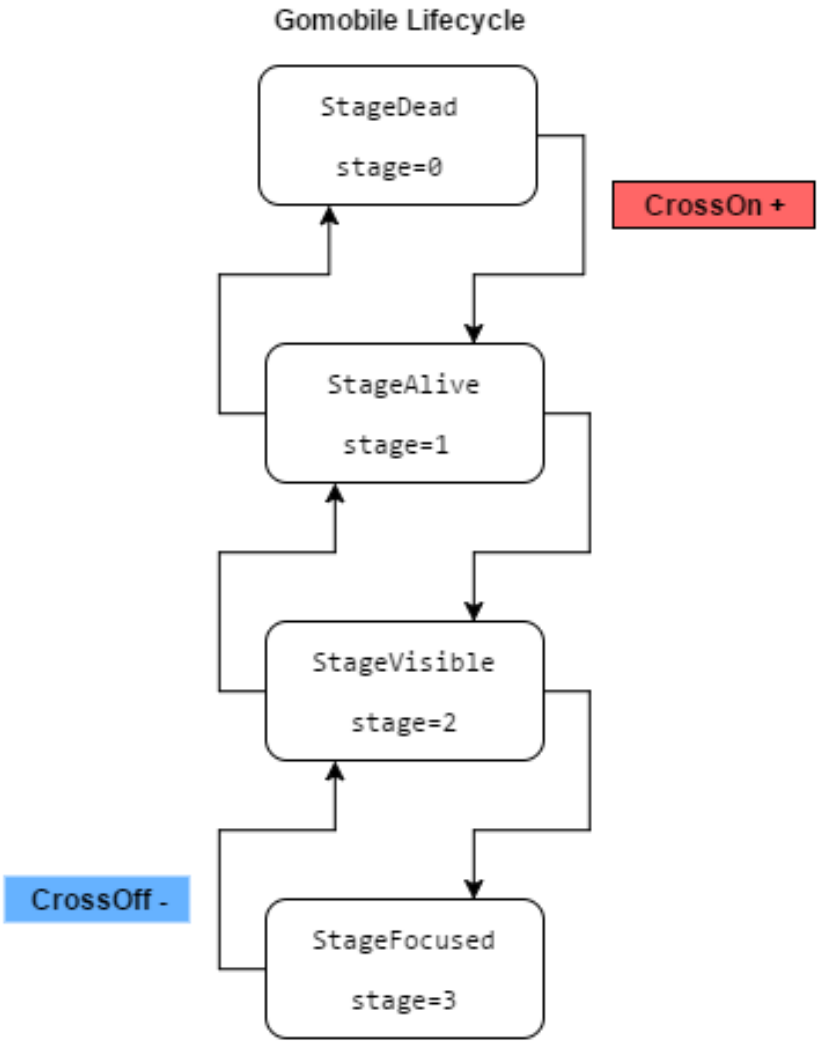
```
func main() {
	app.Main(func(a app.App) {
		visible, sz := false, size.Event{}
		for e := range a.Events() {
			switch e := app.Filter(e).(type) {
			case lifecycle.Event:
				switch e.Crosses(lifecycle.StageVisible) {
				case lifecycle.CrossOn:
					log.Println("lifecycle.CrossOn")
					visible = true
					onStart()
				case lifecycle.CrossOff:
					log.Println("lifecycle.CrossOff")
					visible = false
					onStop()
				}
			case size.Event:
				sz = e
				touchX = float32(sz.WidthPx / 2)
				touchY = float32(sz.HeightPx / 2)
				log.Println("size.Event touchX=", touchX, " touchY", touchY)
			case paint.Event:
				//onPaint(sz)
				log.Println("paint.Event")
				a.Publish()
				if visible {
					a.Send(paint.Event{})
				}
			case touch.Event:
				touchX = e.X
				touchY = e.Y
				log.Println("touch x", touchX, " touch y", touchY)
			}
		}
```

Event Types : key, lifecycle, mouse, paint, size, touch

Android Lifecycle



Gomobile Lifecycle

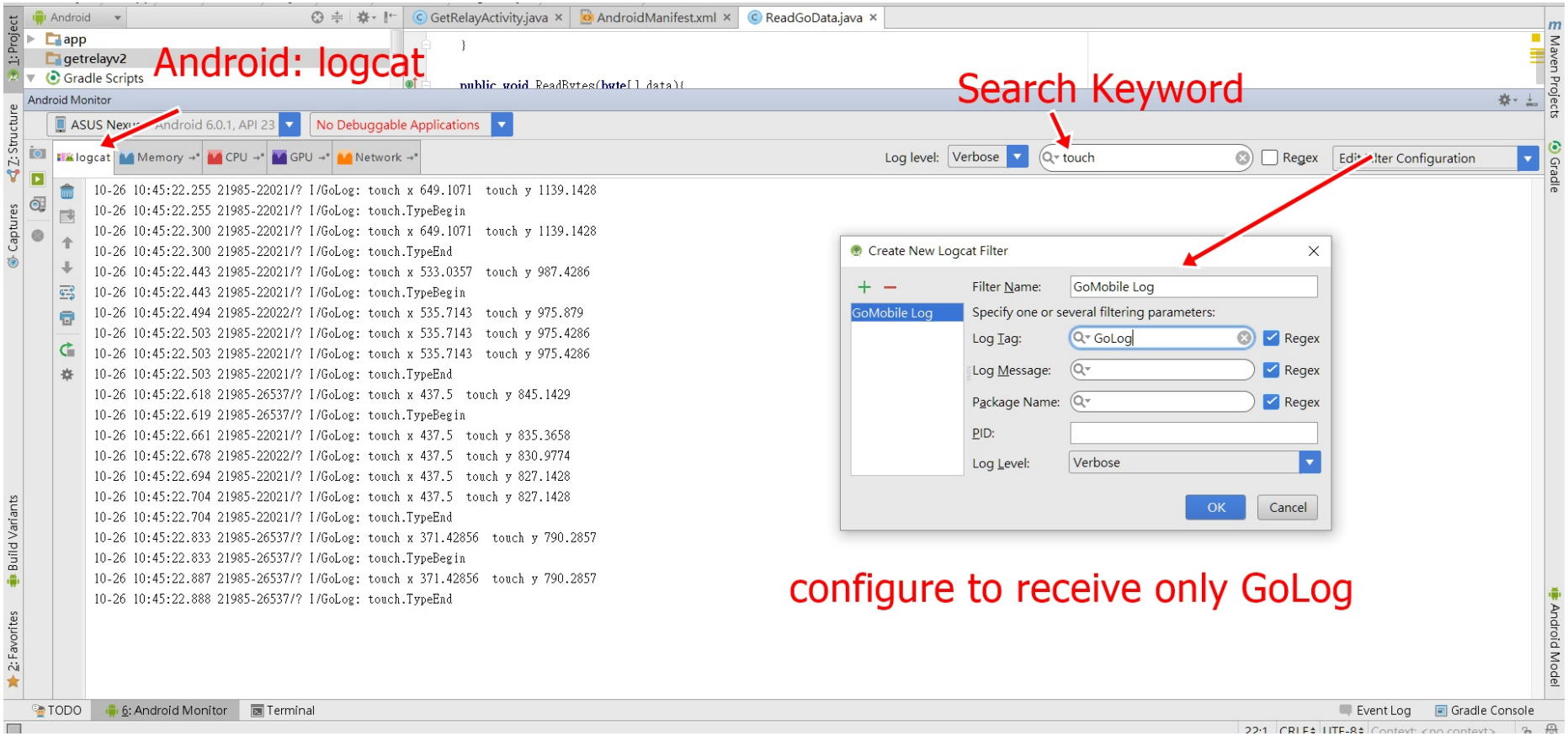


- UI
  - OpenGL ES2.0, ES3.0
  - Packages:
    - gl, glutil, sprite
- Sensor
  - Package: sensor
    - Accelerometer (加速度計)
    - Gyroscope (陀螺儀)
    - Magnetometer (磁力儀)

Build and Install Native APP

- Command
  - gomobile **build** -target=[android/ios][package]
  - gomobile **install** [package]
- Build 輸出: package.apk
- Example
  - gomobile build -target=android golang.org/x/mobile/example/basic
  - gomobile install golang.org/x/mobile/example/basic

AndroidStudio Logcat



Gomobile Library: GetRelayLib

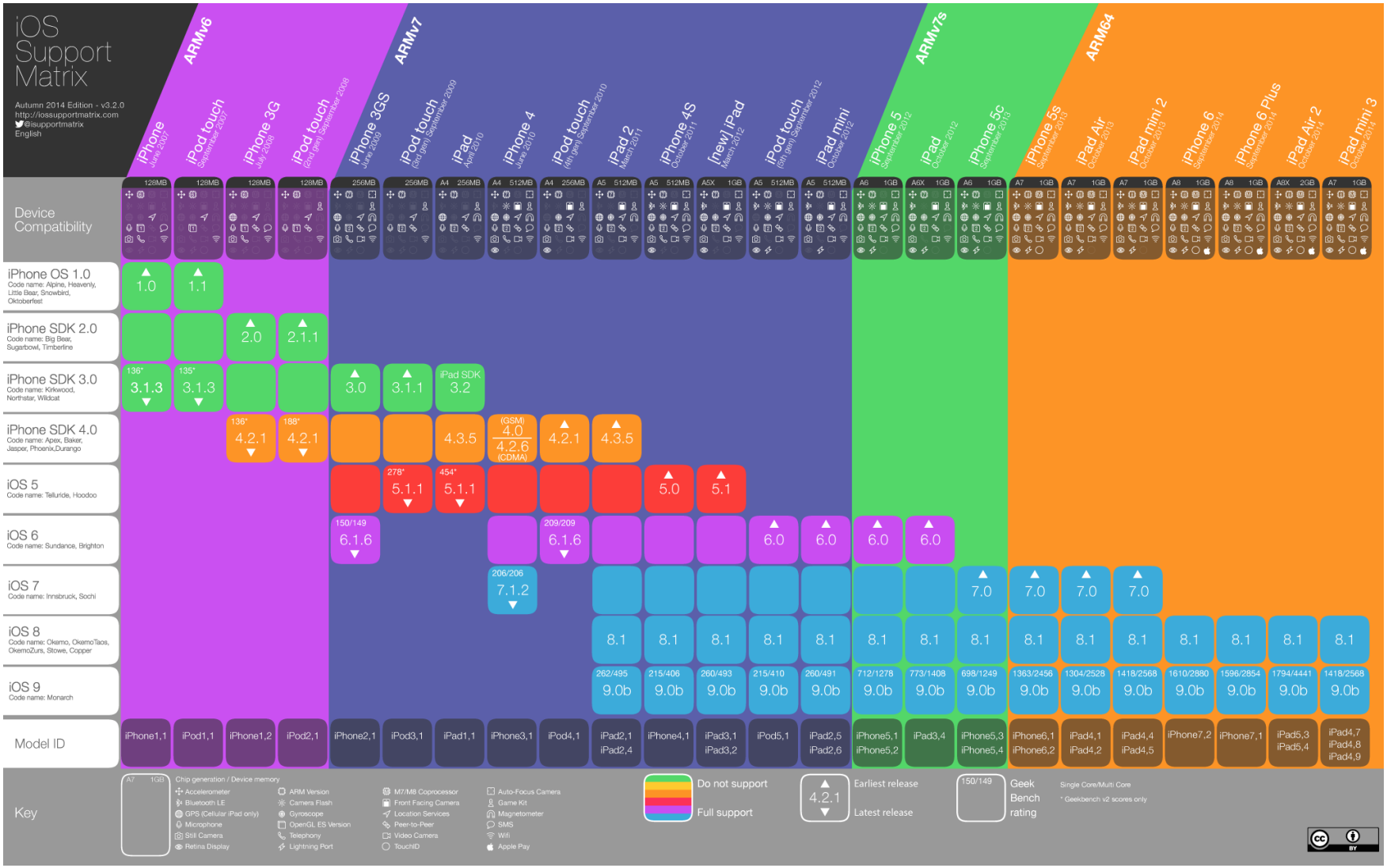
- 目的: 讓 android與 ios App 不用處理與 Relay-Server 連線的問題
- 優點:
  - 同時給 android 跟 ios 使用
  - Go 做併發與網路連線相對容易
  - Relay-Server 由Go開發，對Go開發人員連線部分相對熟稔

Gomobile Binding

- Command
  - gomobile bind -target=[android/ios][package]
- bind 輸出: package.aar
- Example
  - gomobile bind -target=android golang.org/x/mobile/example/bind/hello
- Build go library for Android using gomobile step by step

Issues

- iPhone 5s 以前不 support
  - Supported instruction set
    - arm, arm64, 386, amd64
- Developing memo
  - Return value
  - Type Limit


iOS Support Matrix
Autumn 2014 Edition - v3.2.0
http://iossupportmatrix.com
@iosupportmatrix
English
ARMv6
ARMv7
ARMv7s
ARM64
iPhone June 2007
iPod touch September 2007
iPhone 3G July 2008
iPod touch (2nd gen) September 2008
iPhone 3GS June 2009
iPod touch (3rd gen) September 2009
iPad April 2010
iPhone 4 June 2010
iPod touch (4th gen) September 2010
iPad 2 March 2011
iPhone 4S October 2011
[new] iPad March 2012
iPod touch (5th gen) September 2012
iPad mini October 2012
iPhone 5 September 2012
iPad October 2012
iPhone 5c September 2013
iPhone 5s September 2013
iPad Air October 2013
iPad mini 2 October 2013
iPhone 6 September 2014
iPhone 6 Plus September 2014
iPad Air 2 October 2014
iPad mini 3 October 2014
Device Compatibility
iPhone OS 1.0
Code name: Alpine, Heavenly, Little Bear, Snowbird, Oktoberfest
iPhone SDK 2.0
Code name: Big Bear, Sugarbowl, Timberline
iPhone SDK 3.0
Code name: Kirkwood, Northstar, Wildcat
iPhone SDK 4.0
Code name: Apex, Baker, Jasper, Phoenix,Durango
iOS 5
Code name: Telluride, Hoodoo
iOS 6
Code name: Sundance, Brighton
iOS 7
Code name: Innsbruck, Sochi
iOS 8
Code name: Okemo, OkemoTaos, OkemoZurs, Stowe, Copper
iOS 9
Code name: Monarch
Model ID
iPhone1,1
iPod1,1
iPhone1,2
iPod2,1
iPhone2,1
iPod3,1
iPad1,1
iPhone3,1
iPod4,1
iPad2,1
iPad2,4
iPhone4,1
iPad3,1
iPad3,2
iPod5,1
iPad2,5
iPad2,6
iPhone5,1
iPhone5,2
iPad3,4
iPhone5,3
iPhone5,4
iPhone6,1
iPhone6,2
iPad4,1
iPad4,2
iPad4,4
iPad4,5
iPhone7,2
iPhone7,1
iPad5,3
iPad5,4
iPad4,7
iPad4,8
iPad4,9
Key
Chip generation / Device memory
Accelerometer
Bluetooth LE
GPS (Cellular iPad only)
Microphone
Still Camera
Retina Display
ARM Version
Camera Flash
Gyroscope
OpenGL ES Version
Telephony
Lightning Port
M7/M8 Coprocessor
Front Facing Camera
Location Services
Peer-to-Peer
Video Camera
TouchID
Auto-Focus Camera
Game Kit
Magnetometer
SMS
Wifi
Apple Pay
Do not support
Full support
Earliest release
Latest release
Geek Bench rating
Single Core/Multi Core
* Geekbench v2 scores only

結論

- 原生App 開發支援有限， 只合適開發"小型" App
- 使用Android SDK 開發環境 + gomobile – library 可以結合兩者優點

The End

Thank you!