

Social Media Apps Programming

jQuery Mobile/Phonegap

1071SMAP08 TLMXM1A (8550) (M2143) (Fall 2018) (MIS MBA) (2 Credits, Elective) [Full English Course] Thu 8,9 (10:10-12:00) B206



Min-Yuh Day, Ph.D. Assistant Professor

<u>Department of Information Management</u>
<u>Tamkang University</u>

http://mail.tku.edu.tw/myday



Course Schedule (1/2)



Week Date Subject/Topics

- 1 2018/09/13 Course Orientation and Introduction to Social Media and Mobile Apps Programming
- 2 2018/09/20 Introduction to Android / iOS Apps Programming
- 3 2018/09/27 Developing Android Native Apps with Java (Android Studio)
- 4 2018/10/04 Developing iPhone / iPad Native Apps with Swift (XCode)
- 5 2018/10/11 Mobile Apps using HTML5/CSS3/JavaScript
- 6 2018/10/18 jQuery Mobile
- 7 2018/10/25 Create Hybrid Apps with Phonegap
- 8 2018/11/01 jQuery Mobile/Phonegap
- 9 2018/11/08 jQuery Mobile/Phonegap

Tamkang University

Course Schedule (2/2)

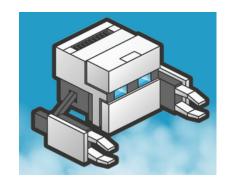
Week Date Subject/Topics		
10	2018/11/15	Midterm Exam Week / Project Presentation
11	2018/11/22	Case Study on Social Media Apps Programming and Marketing in Google Play and App Store
12	2018/11/29	Google Cloud Platform
13	2018/12/06	Google App Engine
14	2018/12/13	Google Map API
15	2018/12/20	Facebook API (Facebook JavaScript SDK) (Integrate Facebook with iOS/Android Apps)
16	2018/12/27	Twitter API
17	2019/01/03	Final Project Presentation
18	2019/01/10	Final Exam Week / Final Project Presentation

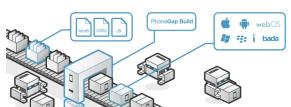
Outline

- jQuery Mobile/PhoneGap
 - HTML5, CSS3, JavaScript
 - jQuery Mobile
 - PhoneGap
 - PhoneGap Build
 - index.html, css, js, png
 - config.xml
- Demo
 - Create Hybrid Apps with PhoneGap
 - Testing iOS and Android Devices









Android /iOS Apps Programming

Native Apps

Hybrid Apps

Mobile Web Apps



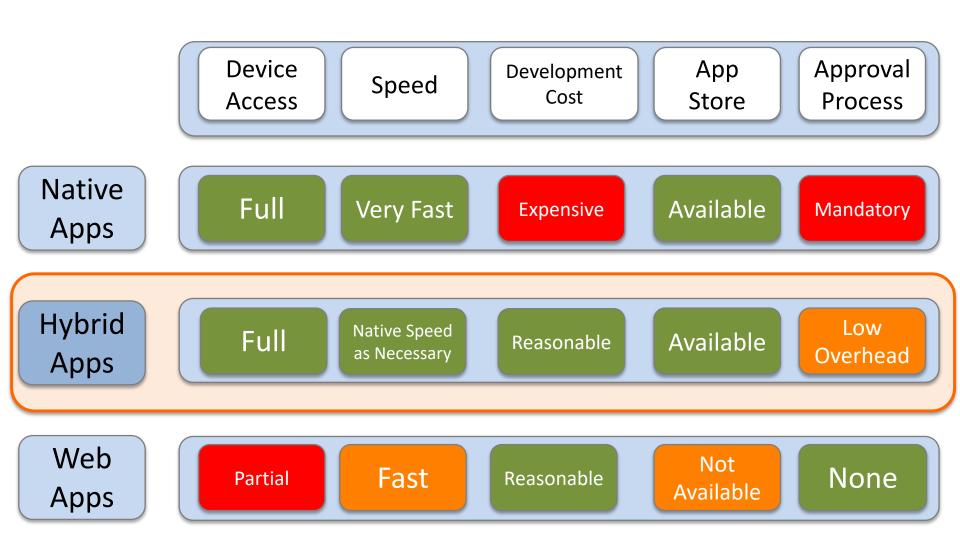




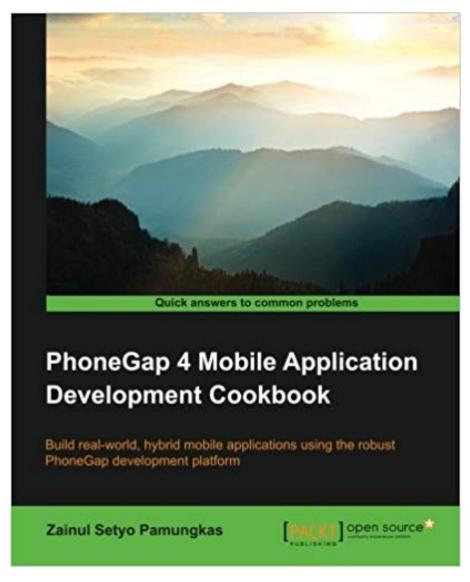




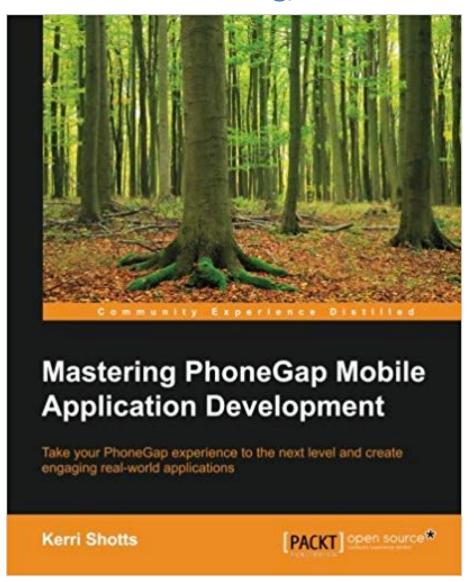
App Development Comparison



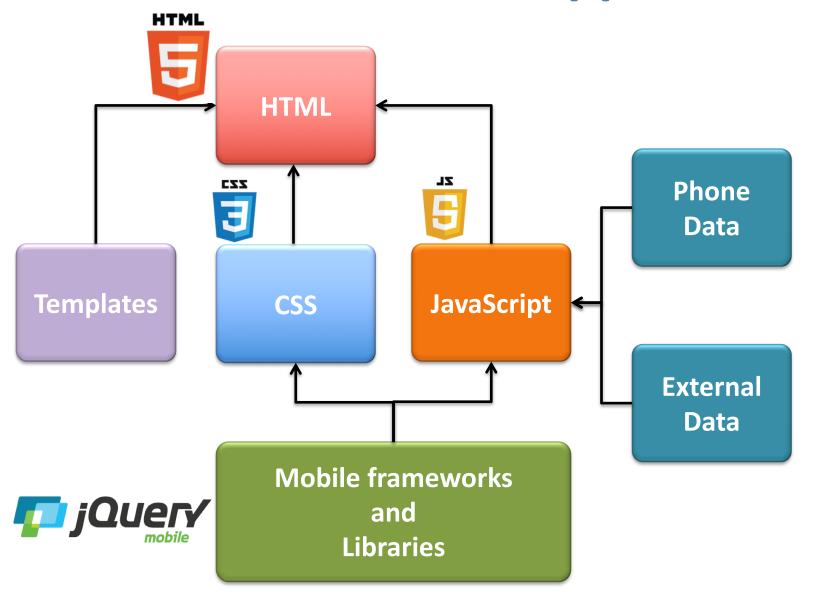
Zainul Setyo Pamungkas, PhoneGap 4 Mobile Application Development Cookbook, Packt Publishing, 2015



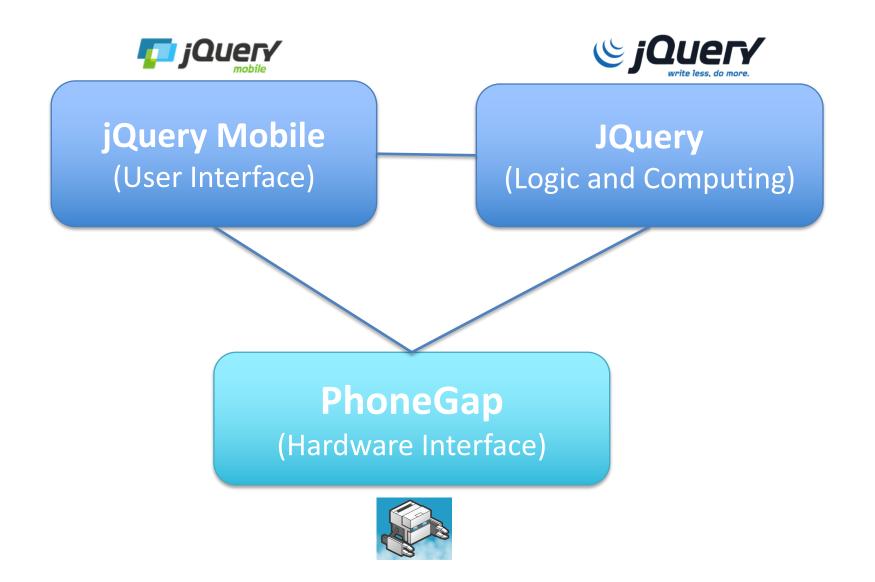
Kerri Shotts, Mastering PhoneGap Mobile Application Development, Packt Publishing, 2016



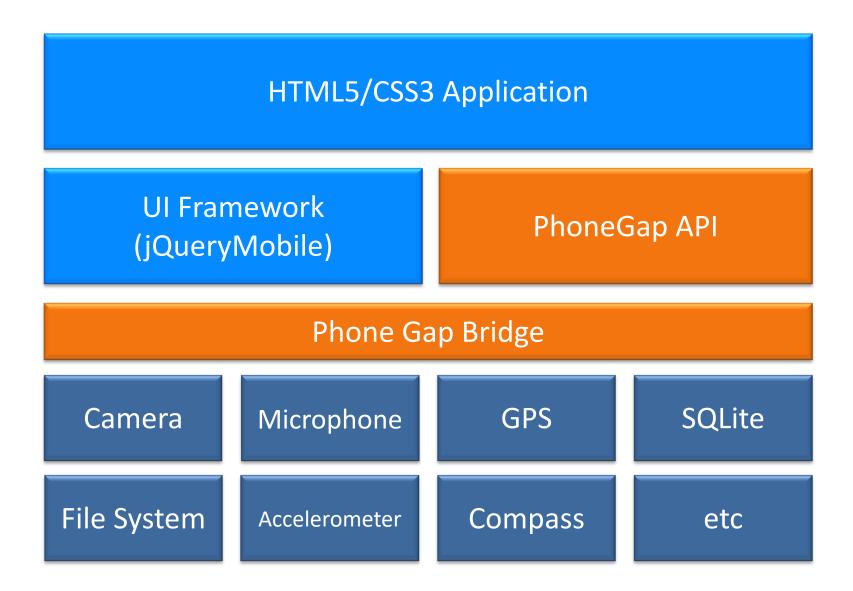
Mobile Web App



PhoneGap, jQuery Mobile, jQuery

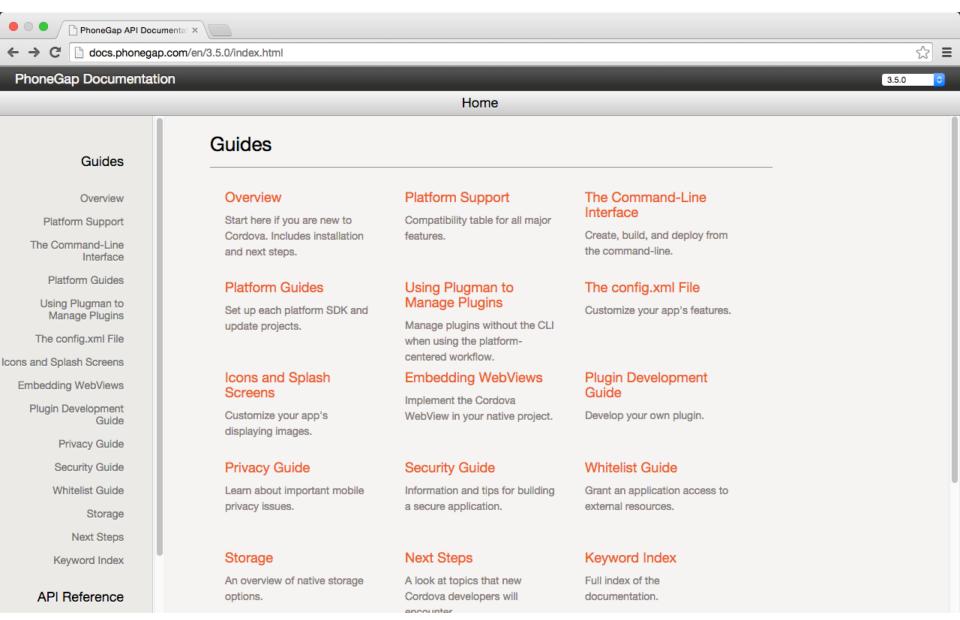


PhoneGap App Architecture

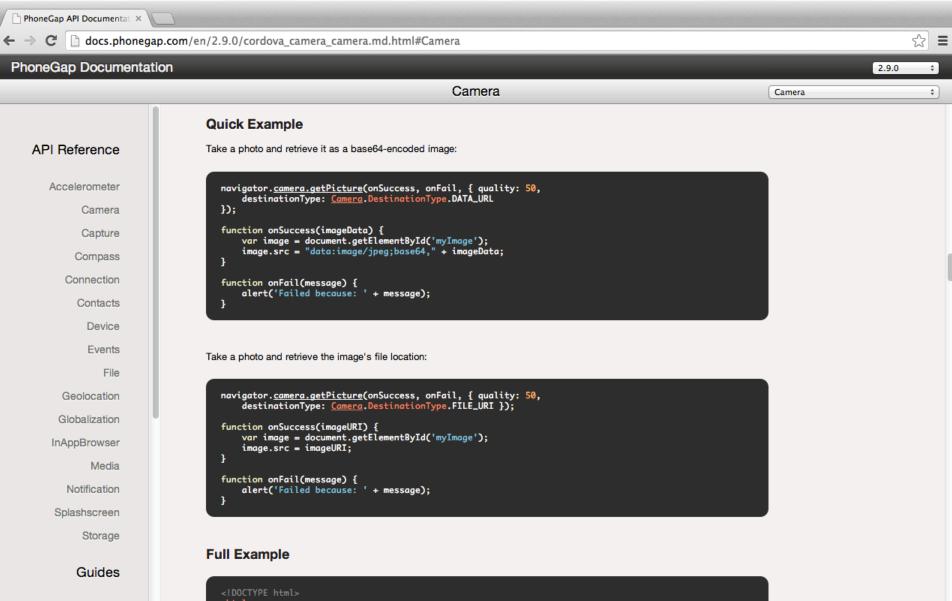




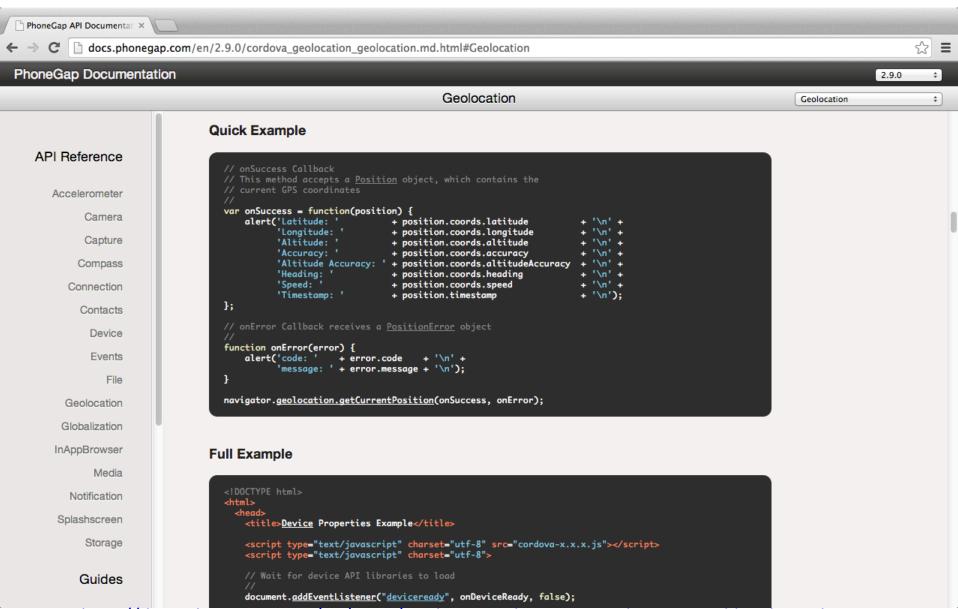
PhoneGap API Documentation



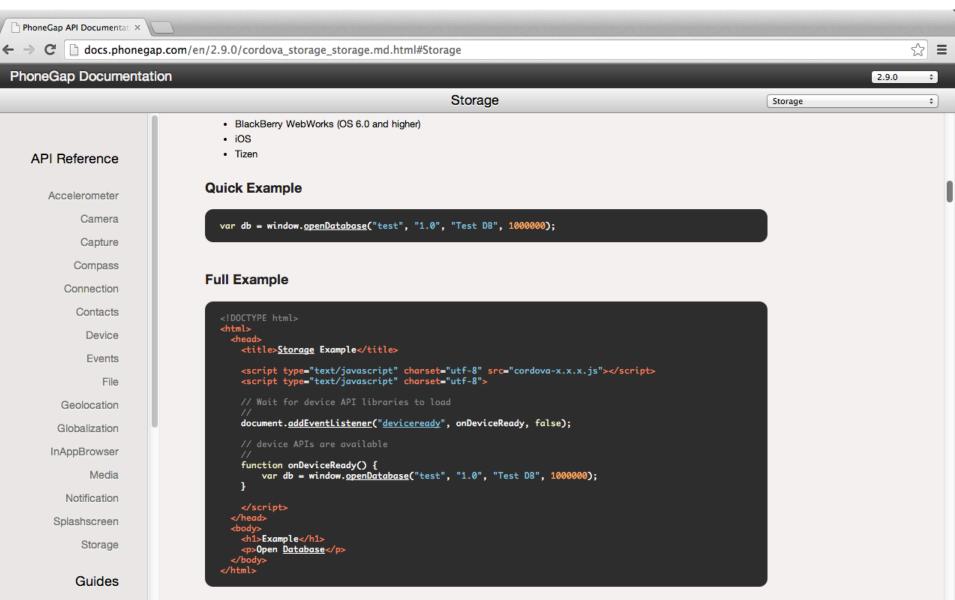
PhoneGap API: Camera



PhoneGap API: Geolocation

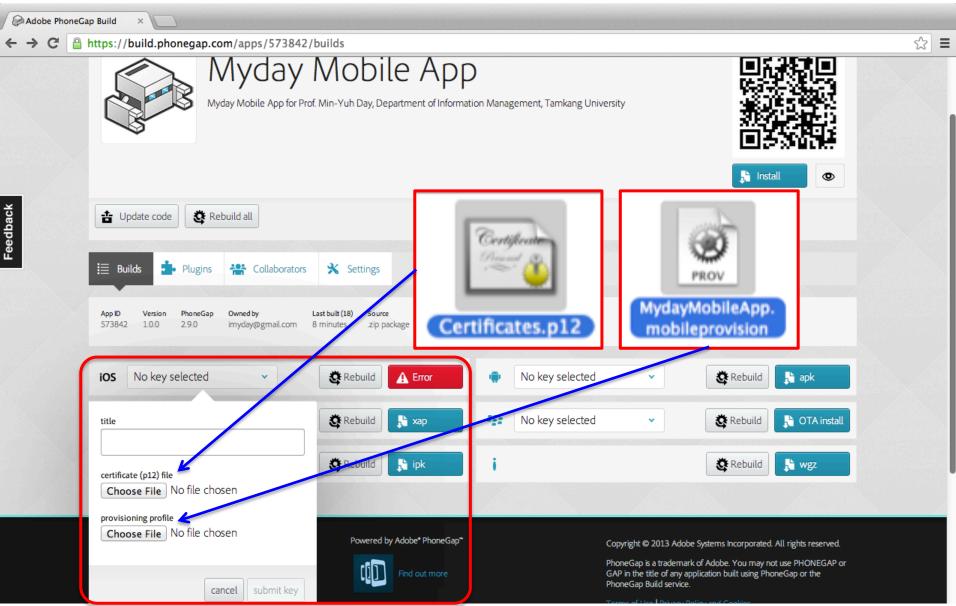


PhoneGap API: Storage

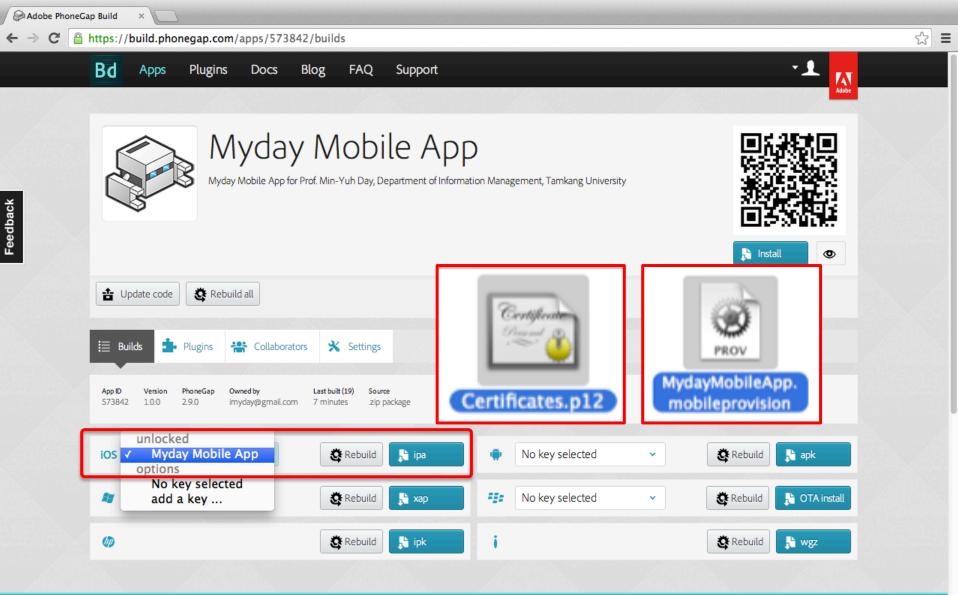


```
<!DOCTYPE html>
<html>
  <head>
   <title>Storage Example</title>
   <script type="text/javascript" charset="utf-8" src="cordova-x.x.x.js"></script>
   <script type="text/javascript" charset="utf-8">
   // Wait for device API libraries to load
   document.addEventListener("deviceready", onDeviceReady, false);
   // device APIs are available
   function onDeviceReady() {
       var db = window.openDatabase("Database", "1.0", "Cordova Demo", 200000);
       db.transaction(populateDB, errorCB, successCB);
   // Populate the database
   function populateDB(tx) {
       tx.executeSql('DROP TABLE IF EXISTS DEMO');
       tx.executeSql('CREATE TABLE IF NOT EXISTS DEMO (id unique, data)');
       tx.executeSql('INSERT INTO DEMO (id, data) VALUES (1, "First row")');
       tx.executeSql('INSERT INTO DEMO (id, data) VALUES (2, "Second row")');
   // Transaction error callback
   function errorCB(tx, err) {
        alert("Error processing SQL: "+err);
   // Transaction success callback
   function successCB() {
       alert("success!");
   </script>
  </head>
  <body>
   <h1>Example</h1>
   Database
 </body>
</html>
```

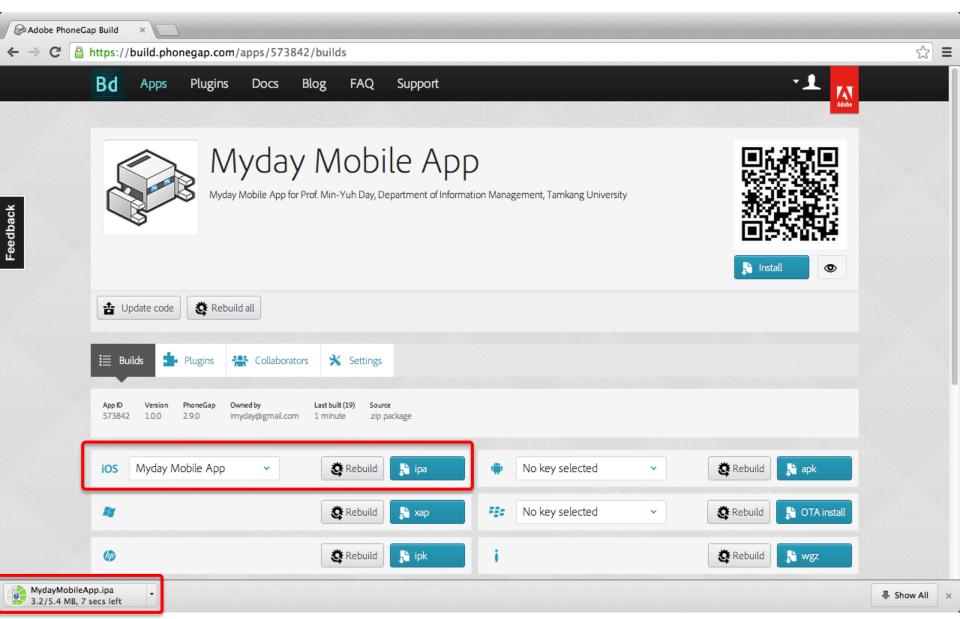
iOS Certificate (p12) file Provisioning profile



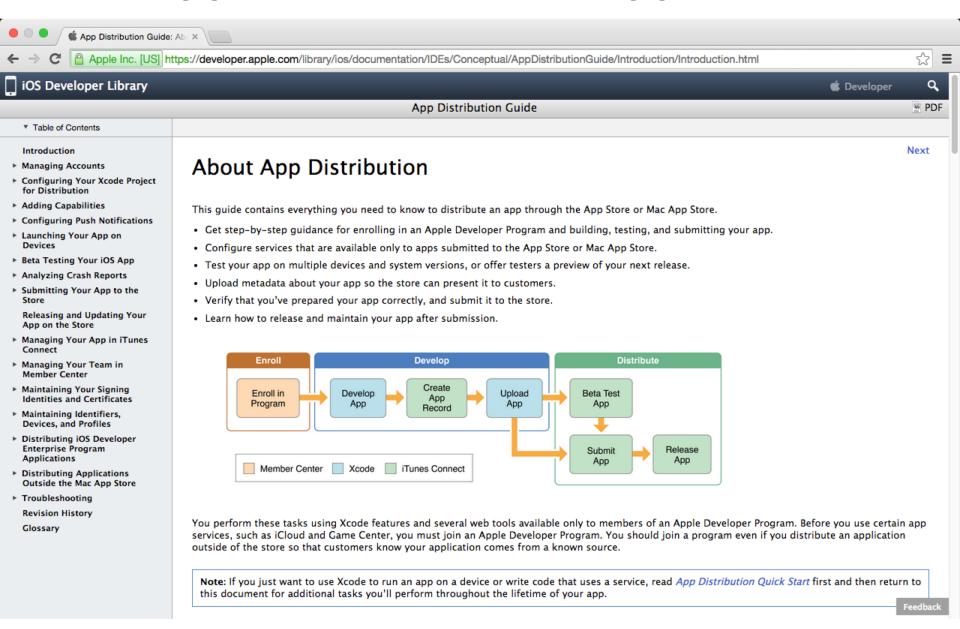
iOS Certificate (p12) file Provisioning profile



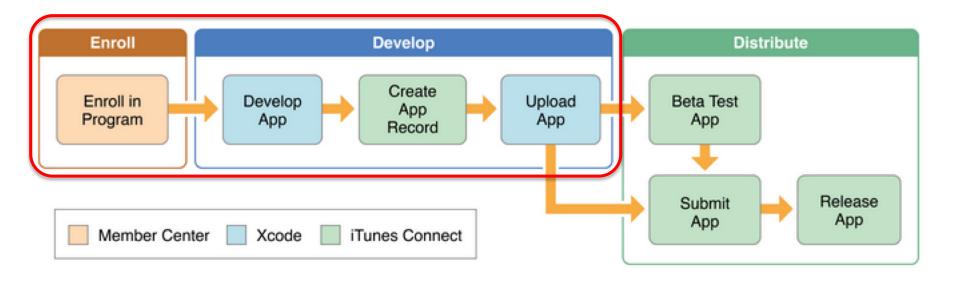
MydayMobileApp.ipa



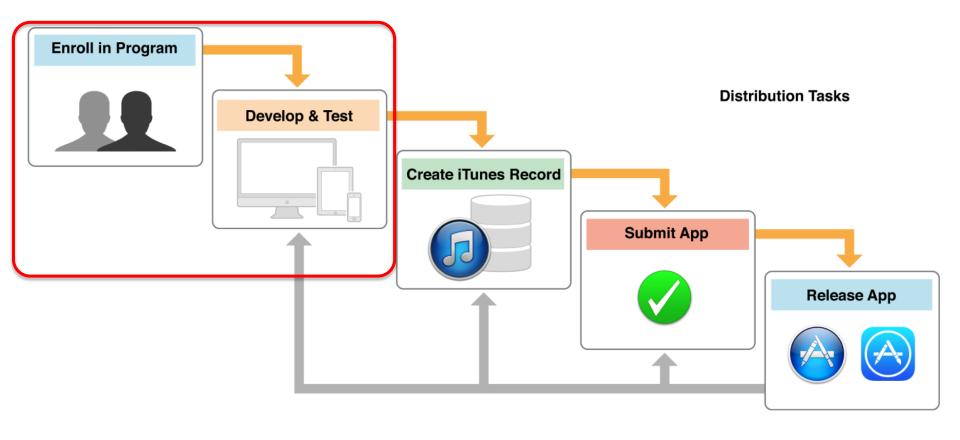
App Distribution on App Store



Test on iOS Devices (iPhone/iPAD)



Test on iOS Devices (iPhone/iPAD)



Testing iOS App



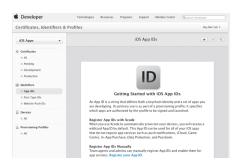
- Provisioning Profile
- Developer Portal
- Code Signing
- Bundle ID
- Keychain Access
- App ID
- Certificates
- Xcode Organizer

Basics of iOS Device Testing

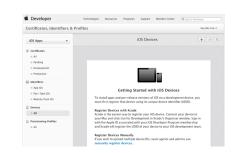
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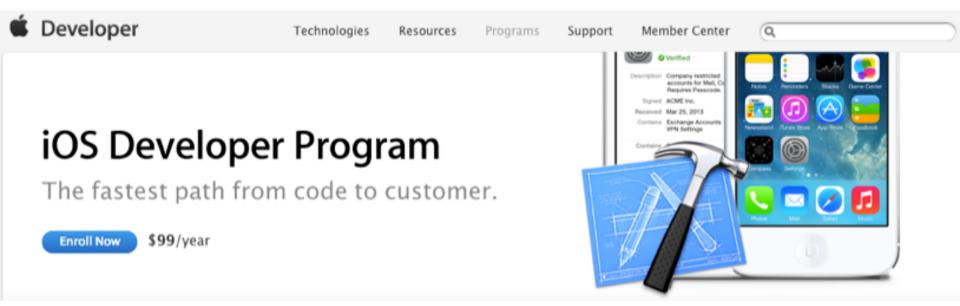
Your App has PERMISSION



Your Device has PERMISSION



You have PERMISSION









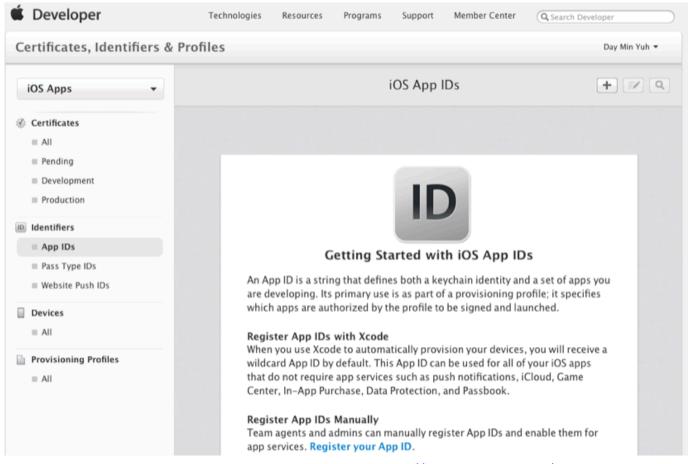
Keychain Access

Certificates



Your App has PERMISSION

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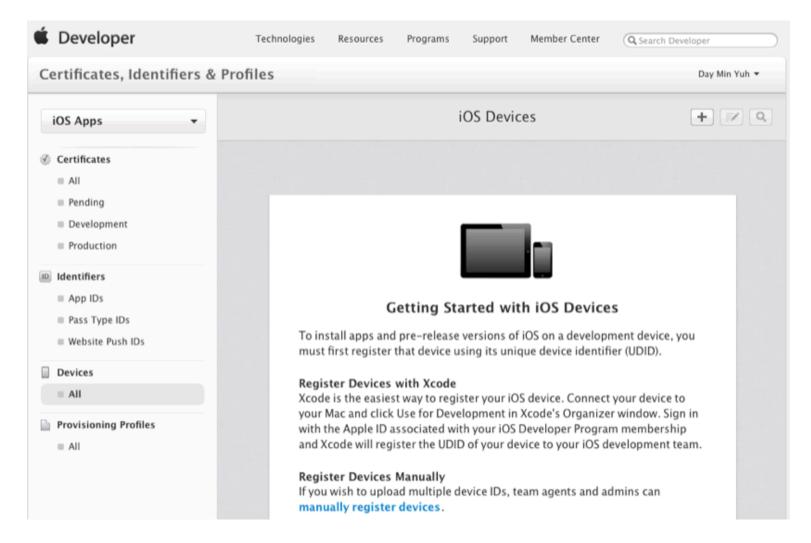
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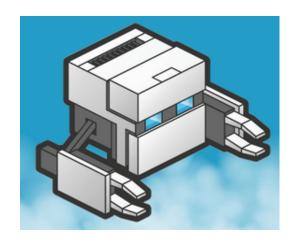


Demo

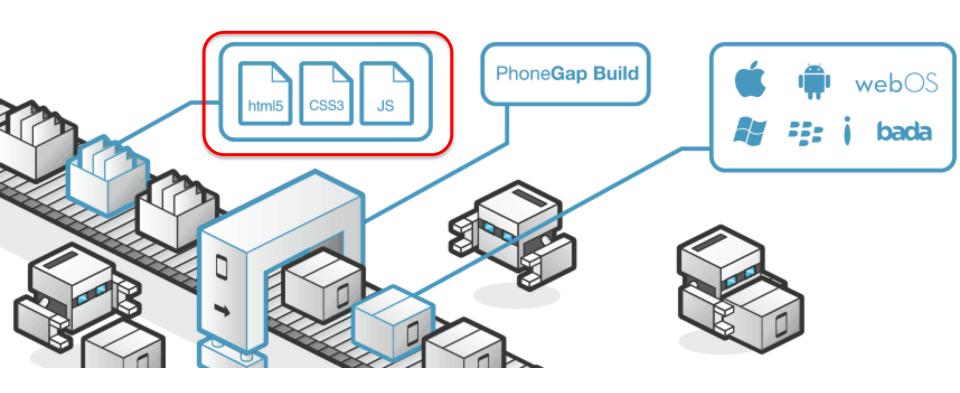
Create Hybrid Apps with PhoneGap Testing iOS and Android Devices

https://build.phonegap.com/





PhoneGap Build

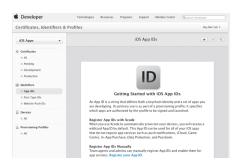


Basics of iOS Device Testing

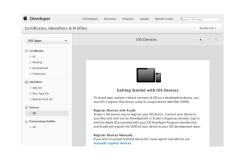
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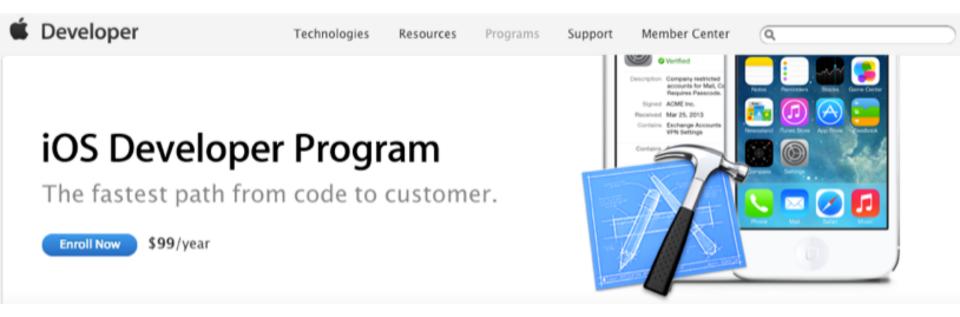
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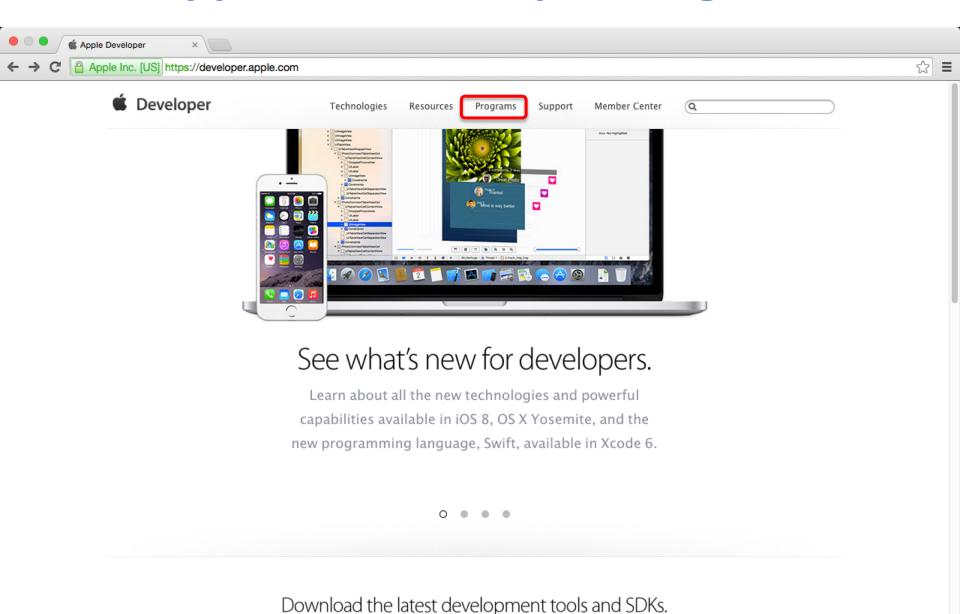
Your Device has PERMISSION



You have PERMISSION

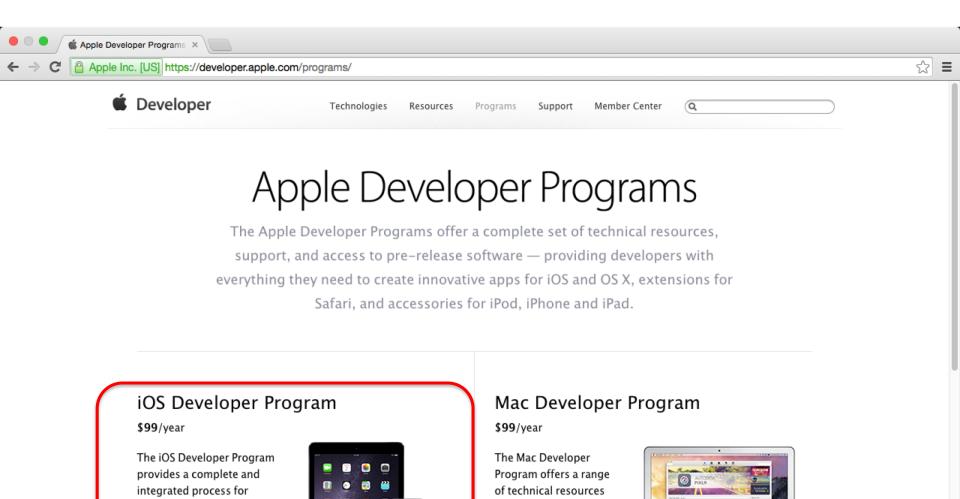


Apple iOS Developer Program



https://developer.apple.com/

Apple iOS Developer Program



https://developer.apple.com/programs/

and support for

Learn more >

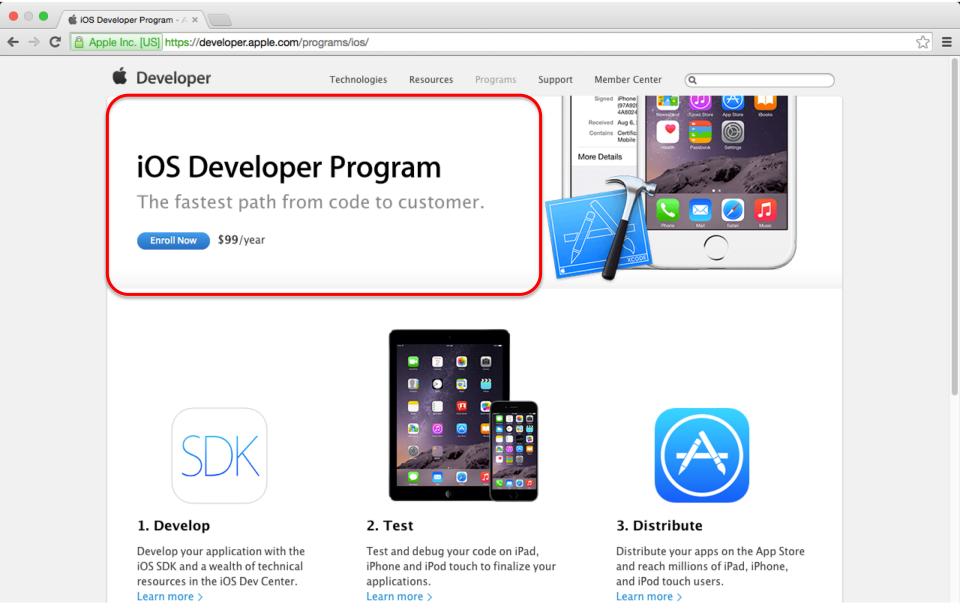
distributing Mac apps on the Mac App Store.

developing and distributing

iOS apps on the App Store.

Learn more >

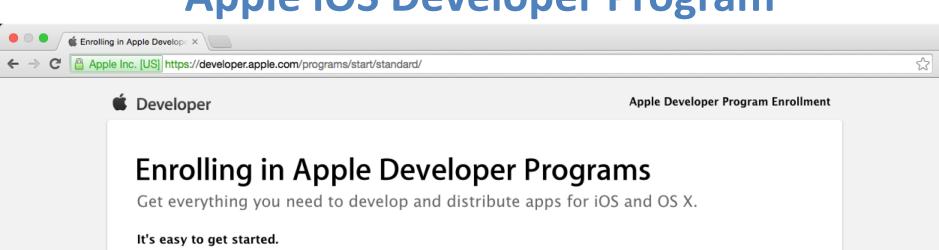
Apple iOS Developer Program



iOS Developer Program

The fastest path from code to customer.

Enroll Now \$99/year



✓ Choose an enrollment type.

Individual: choose this option if you are an individual or sole proprietor/single person business.

Company/Organization: choose this option if you are a company, non-profit organization, joint venture, partnership, or government organization.

✓ Submit your information.

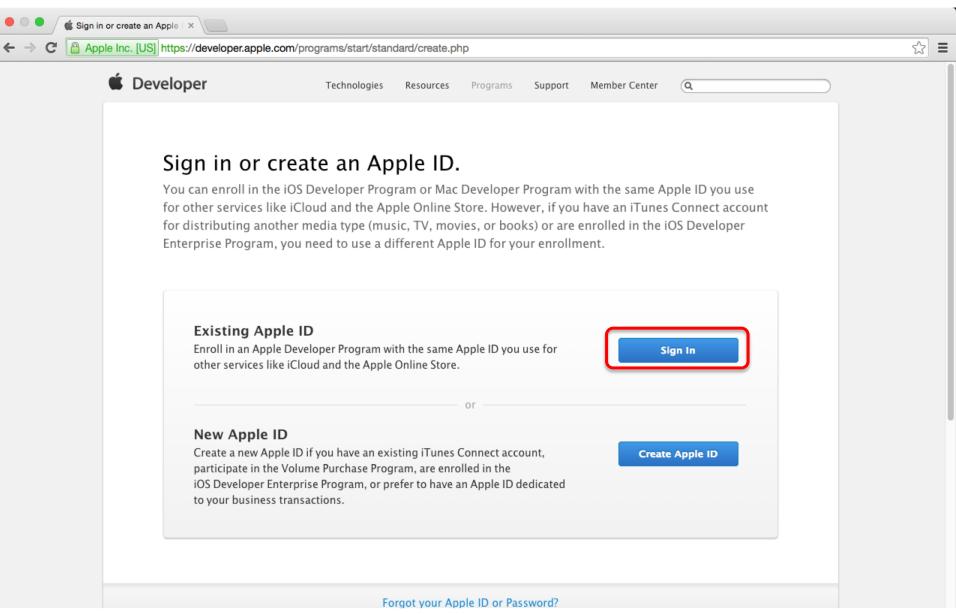
Provide basic personal information, including your legal name and address. If you're enrolling as a company/organization, we'll need a few more things, like your legal entity name and D-U-N-S® Number, as part of our verification process.

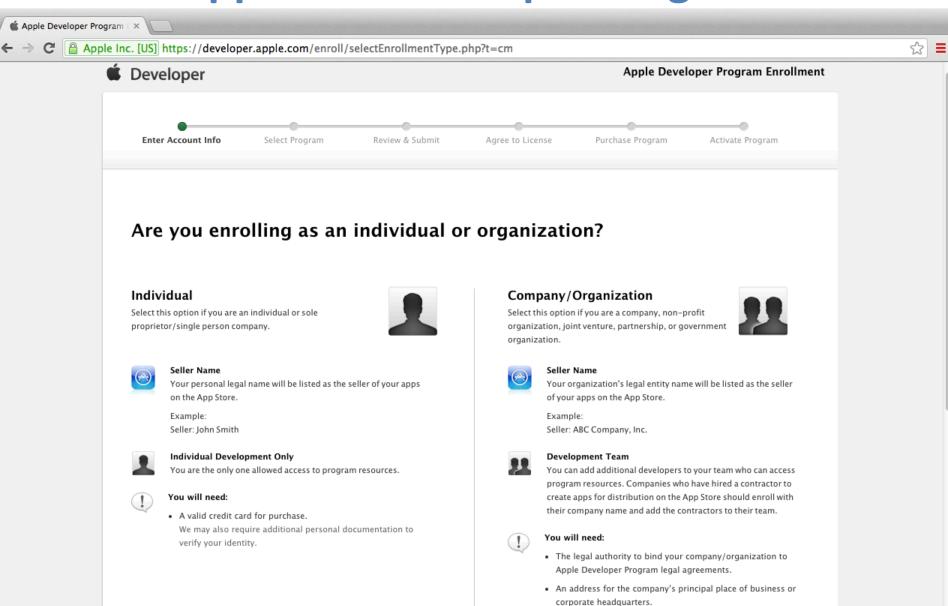
✓ Purchase and activate your program.

Once we verify your information, you can purchase your program on the Apple Online Store. After you have completed your purchase, we'll send you an email within 24 hours on how to activate your membership.











Individual

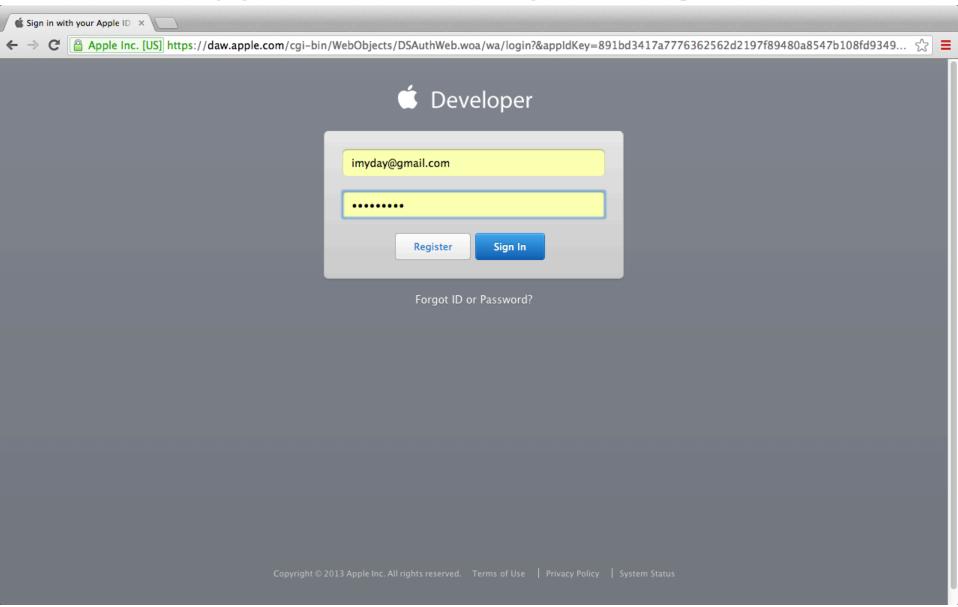
A valid credit card for purchase.

standard business identifiers. To learn more, read our FAQs. Before enrolling, check to see if D&B has assigned you a D-U-N-S Number. If not, please request one.

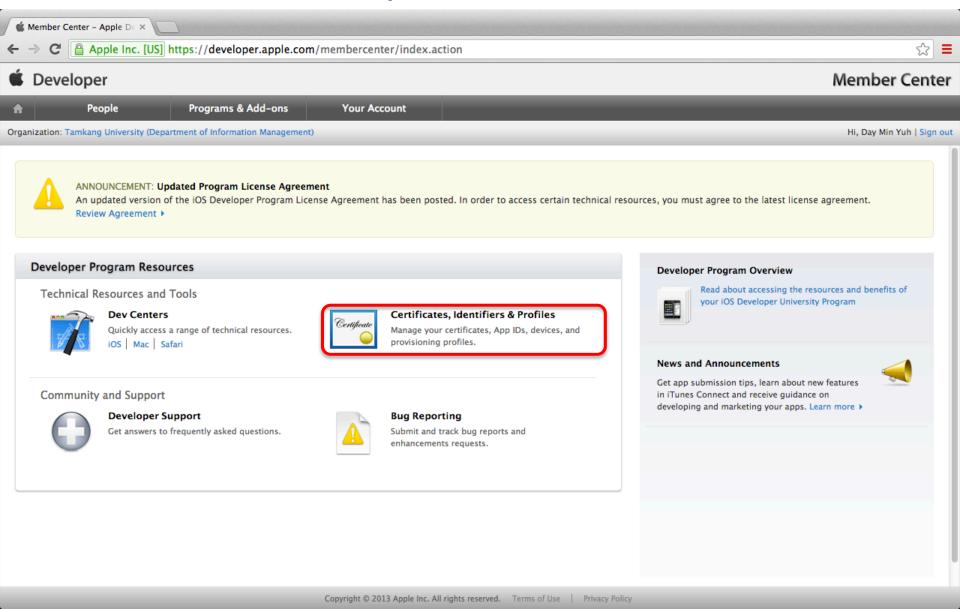
Note: We do not accept DBAs, Fictitious Business, Trade

names, or branches at this time.

Company



Certificates, Identifiers & Profiles



Certificates, Identifiers & Profiles

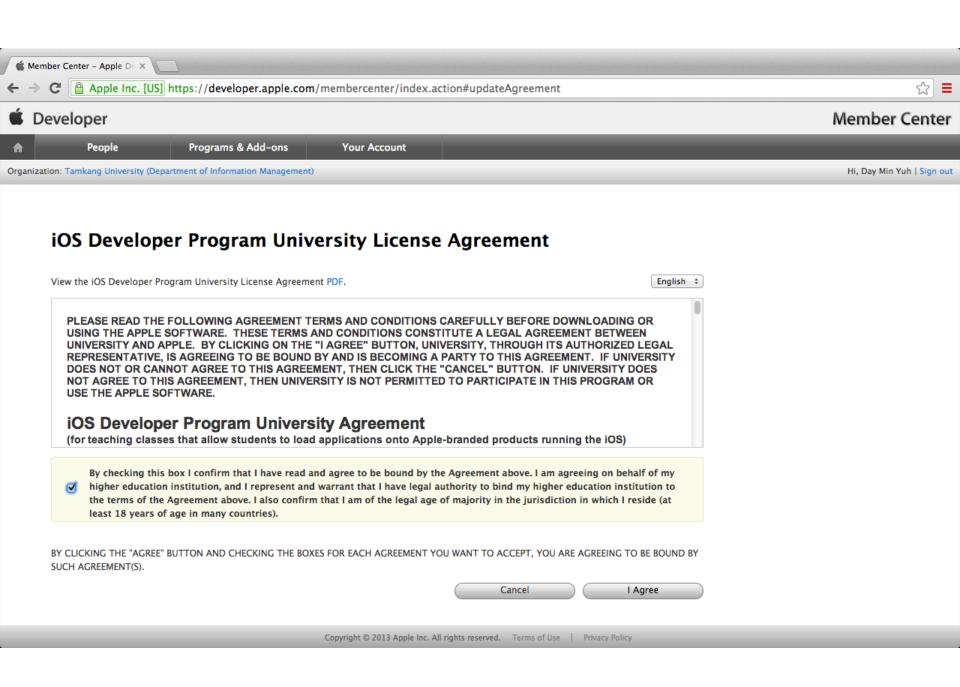




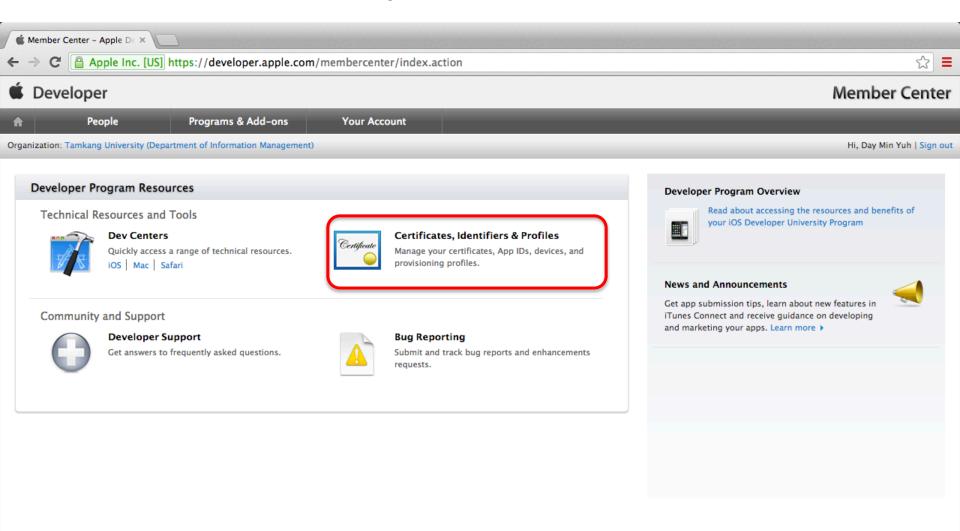


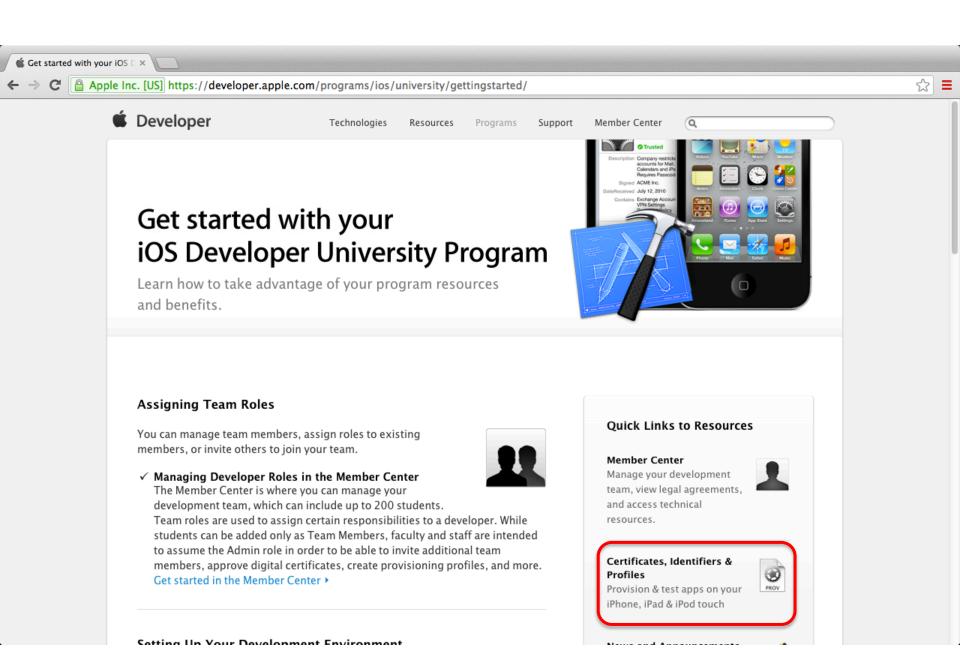
Certificates, Identifiers & Profiles

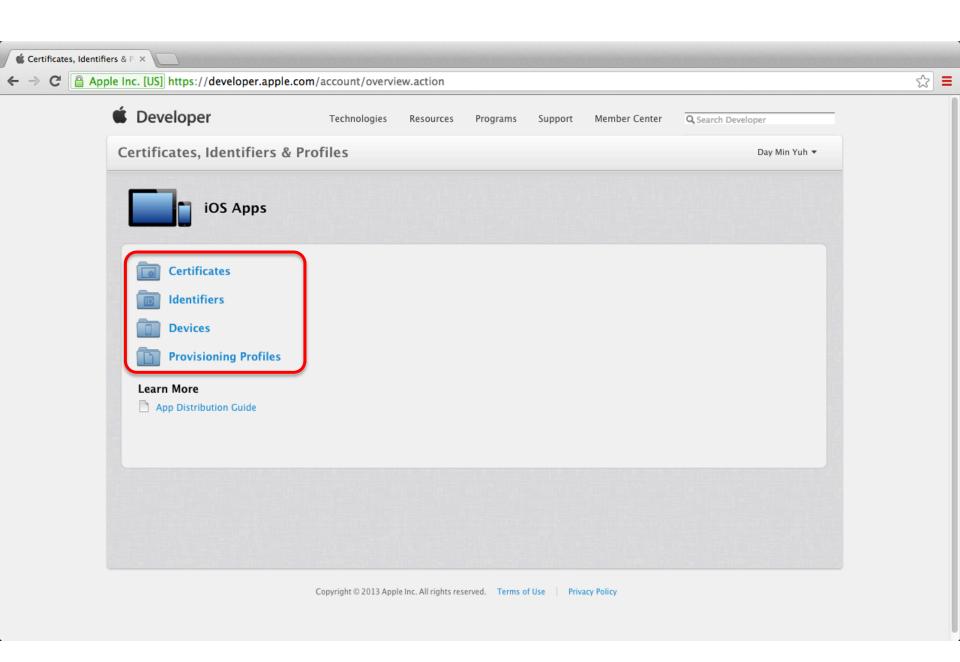
Manage your certificates, App IDs, devices, and provisioning profiles.

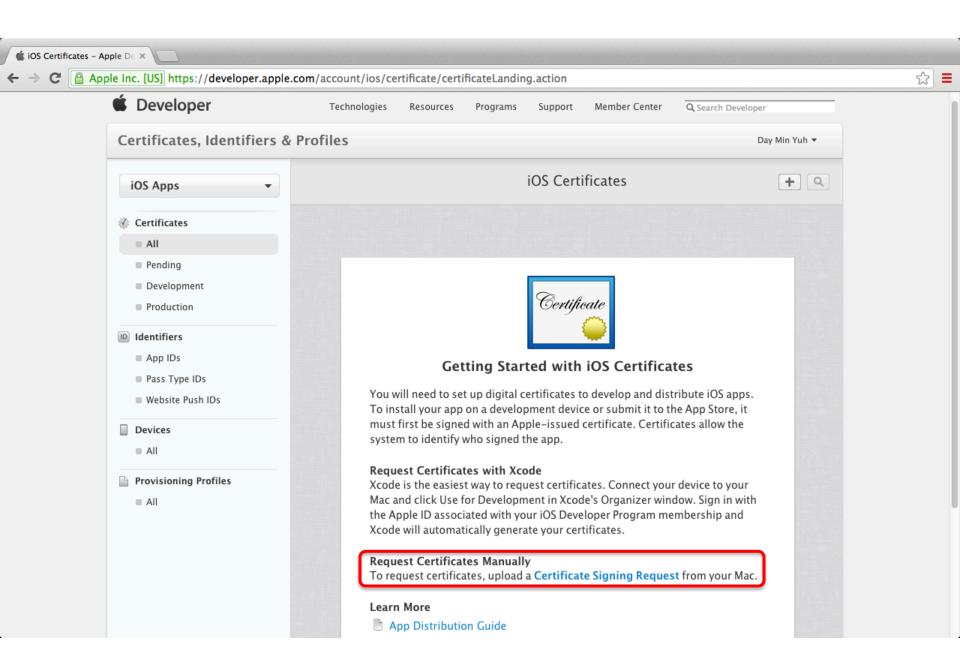


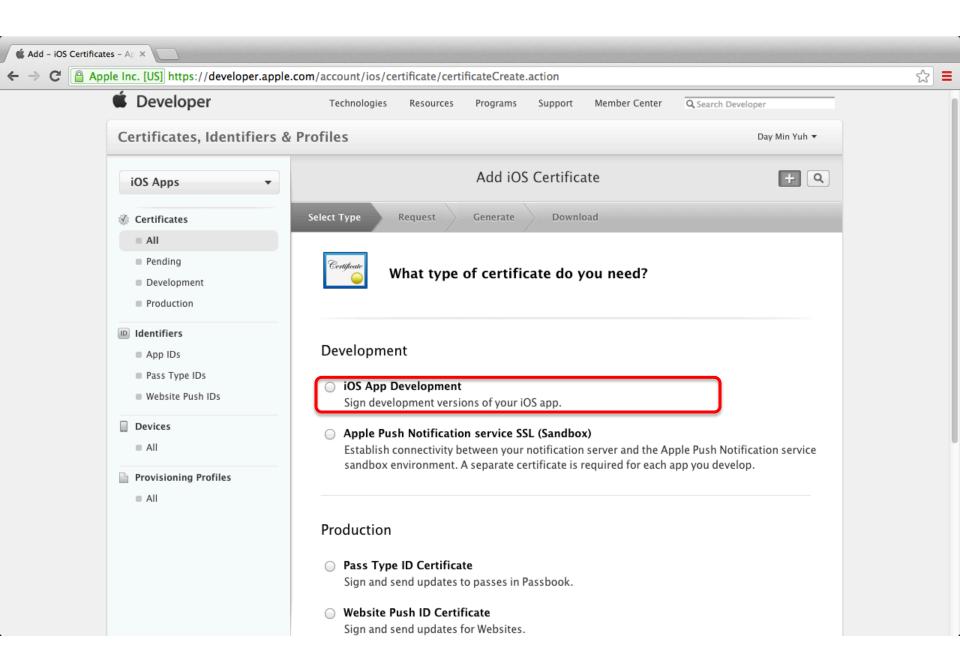
Certificates, Identifiers & Profiles

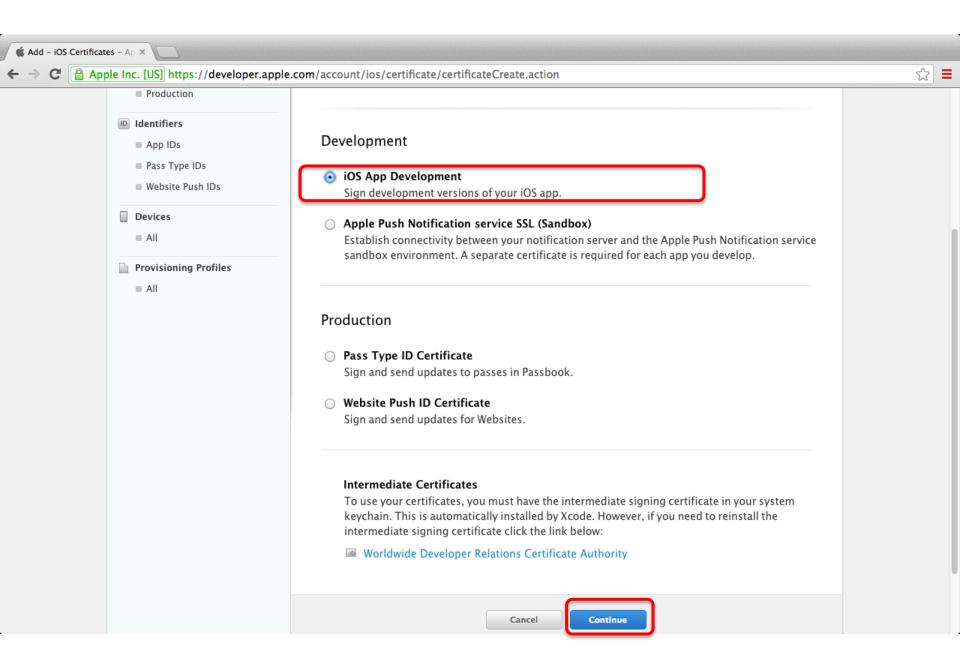




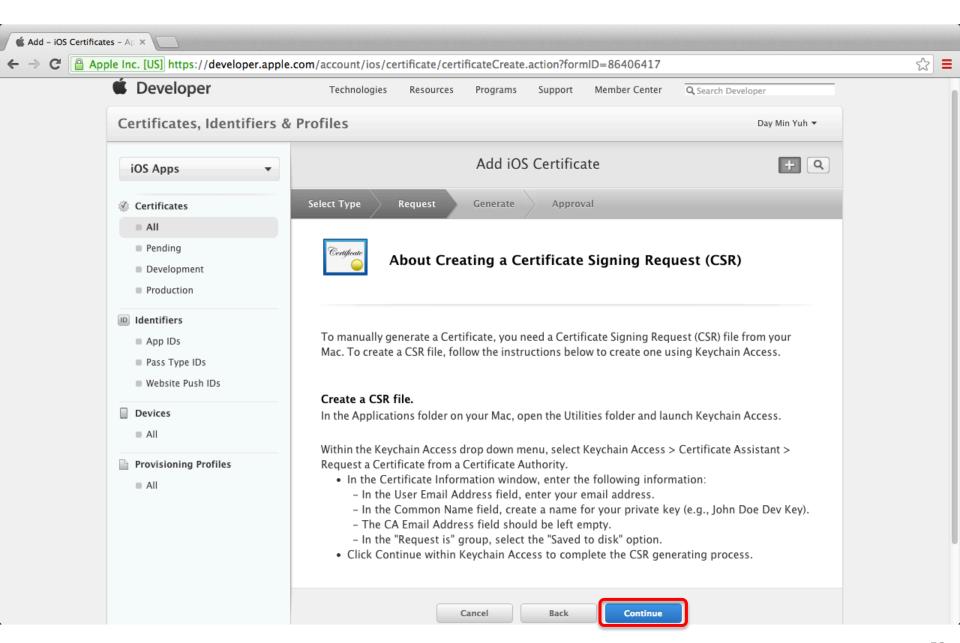




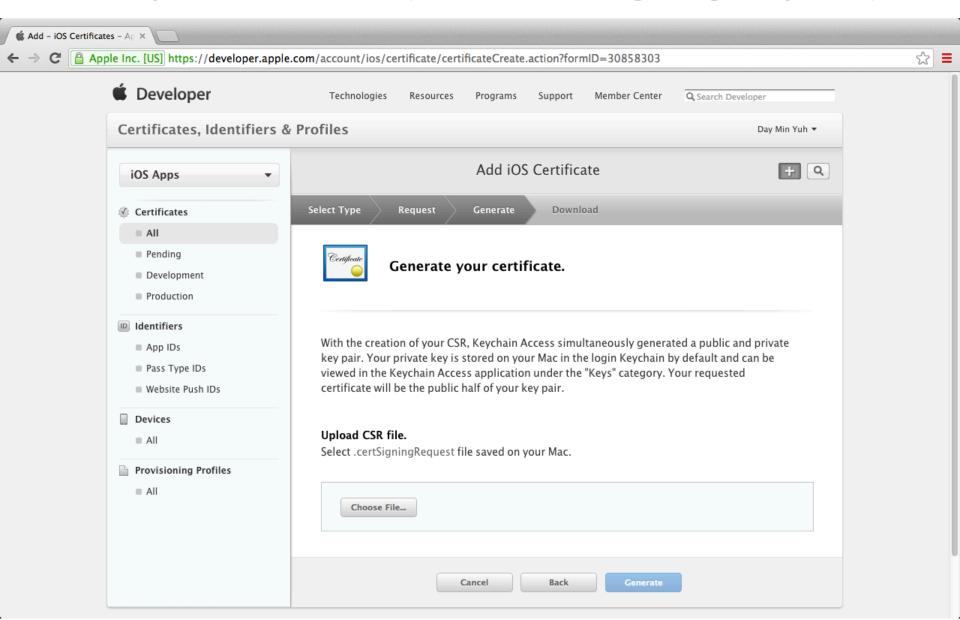




Certificate Signing Request (CSR)



Upload CSR file (CertificateSigningRequest)



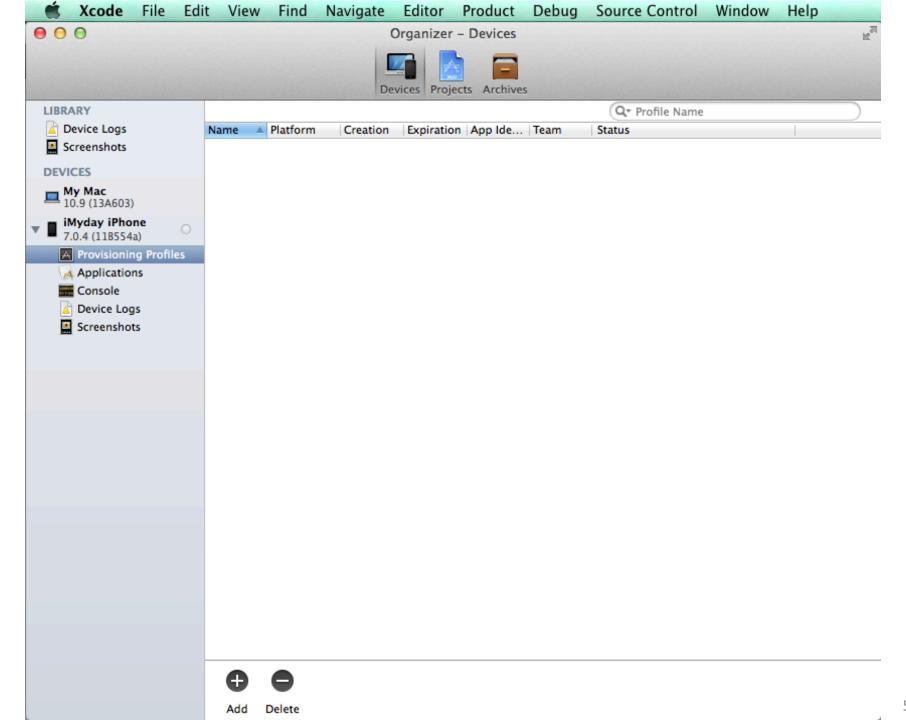






Keychain Access

Certificates



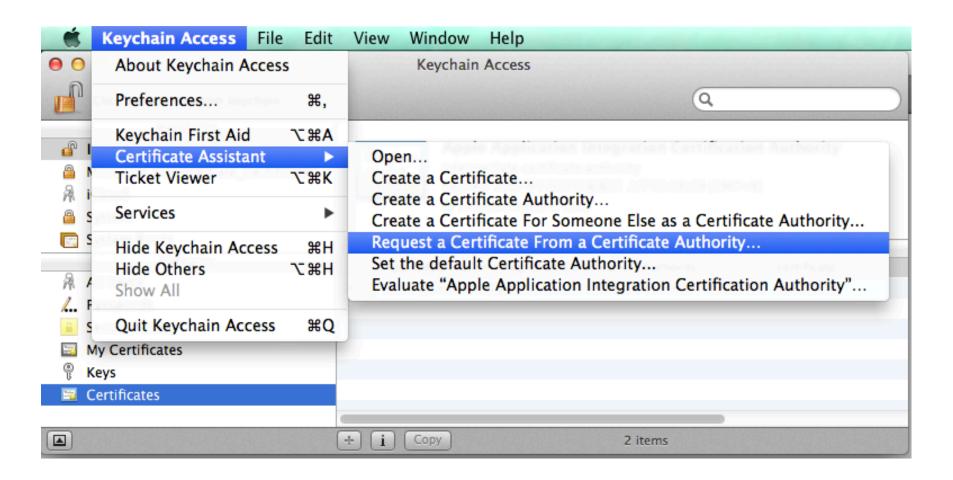
Applications\Utilities\Keychain Access



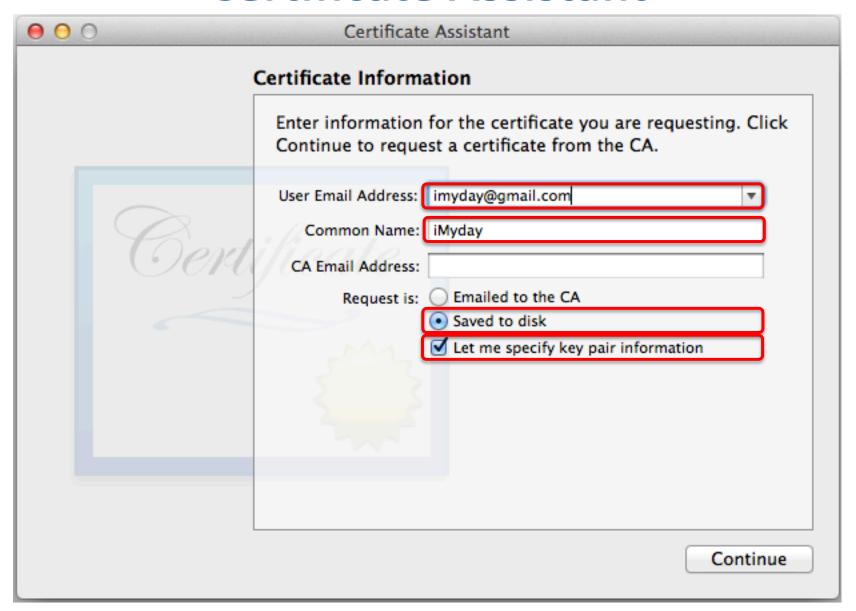




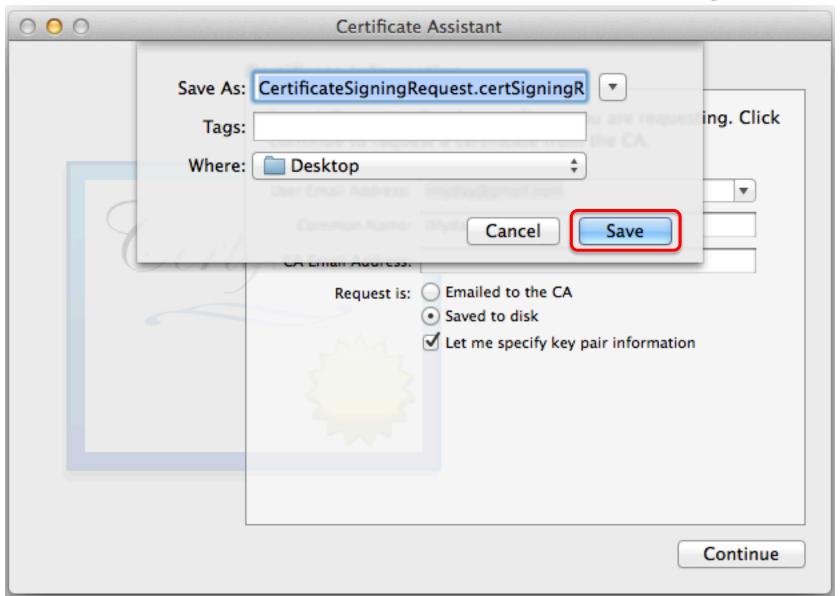
Request a Certificate From a Certificate Authority

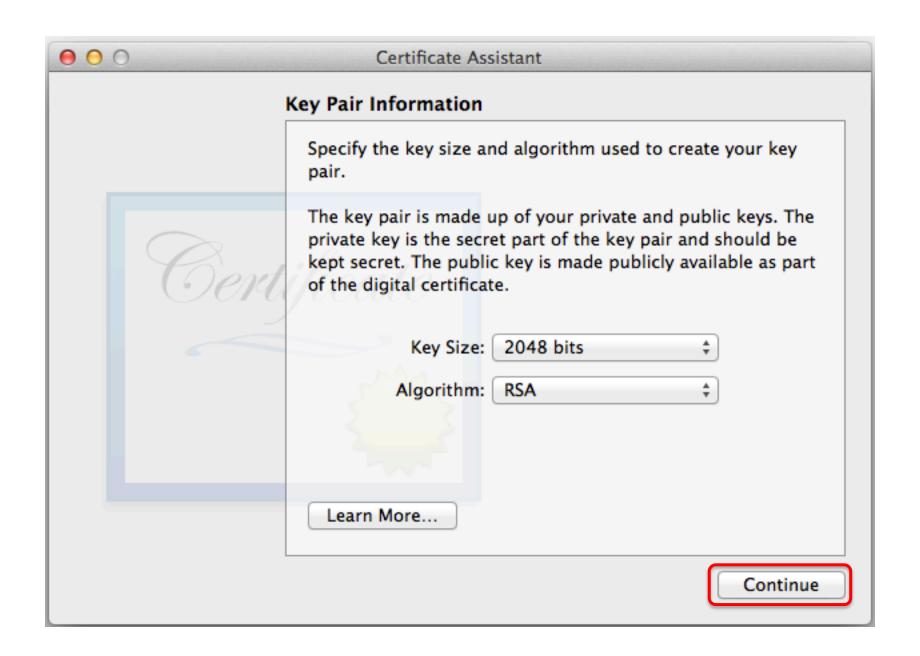


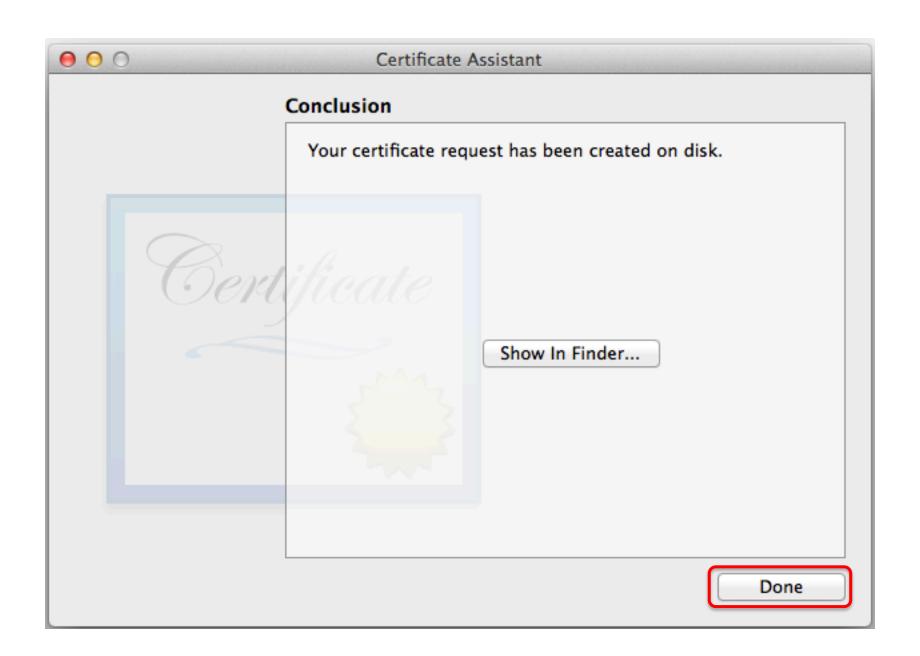
Certificate Assistant



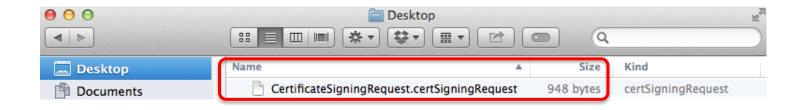
Request a Certificate From a Certificate Authority

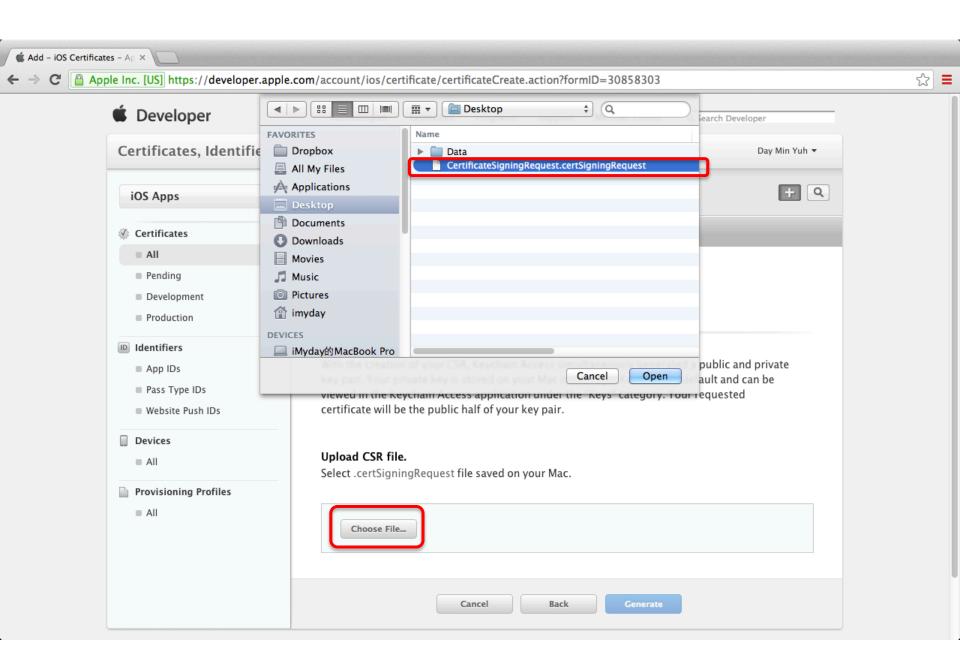


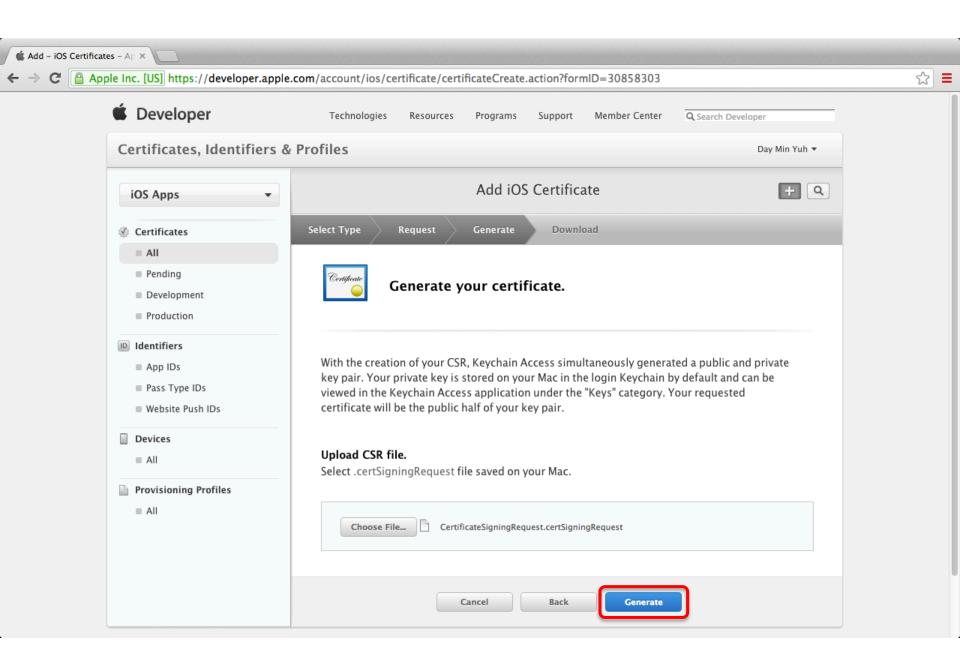


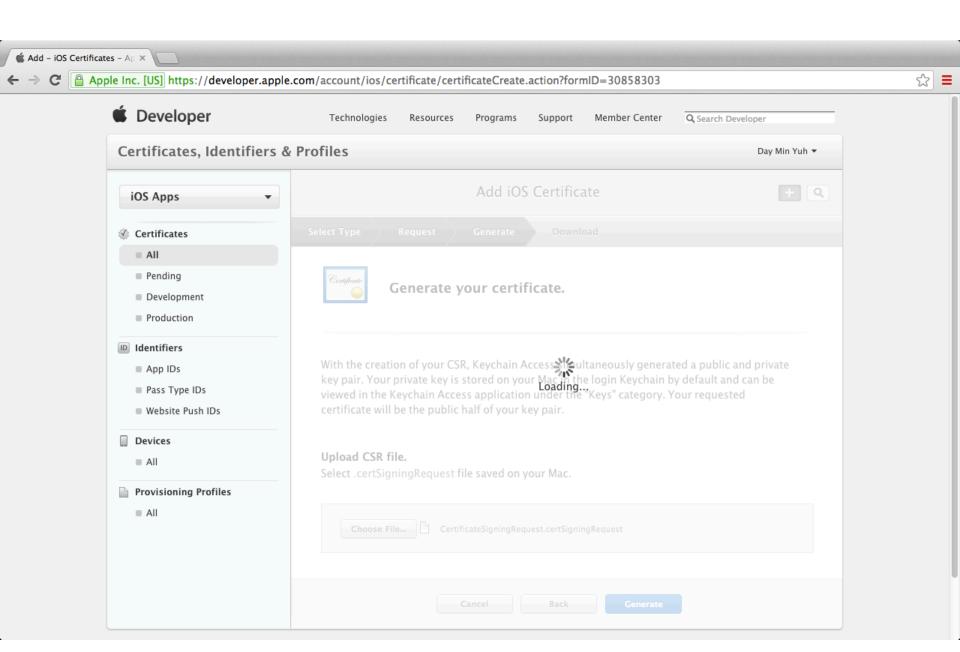


CertificateSigningRequest CSR

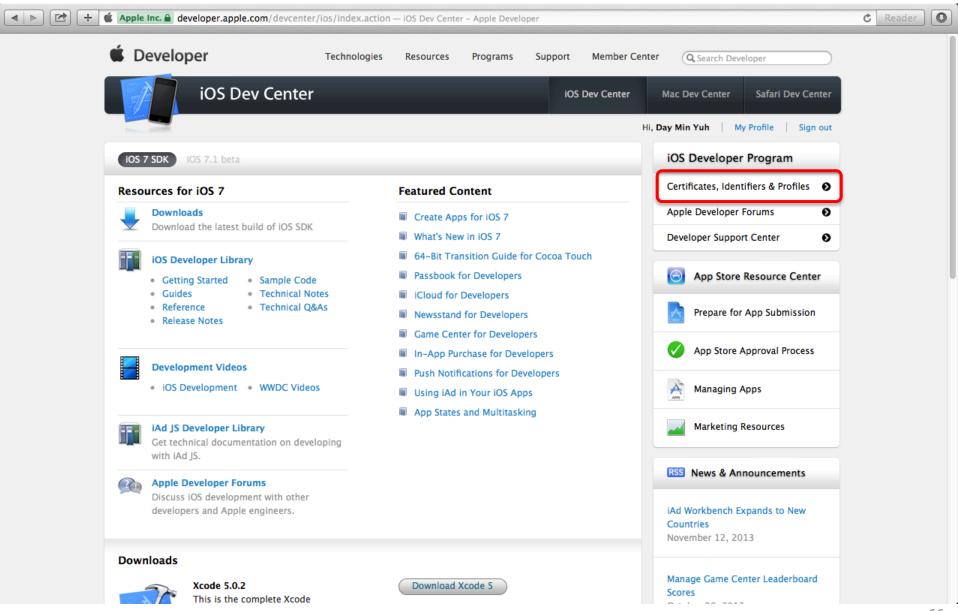


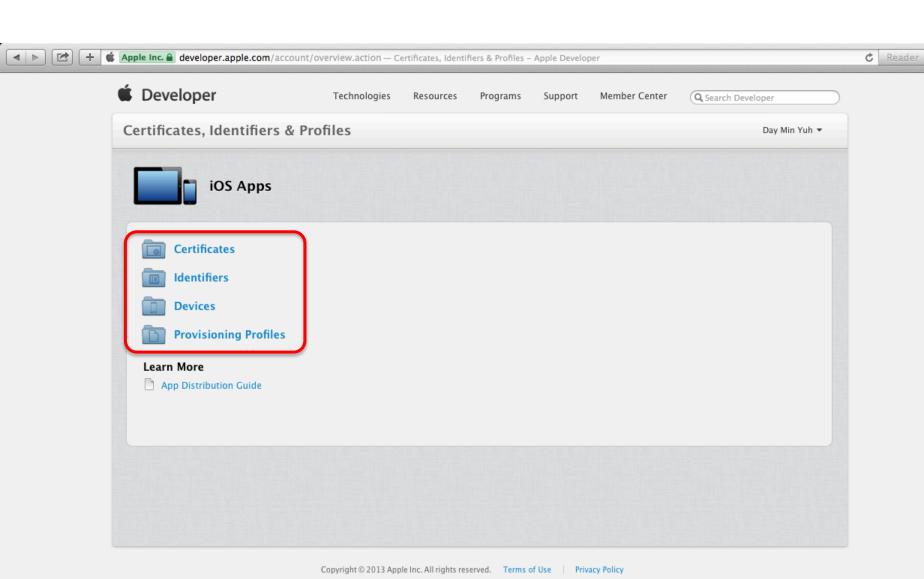


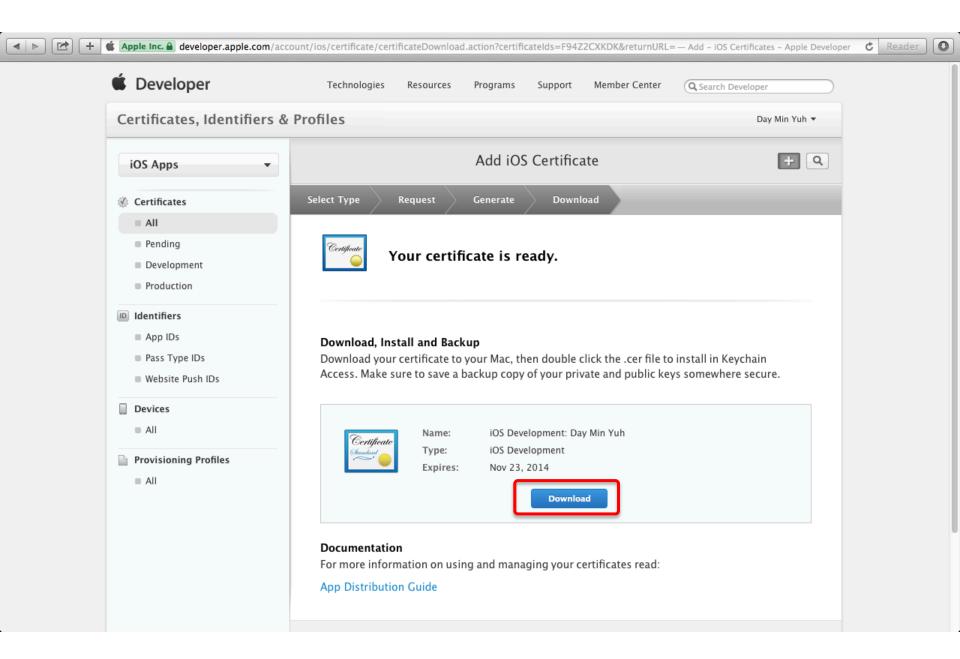




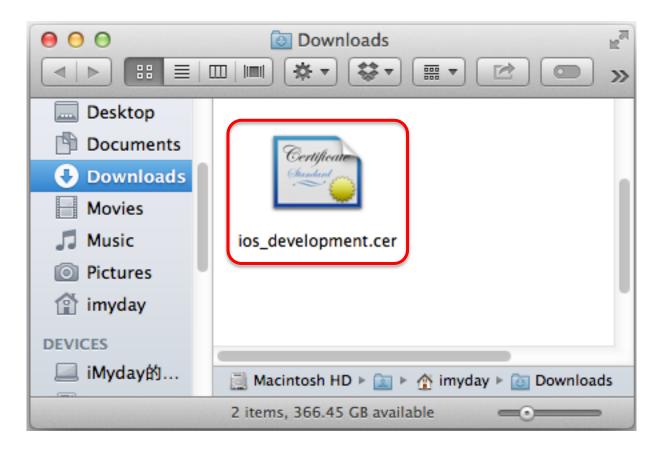
iOS Dev Center Certificate, Identifiers & Profiles

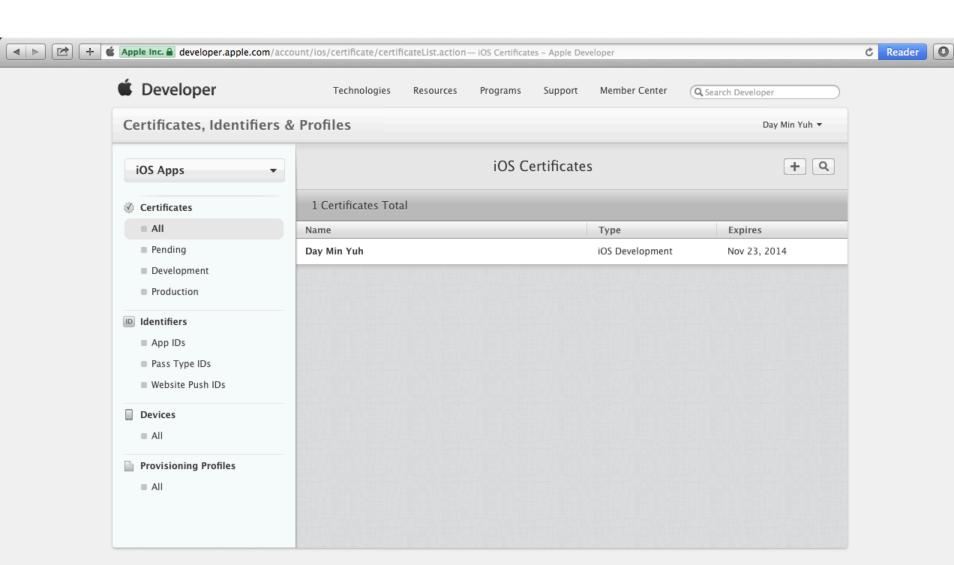






Your iOS Certificate: ios_development.cer



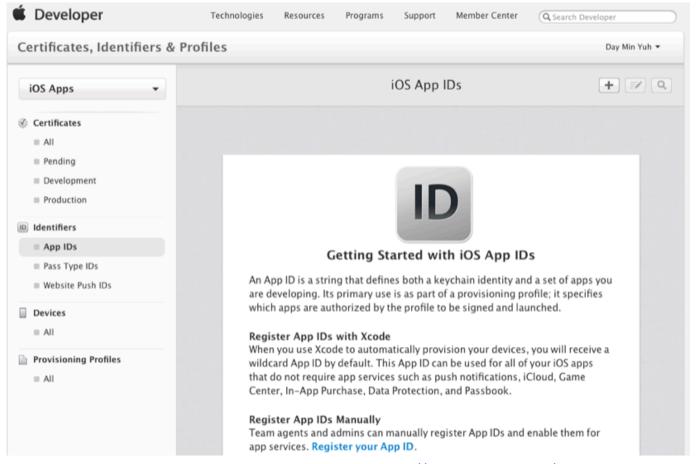


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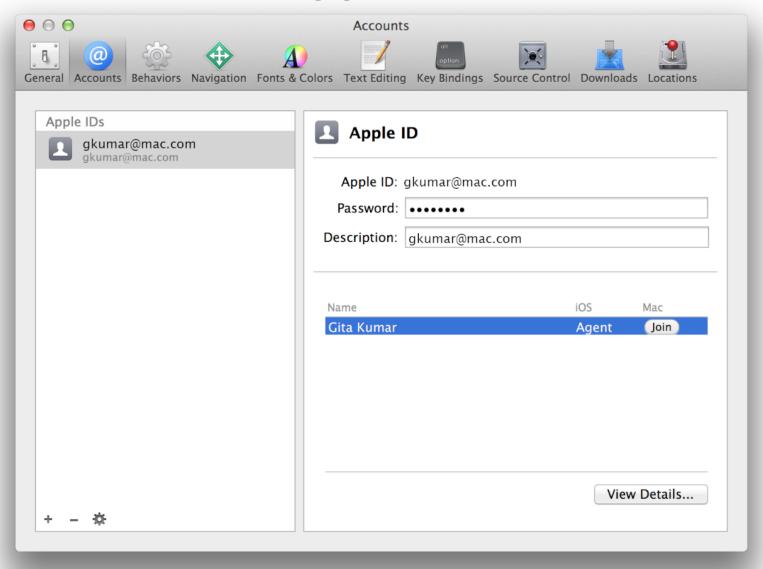


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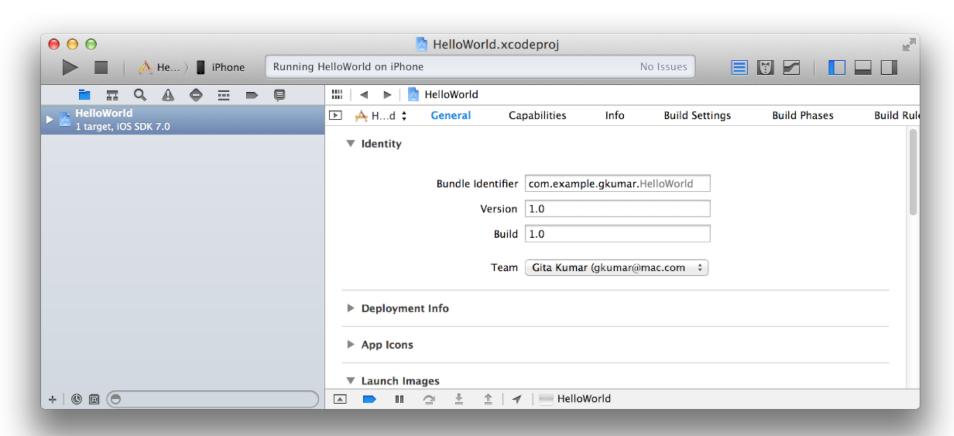
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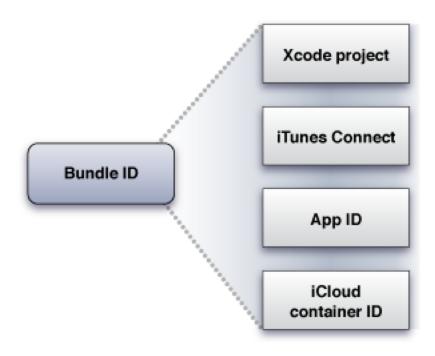
Apple ID



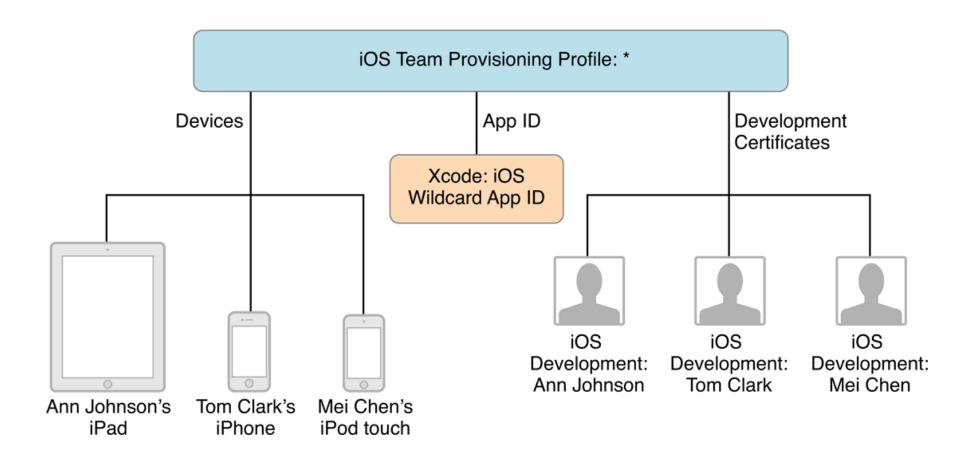
Bundle ID



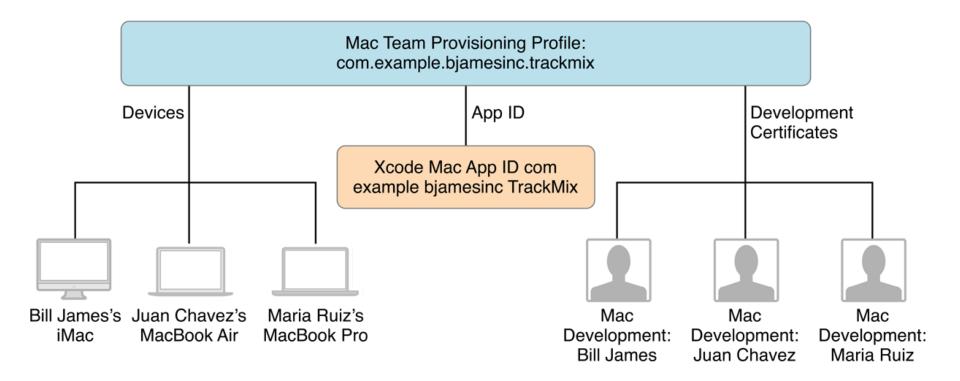
Bundle ID vs. App ID



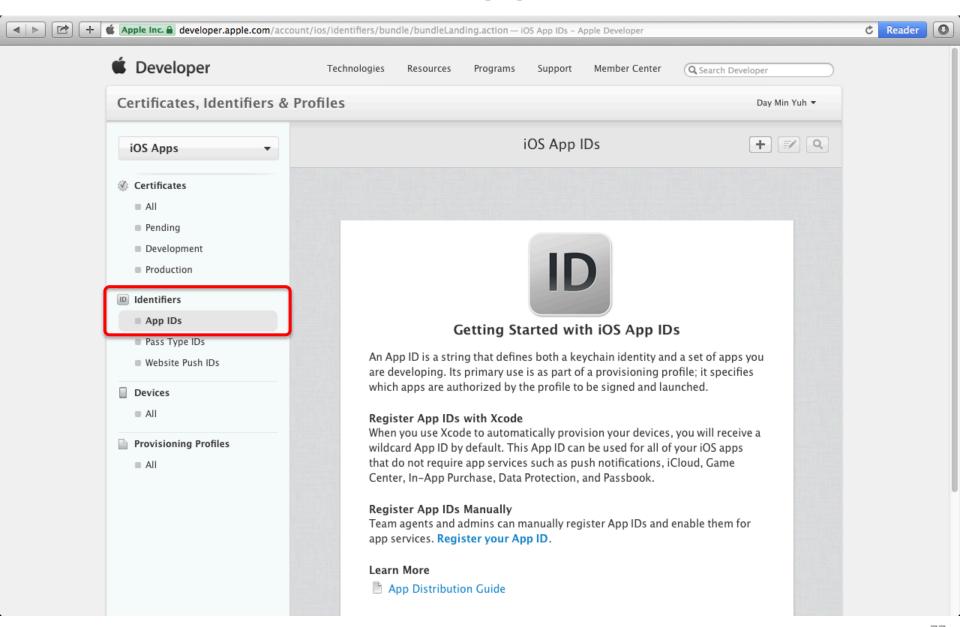
App ID, Device ID

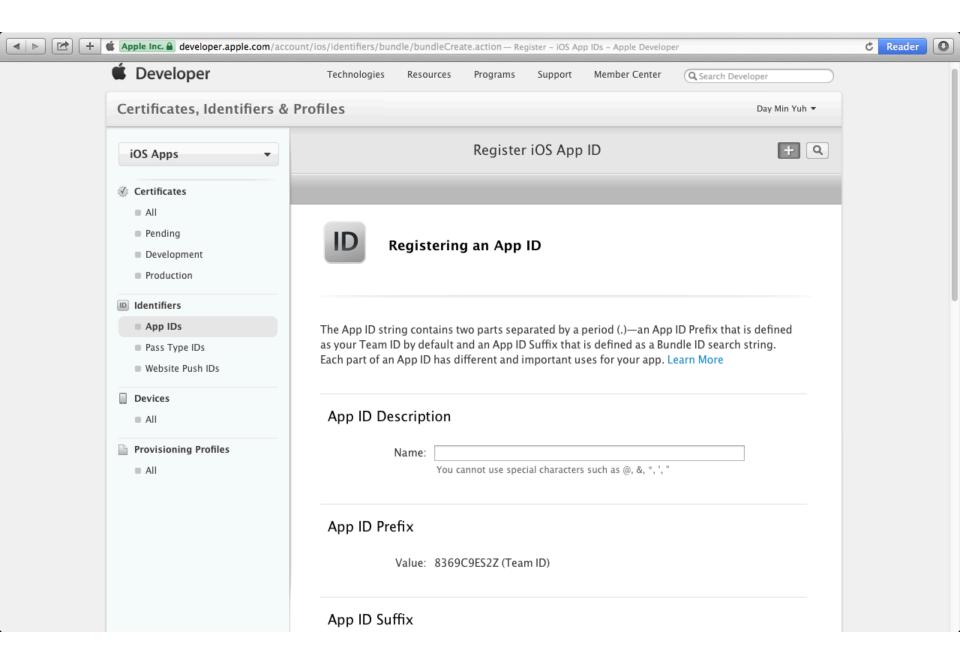


App ID, Device ID



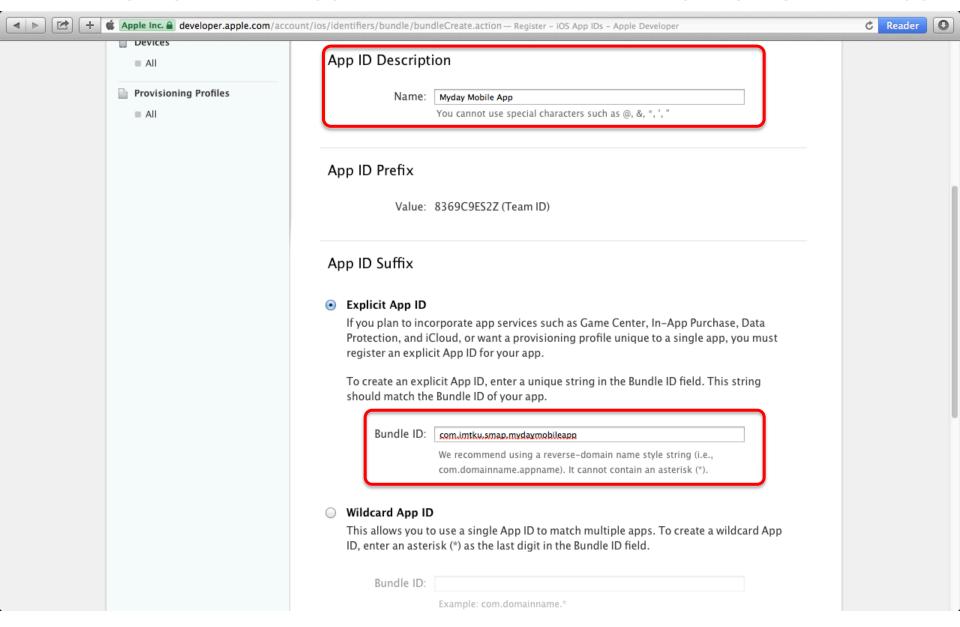
iOS App ID

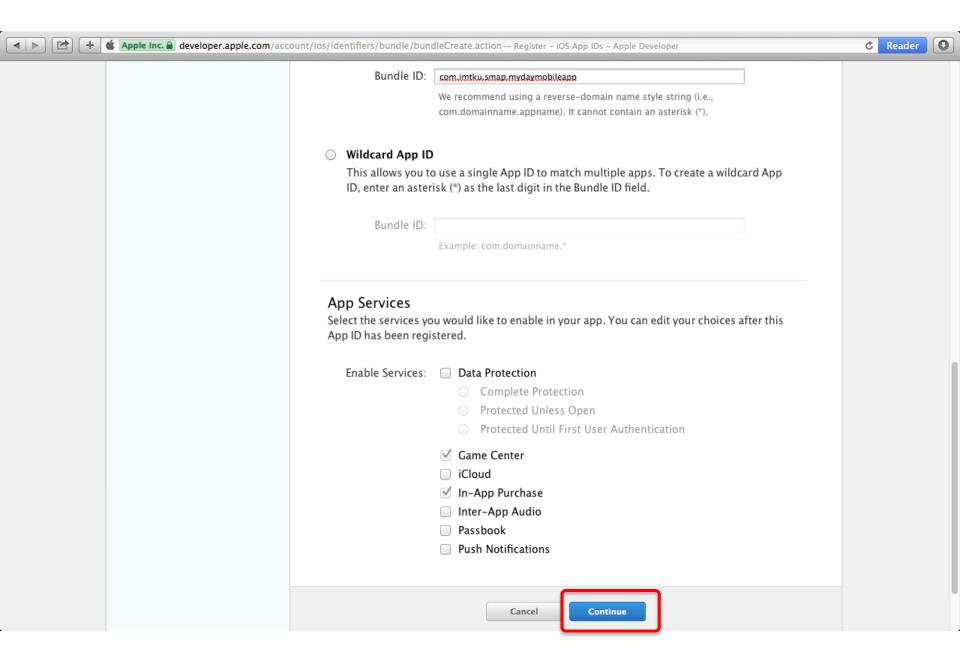


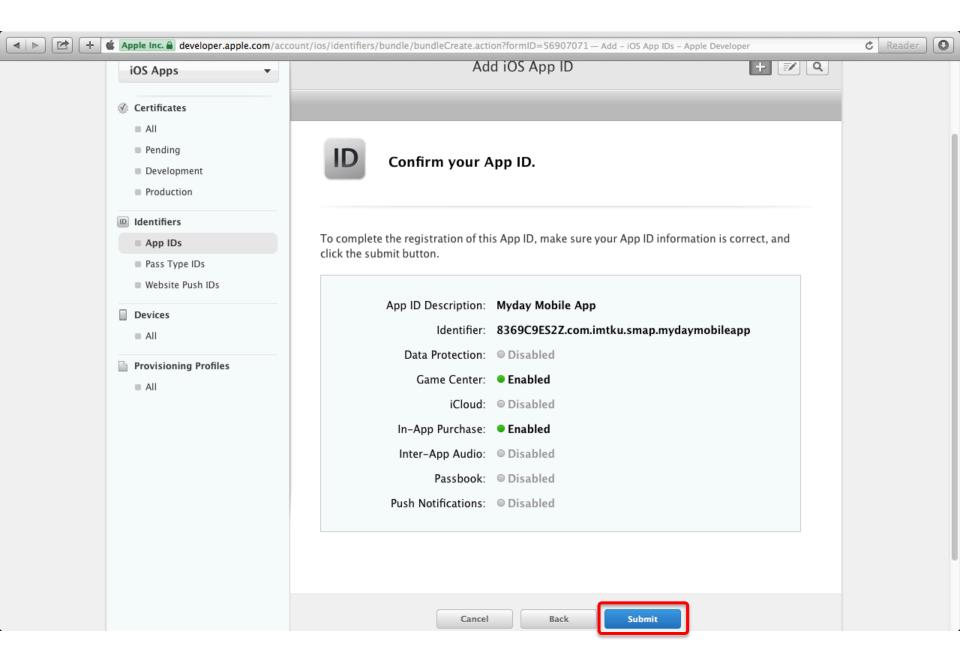


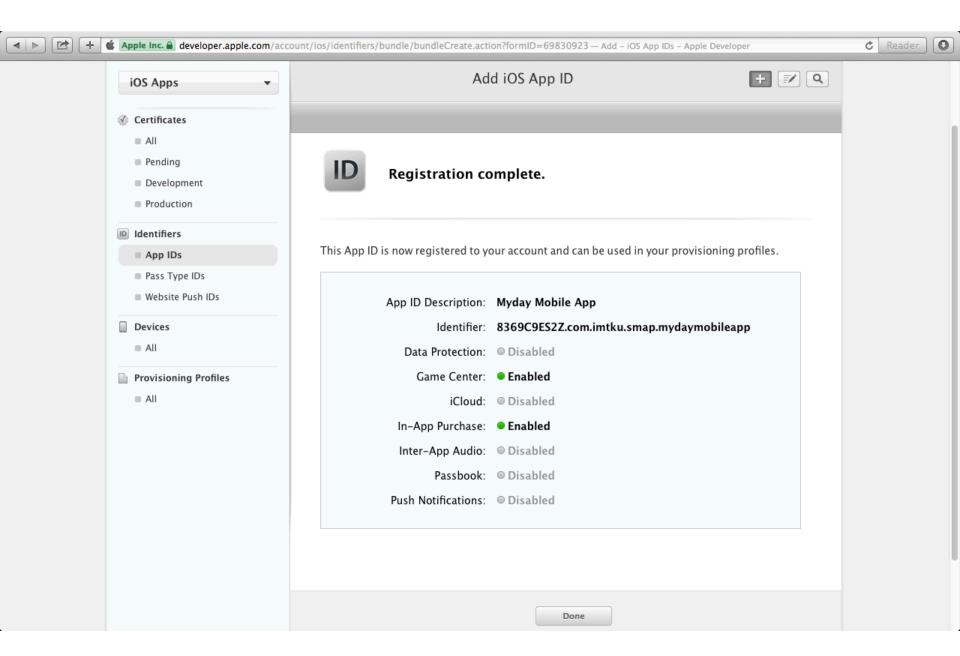
Myday Mobile App

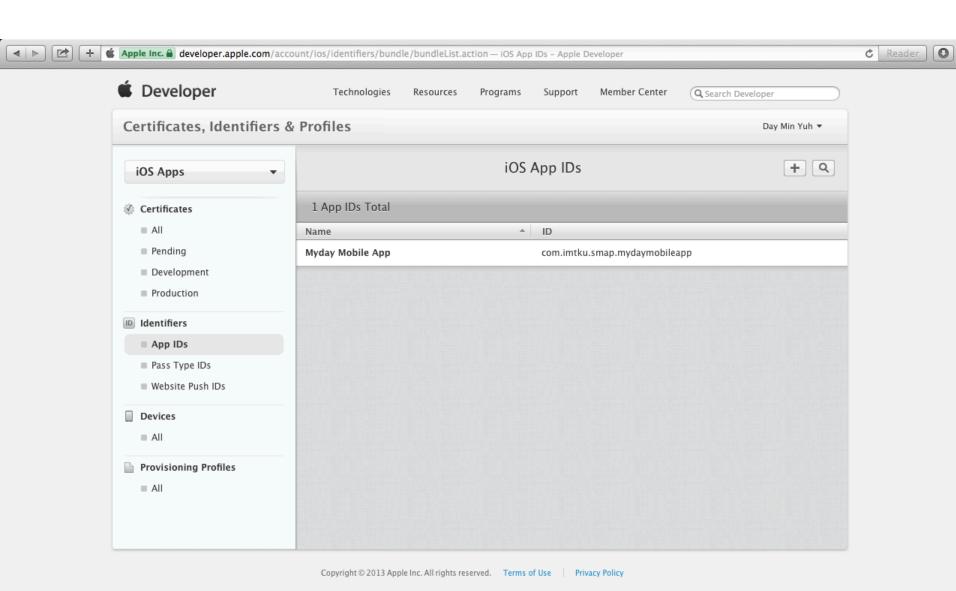
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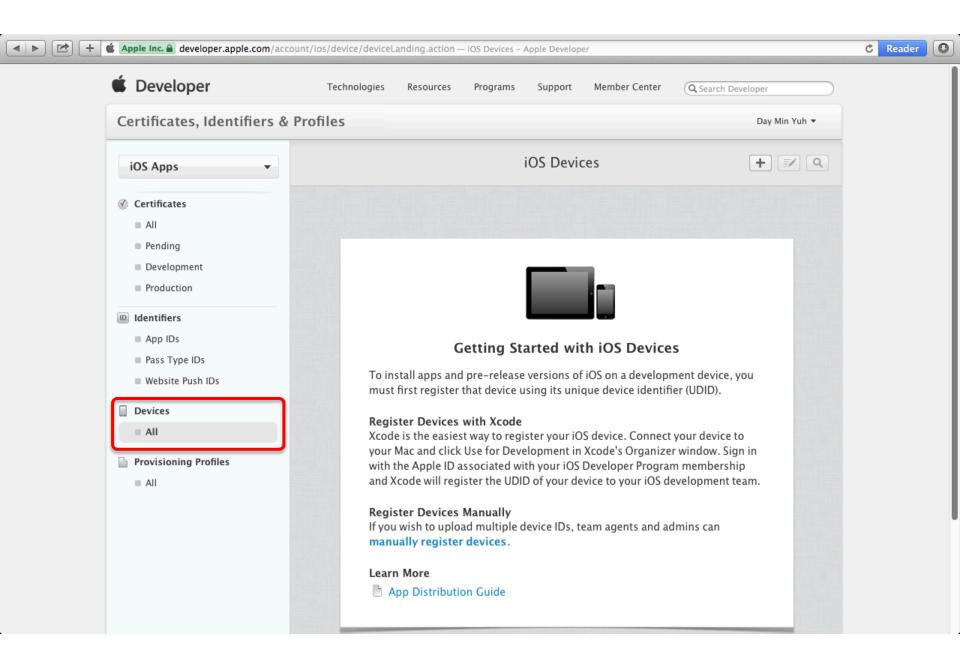


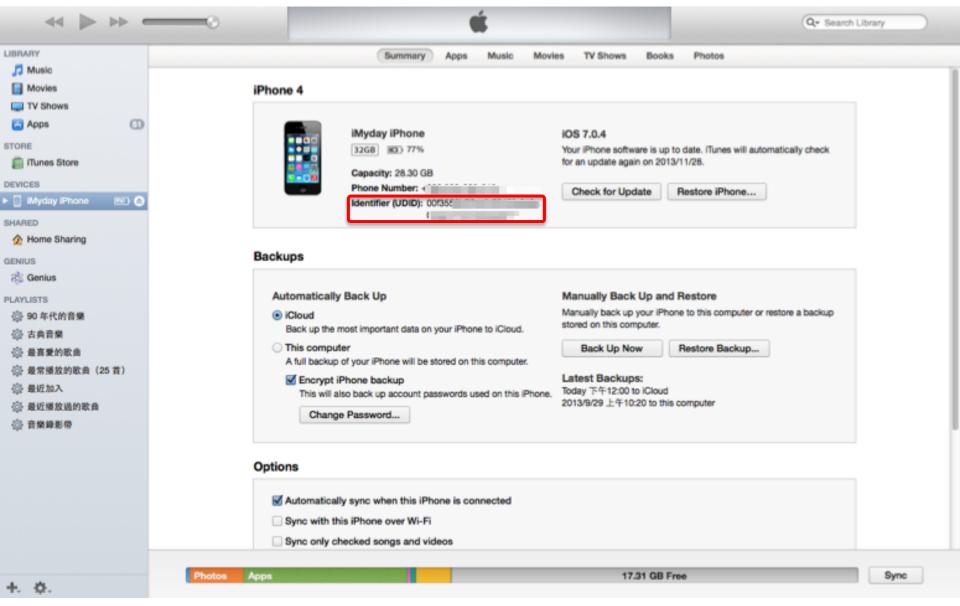


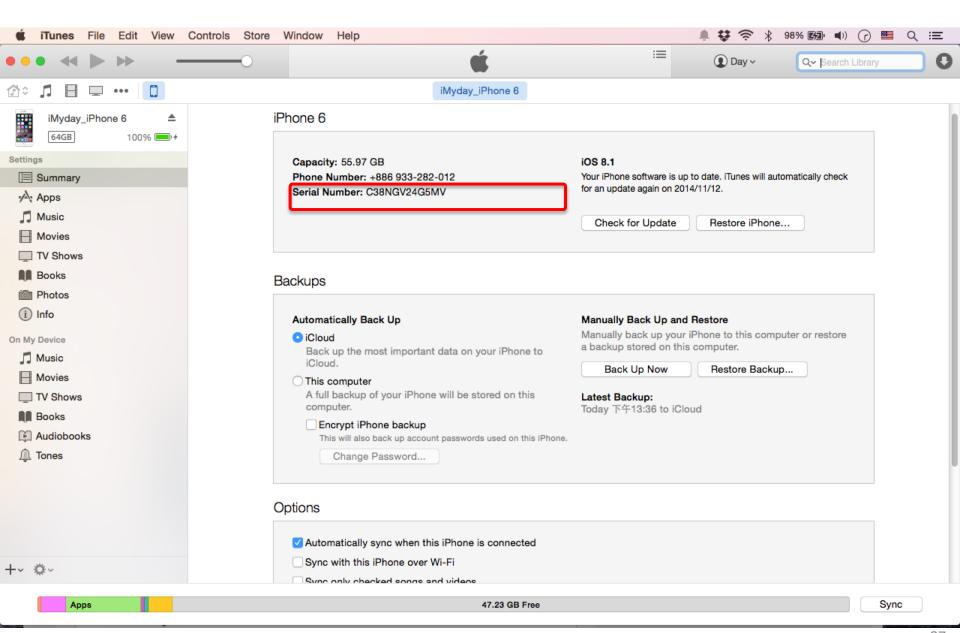
Your Device has PERMISSION

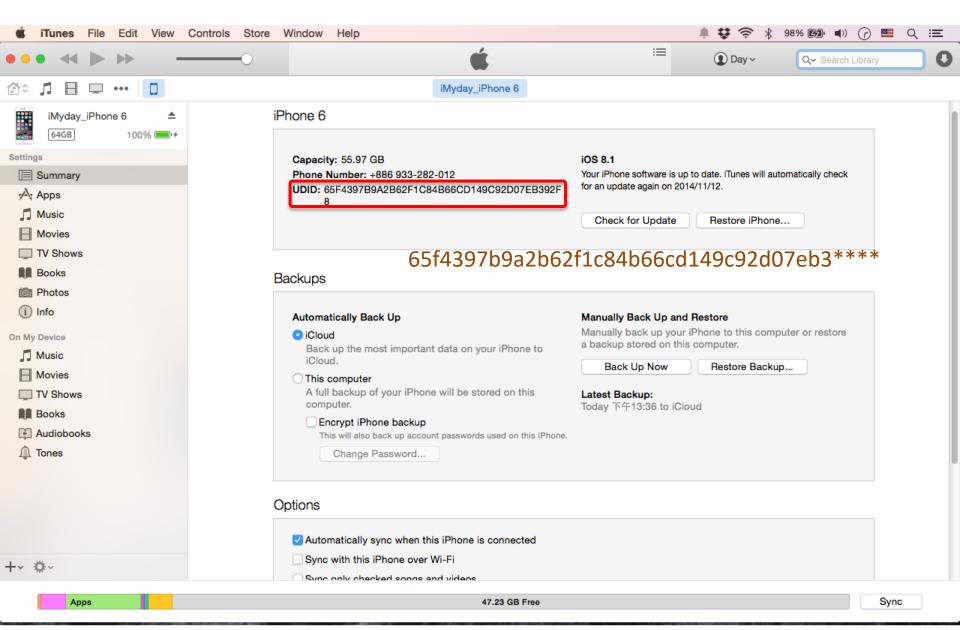


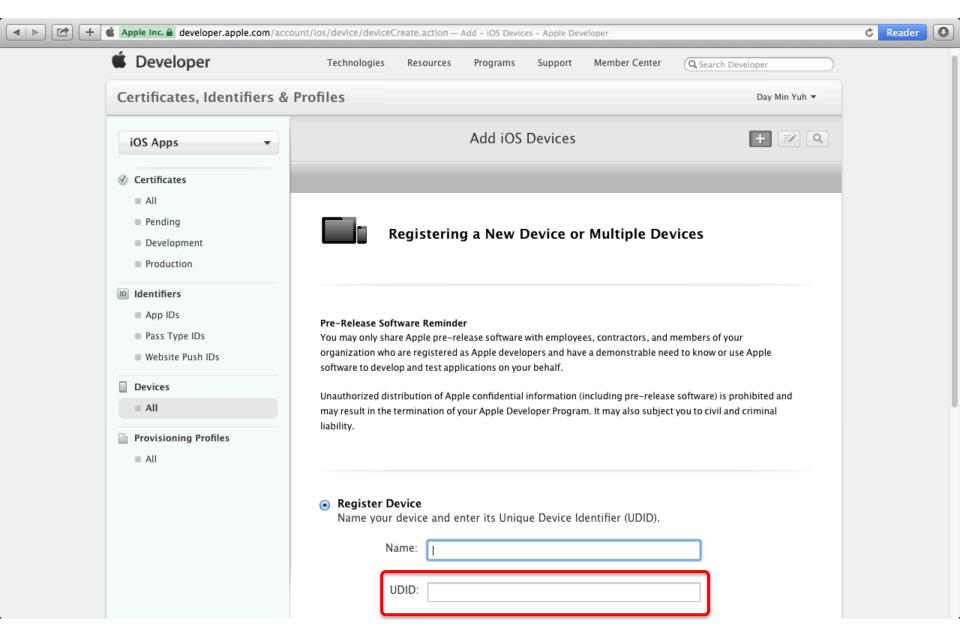


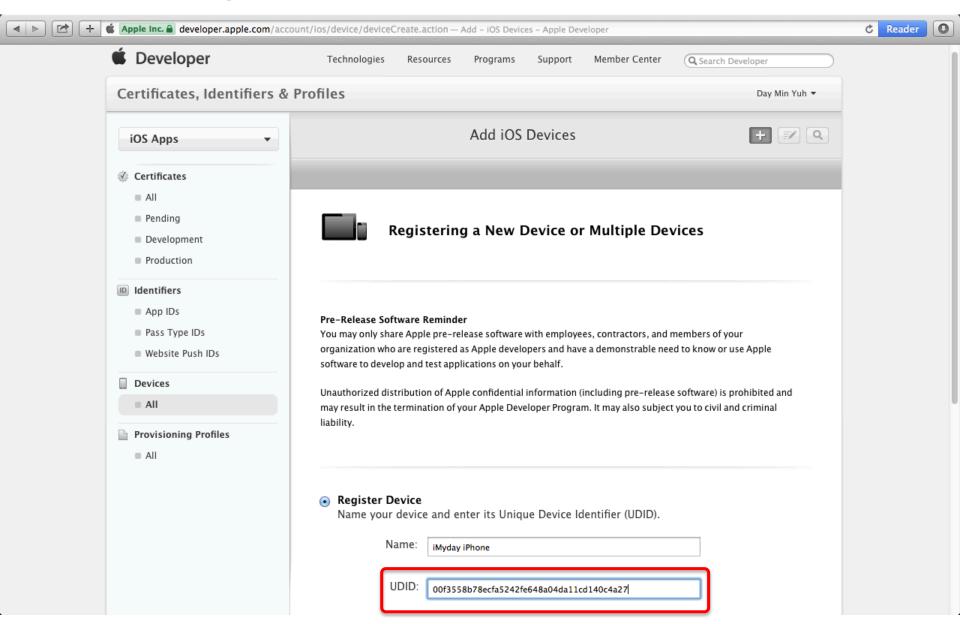


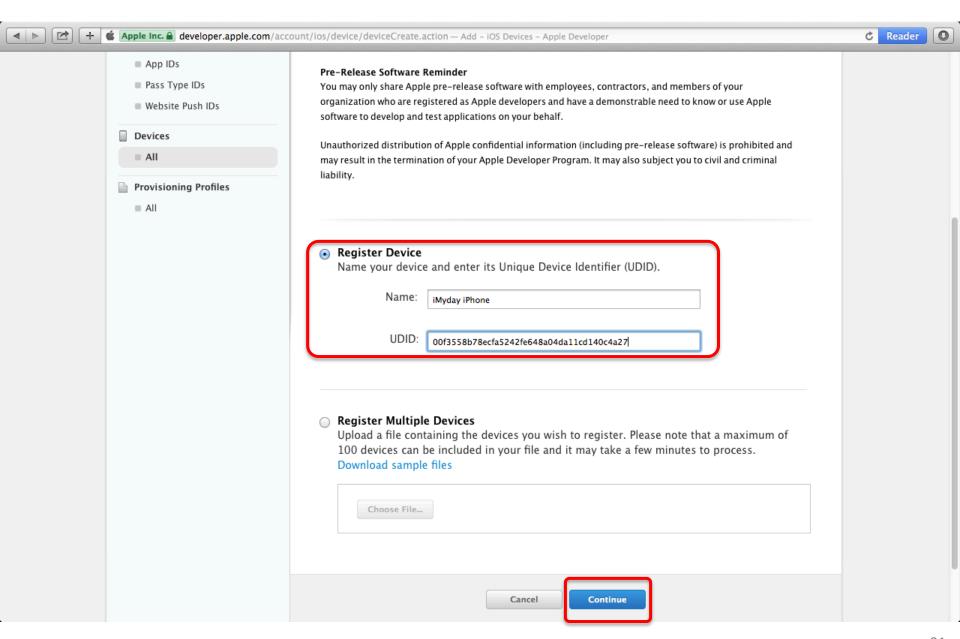


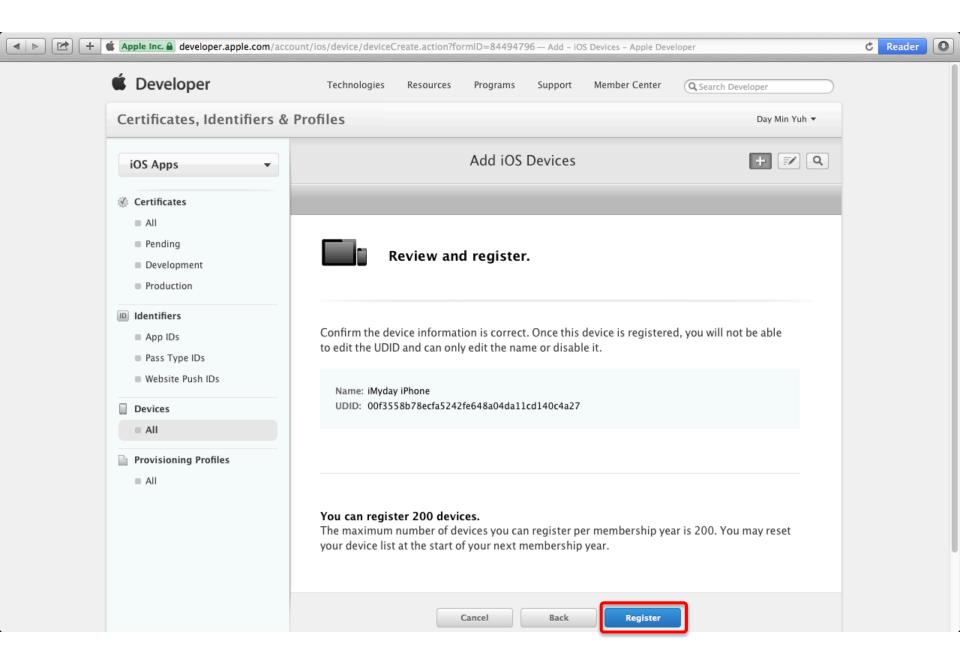


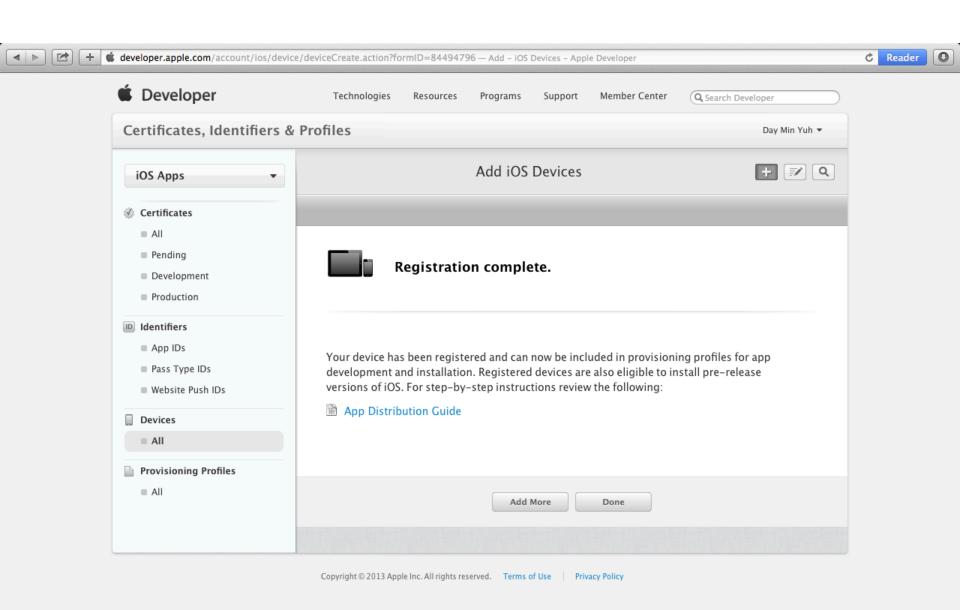


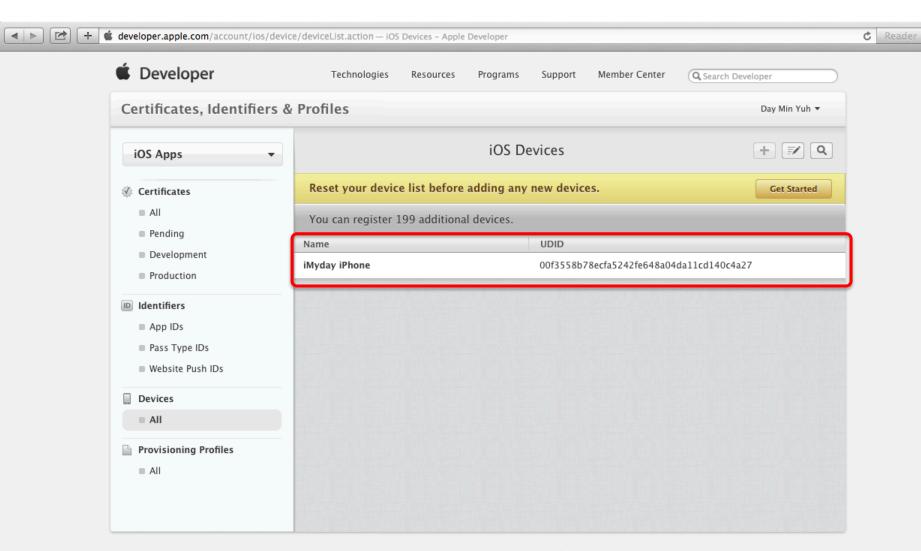




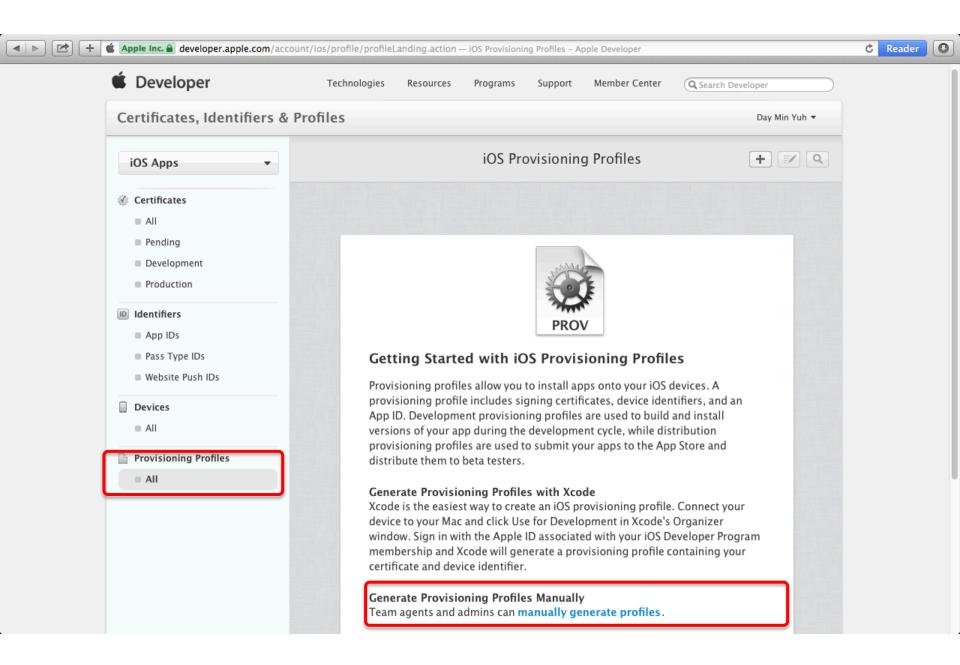


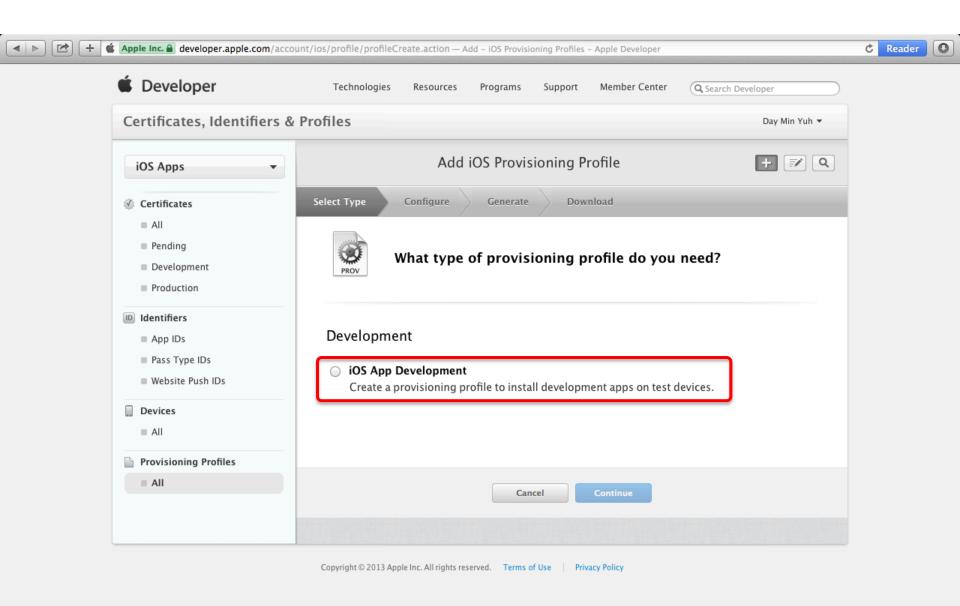


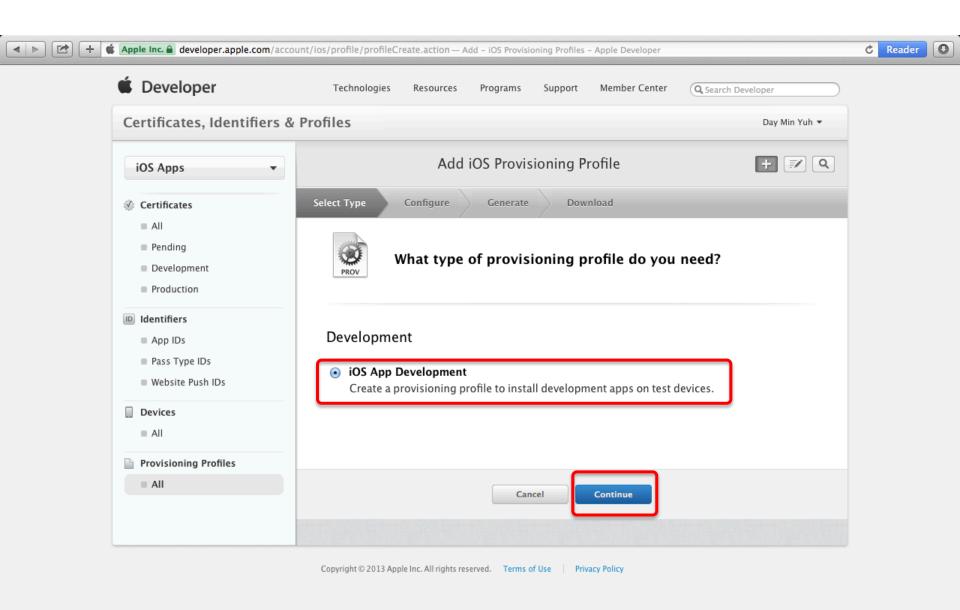


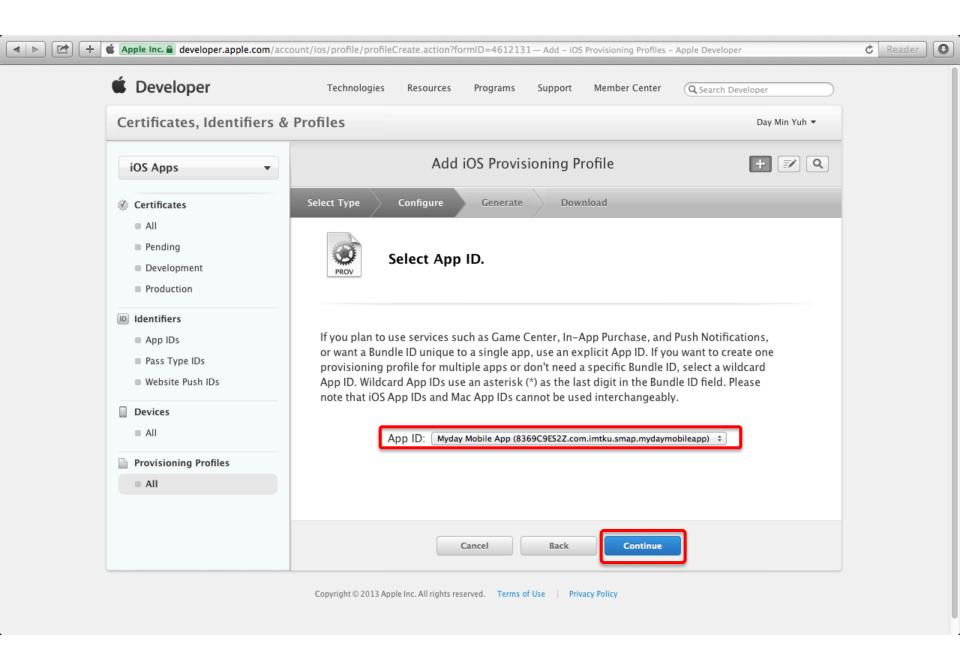


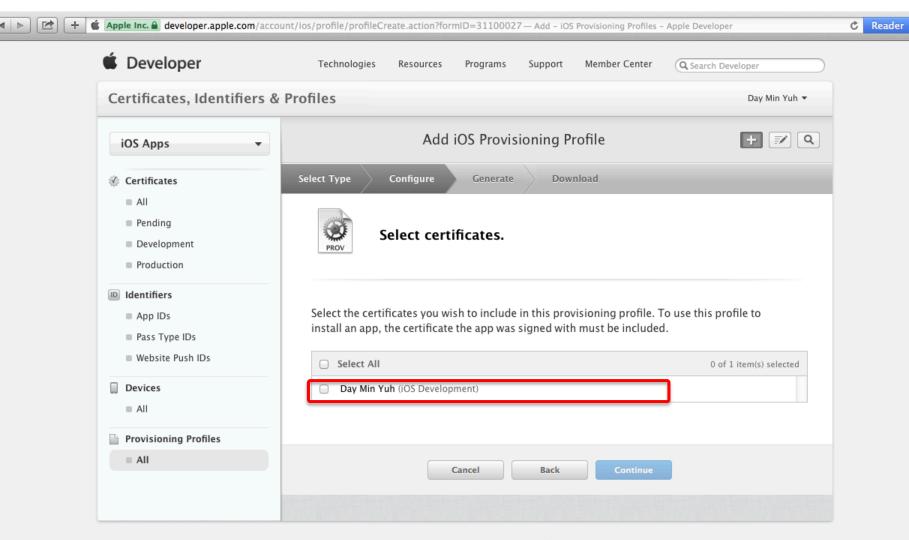
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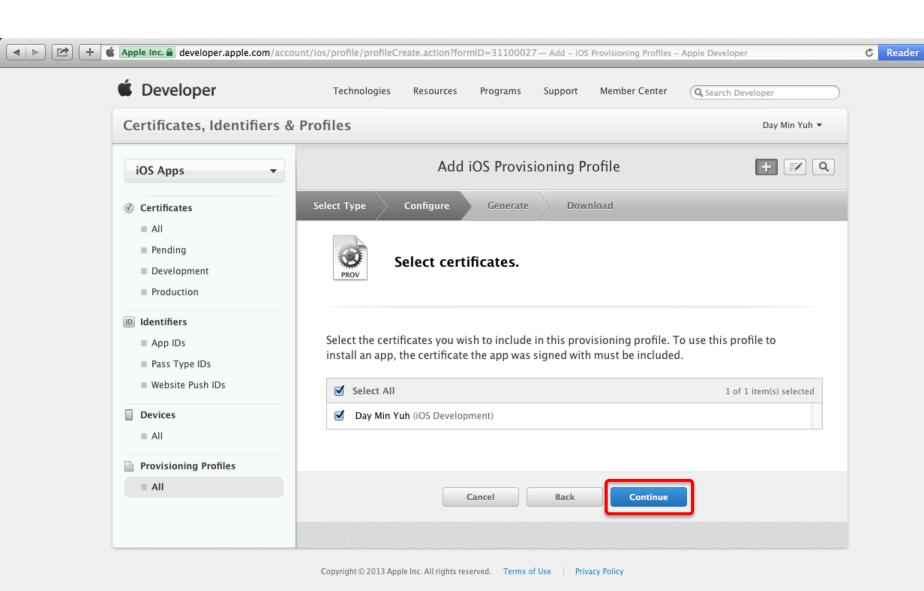


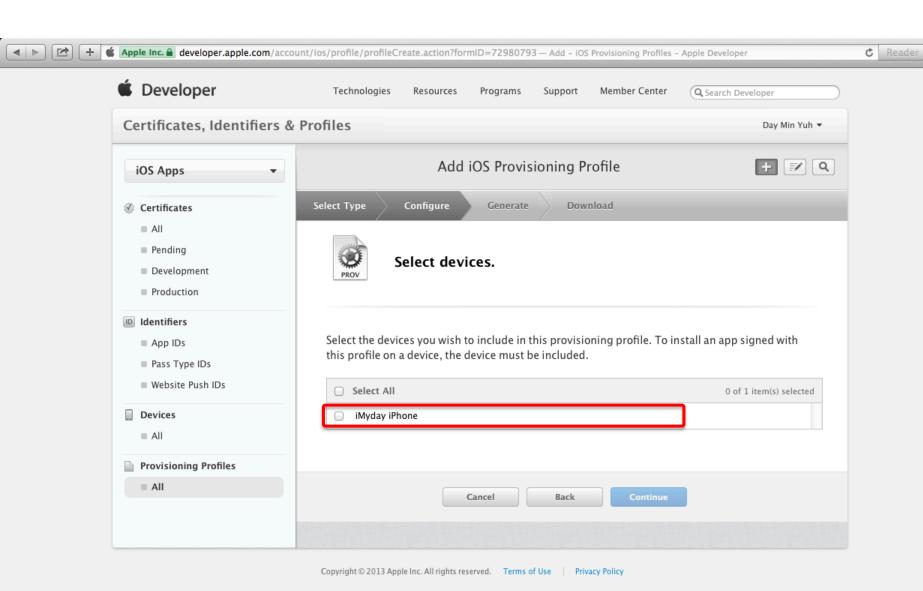


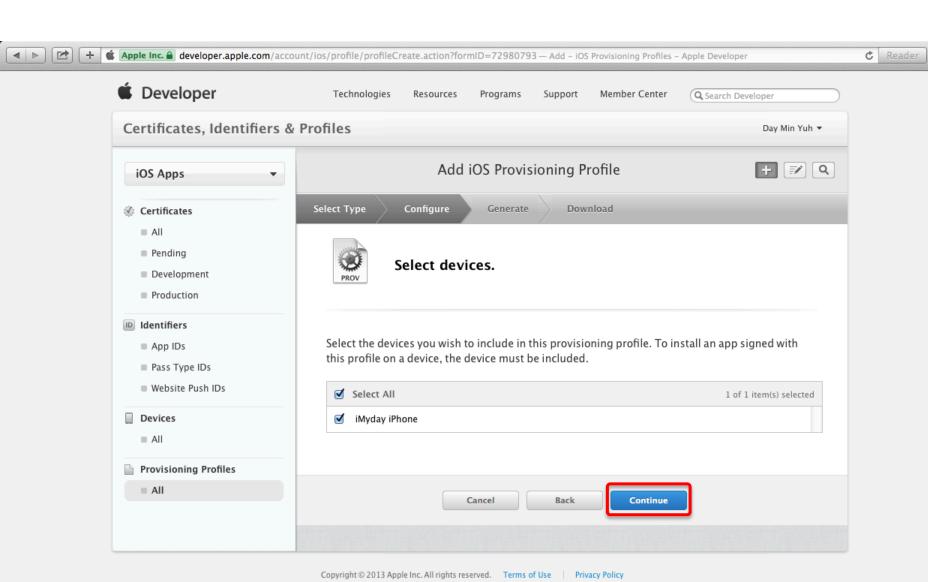


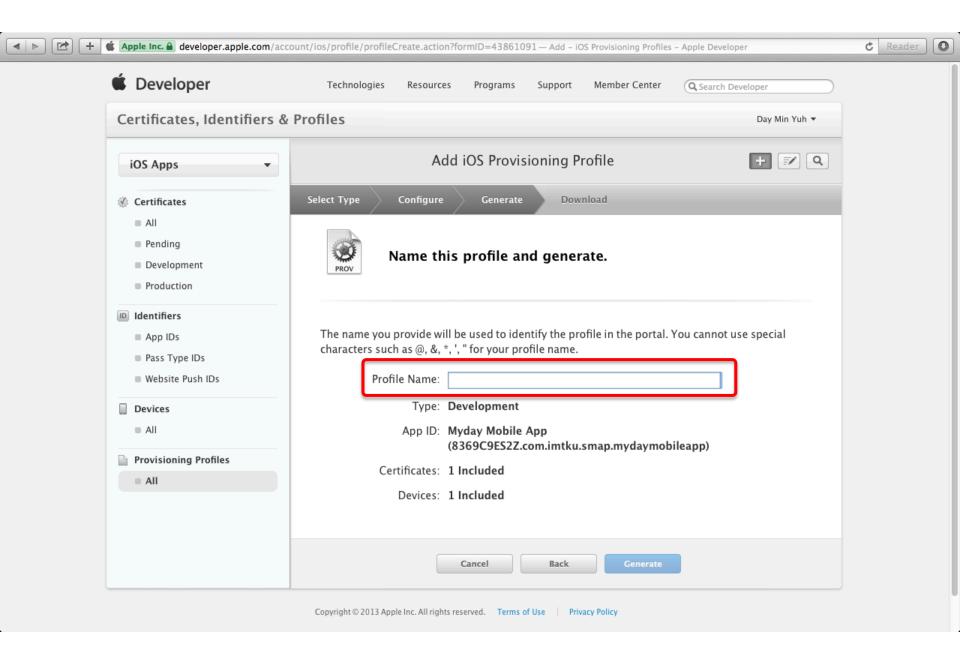


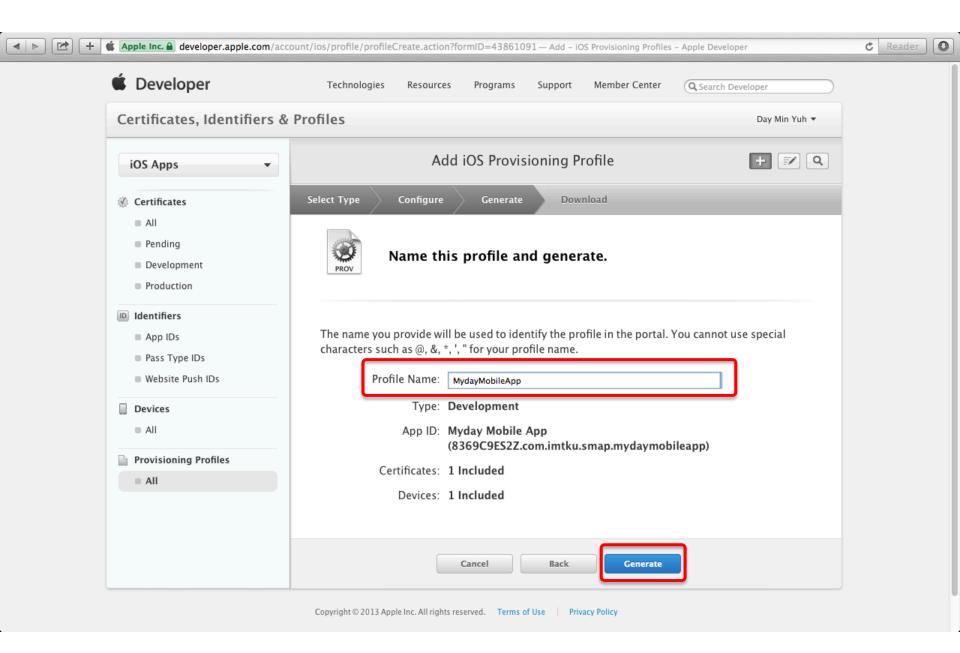
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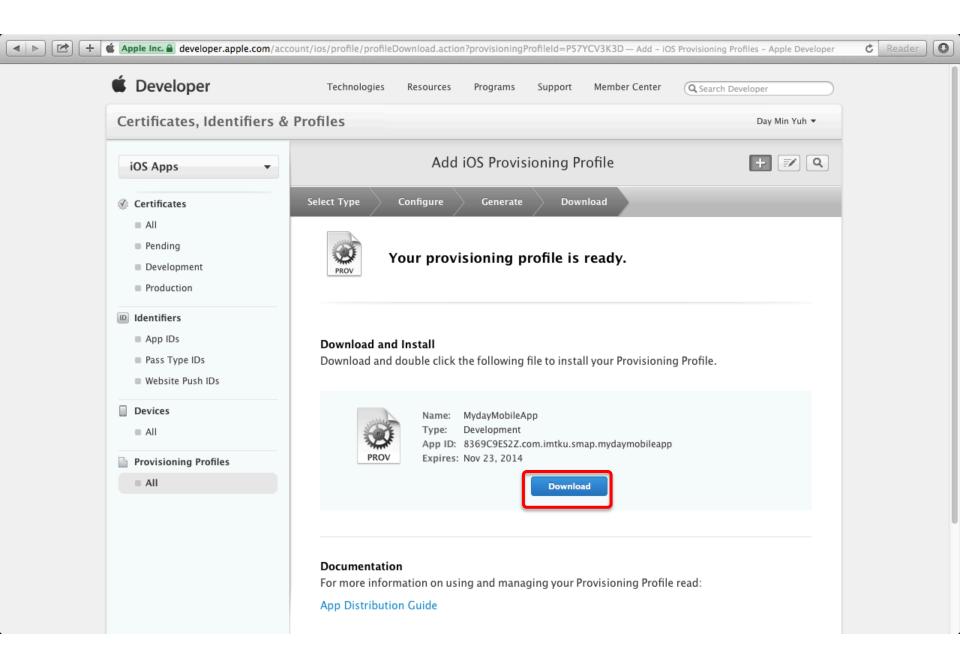




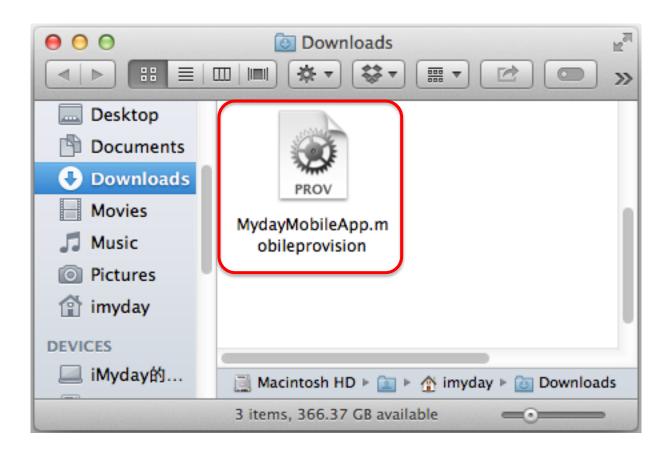


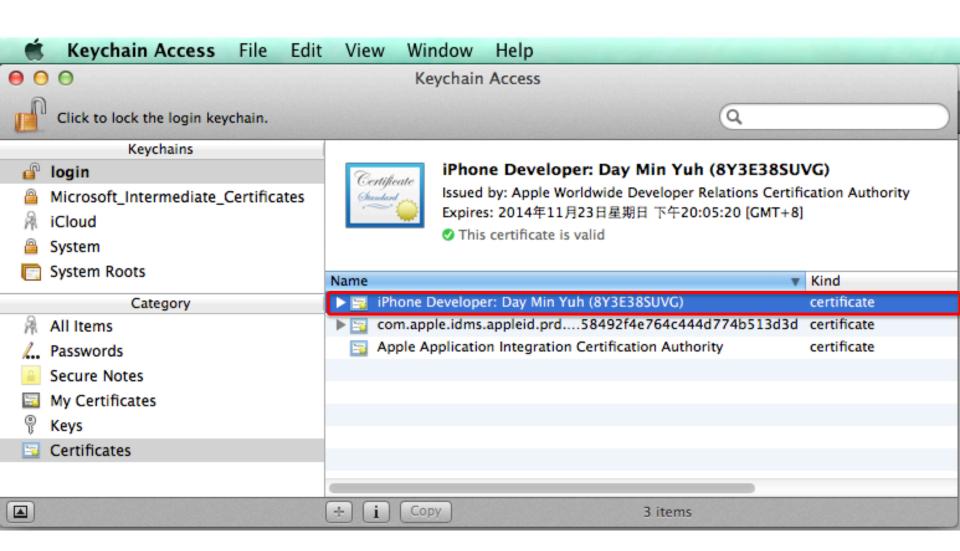


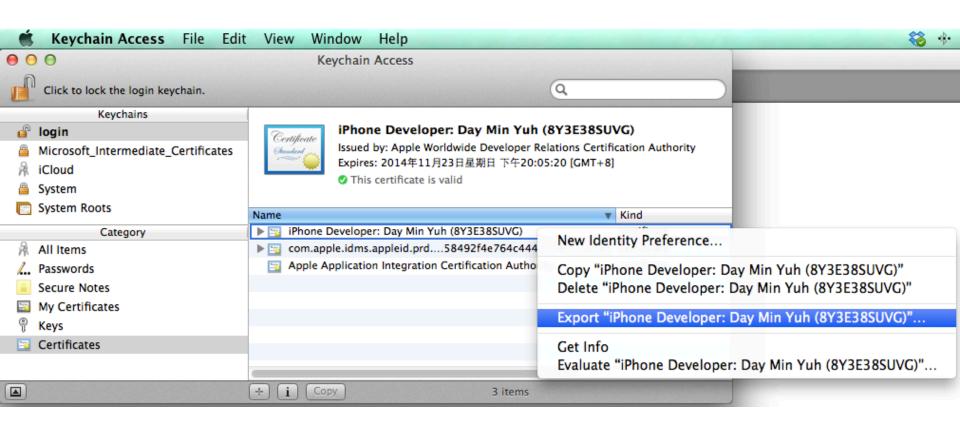




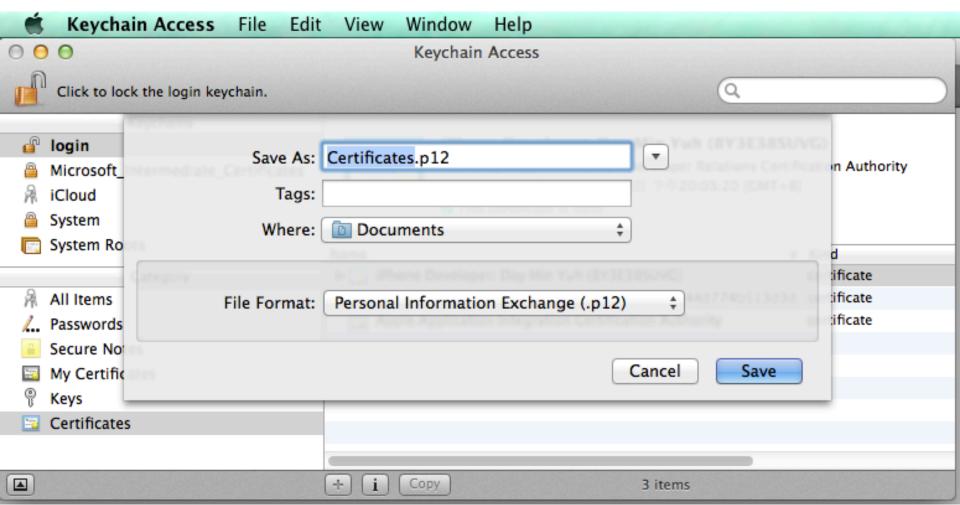
MydayMobileApp.mobileprovision

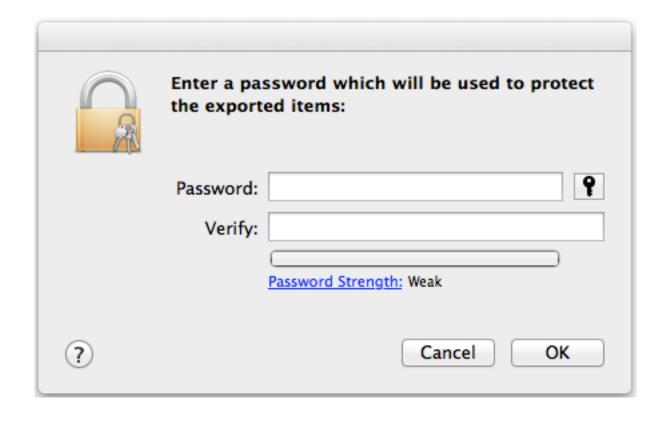






Certificates.p12

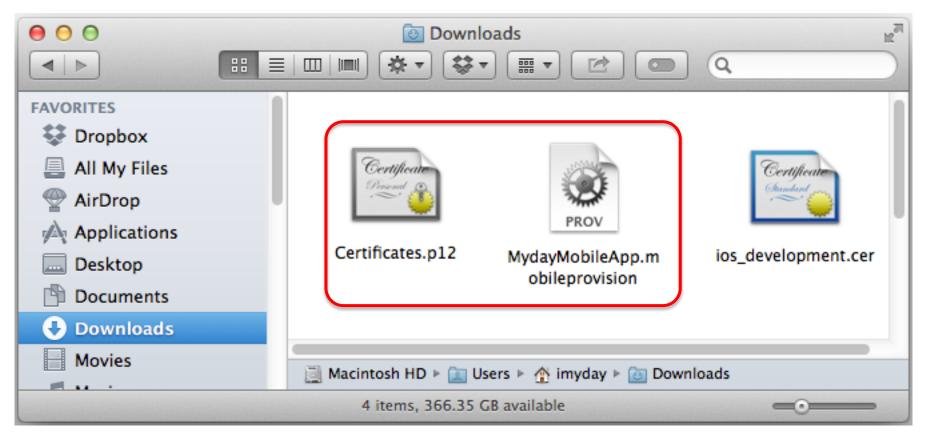


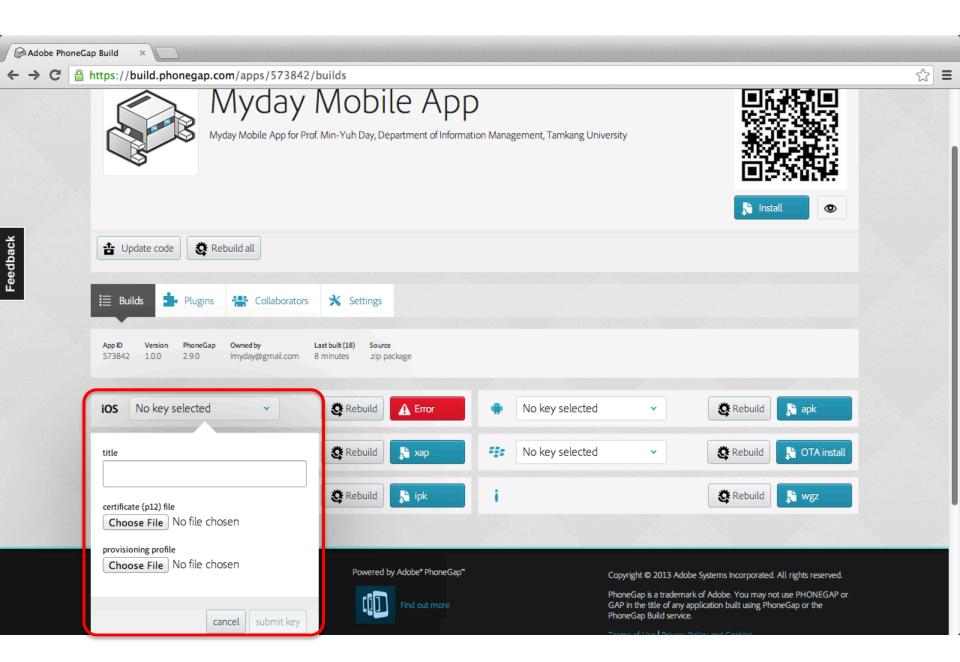




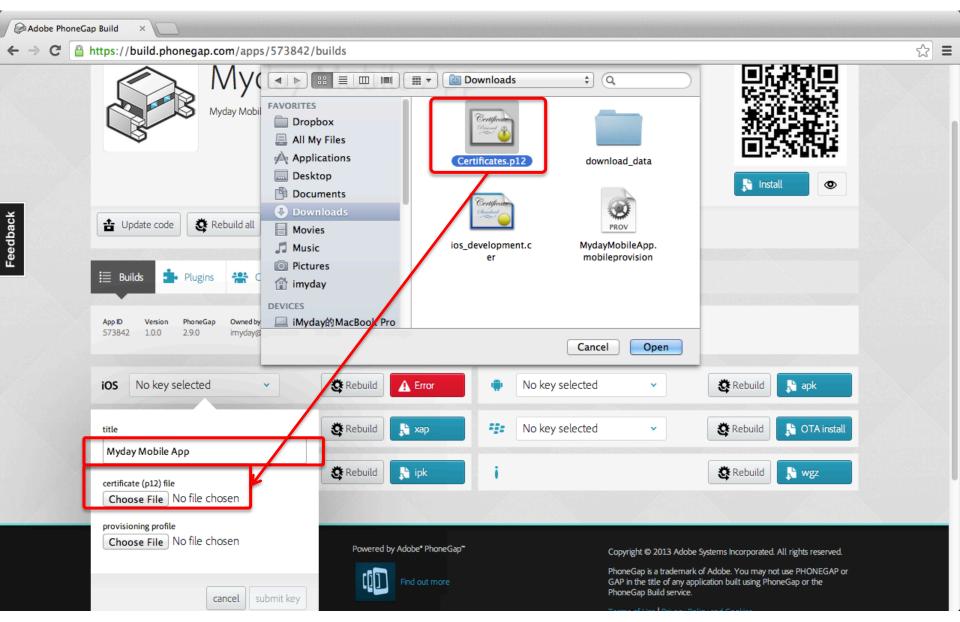


Certificates.p12 MydayMobileApp.mobileprovision

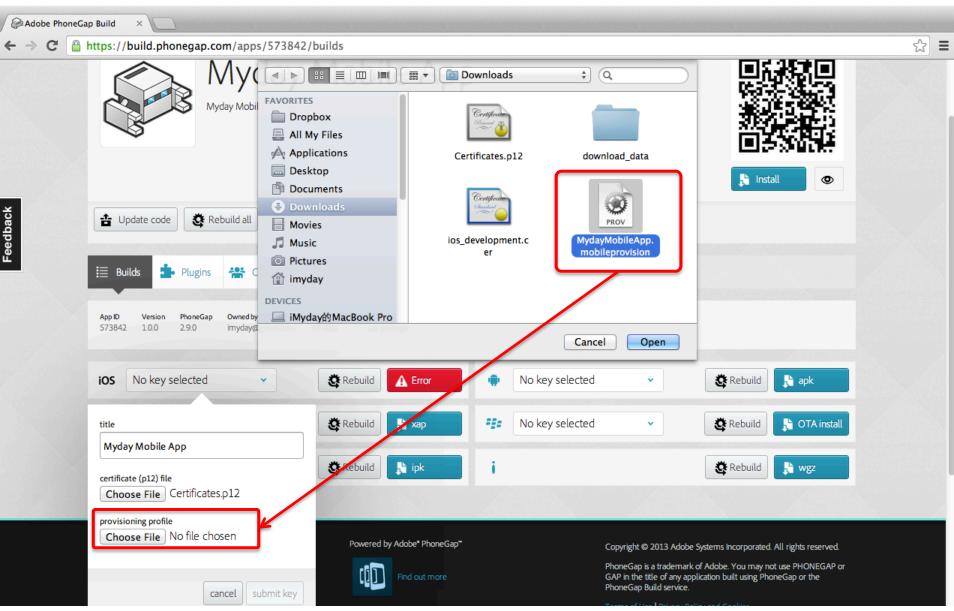


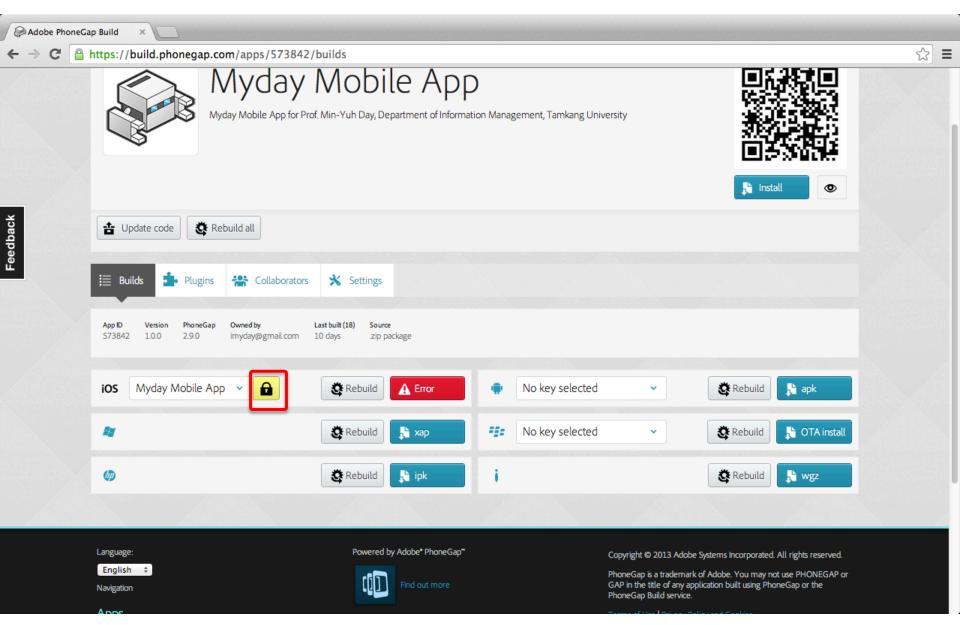


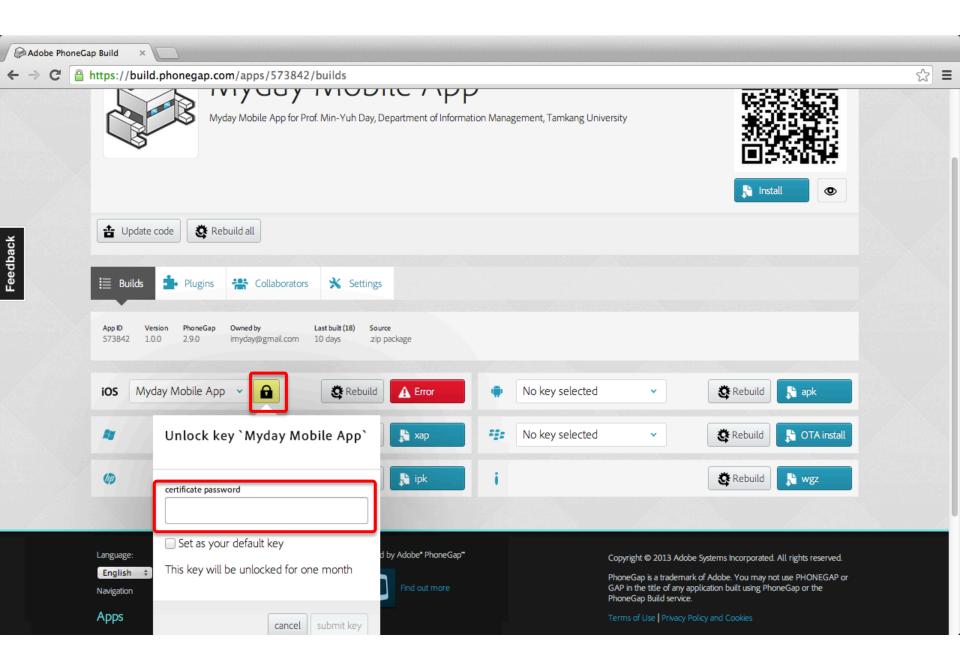
Certificates.p12

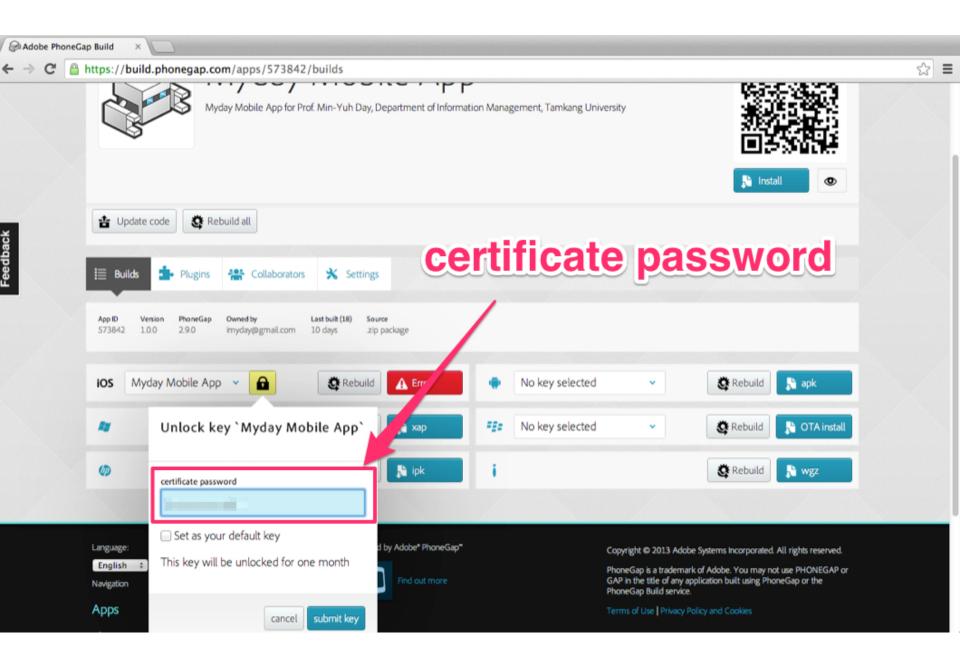


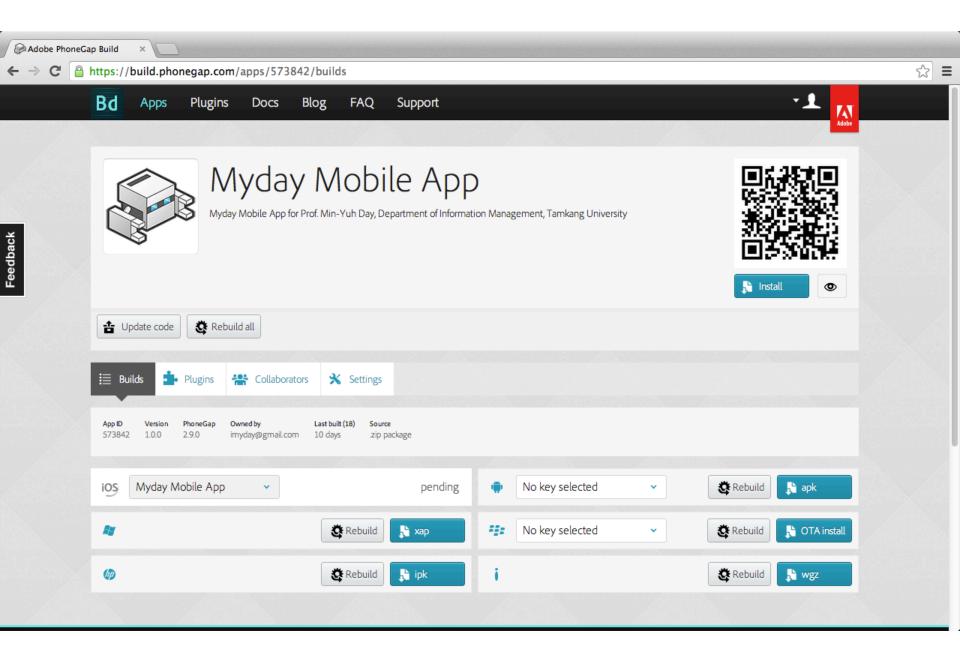
MydayMobileApp.mobileprovision

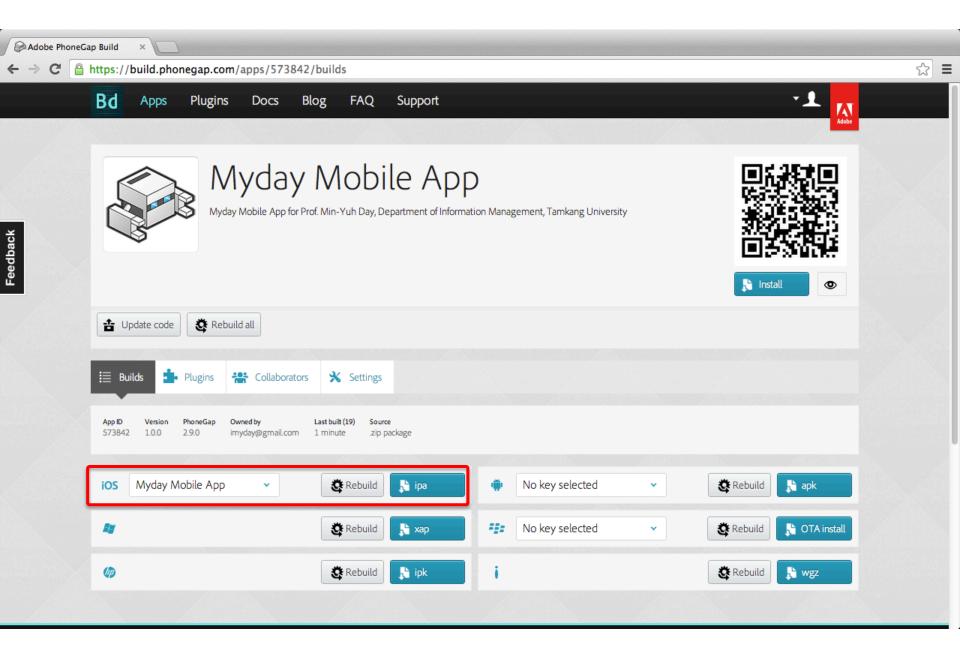




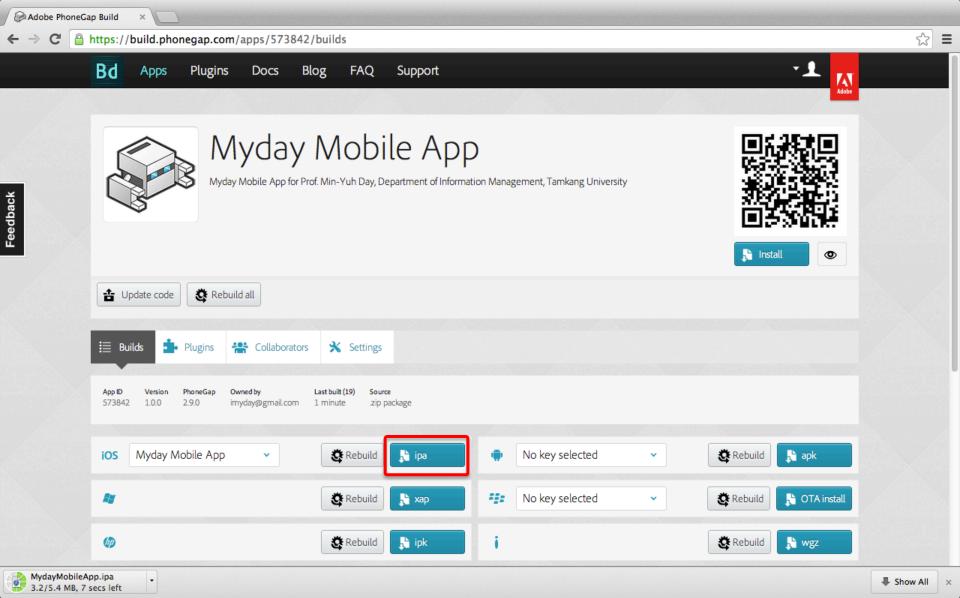


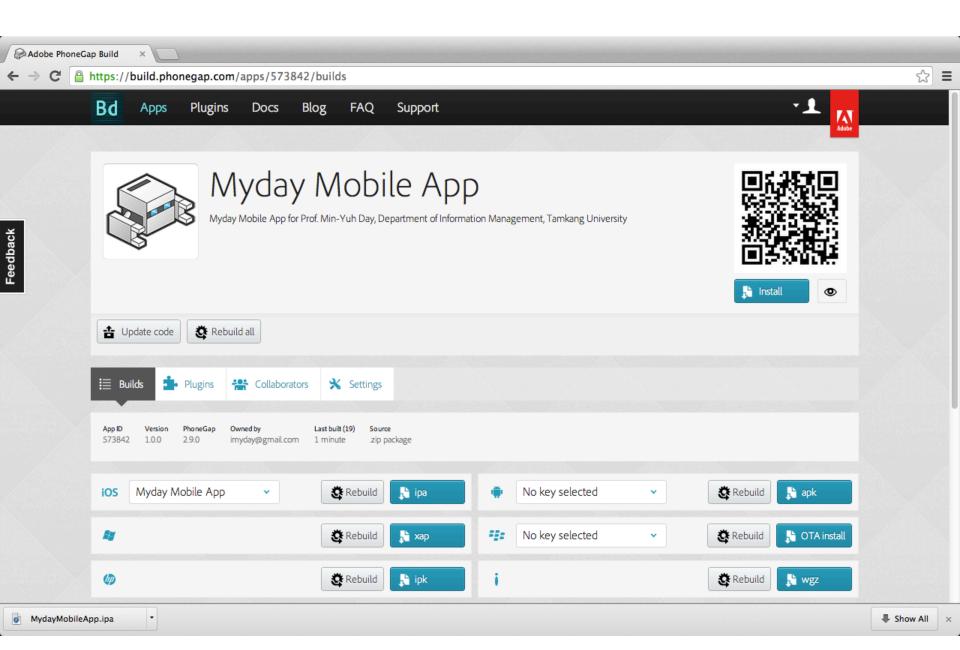




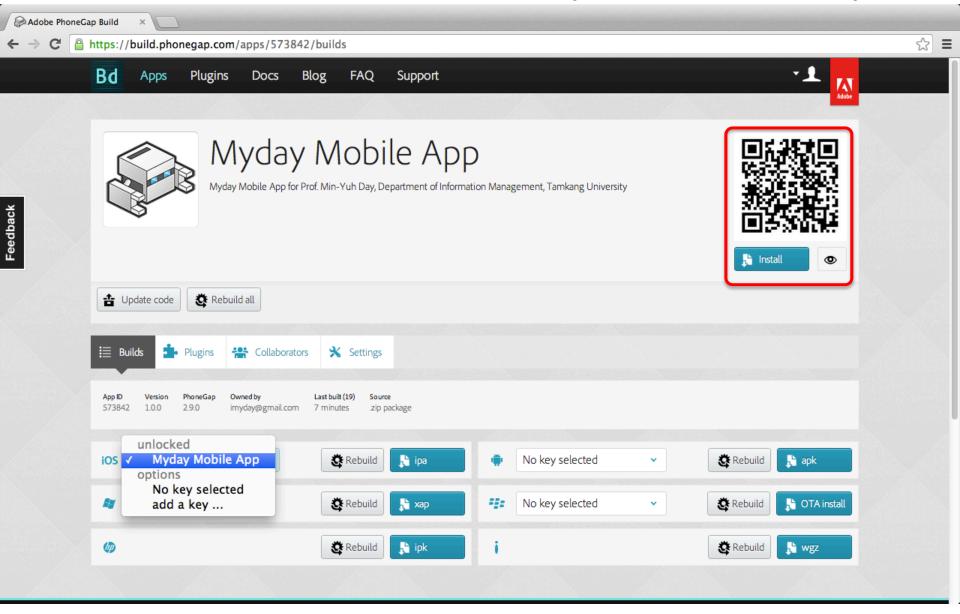


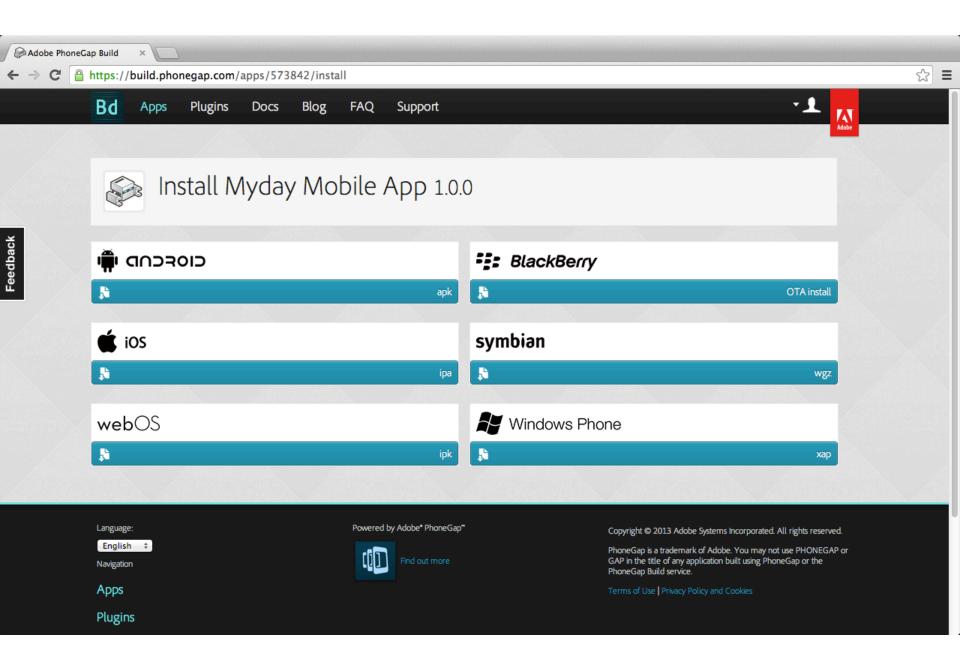
Download MydayMobileApp.ipa



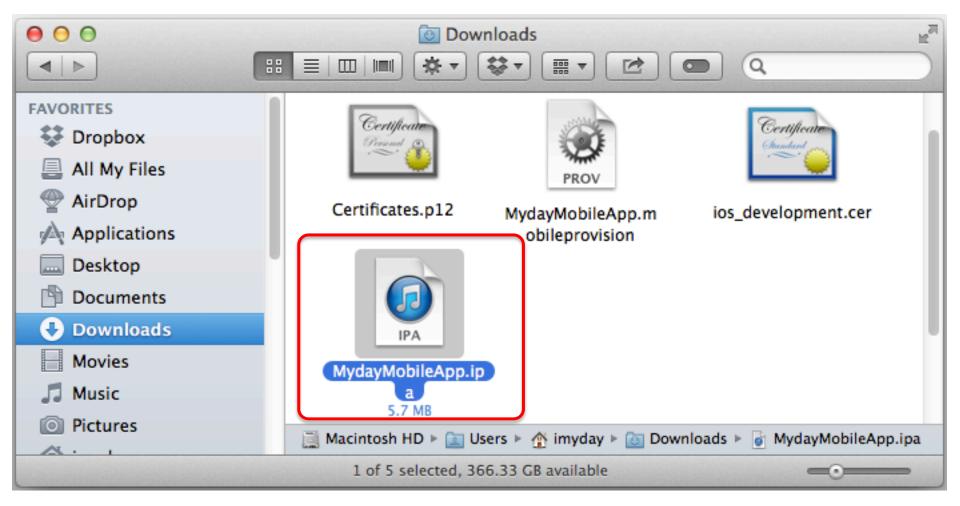


Install on iOS Devices (iPhone/iPAD)

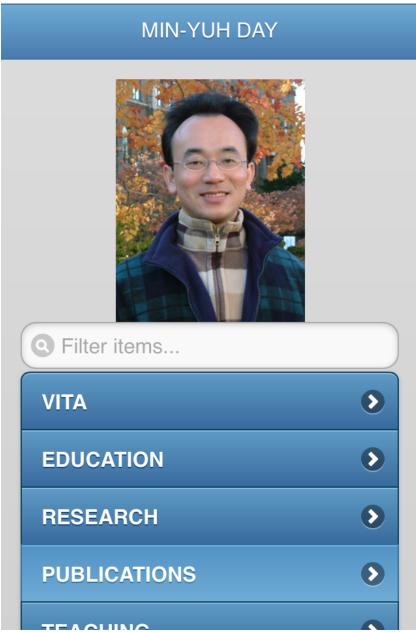


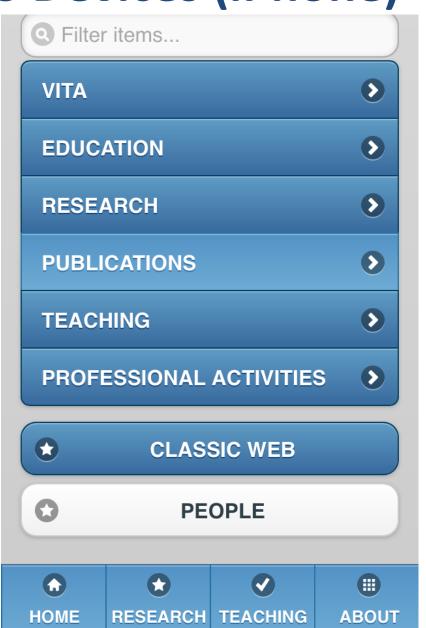


MydayMobileApp.ipa

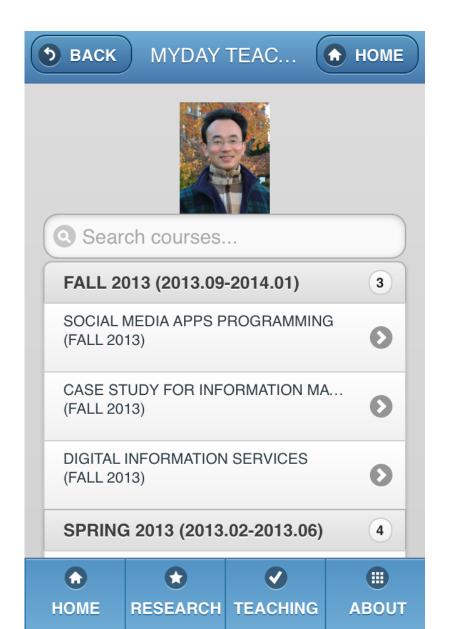


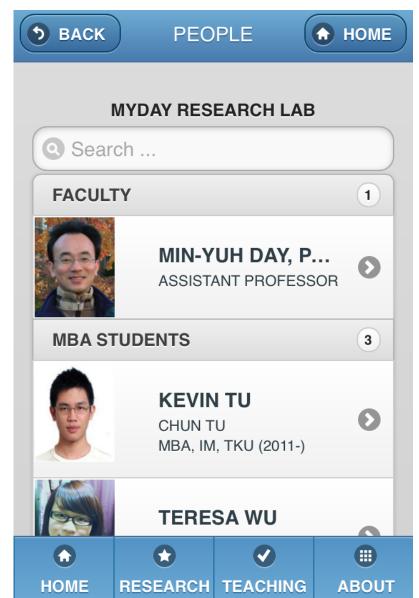
Test app.ipa on iOS Devices (iPhone)





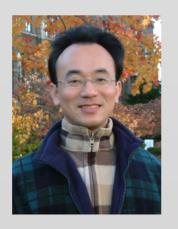
Test app.ipa on iOS Devices (iPhone)





Test app.ipa on iOS Devices (iPhone)





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EMAIL: MYDAY@MAIL.TKU.EDU.TW

WEB: HTTP://MAIL.TKU.EDU.TW/MYDAY/

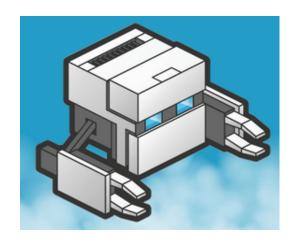
GOOGLE MAP



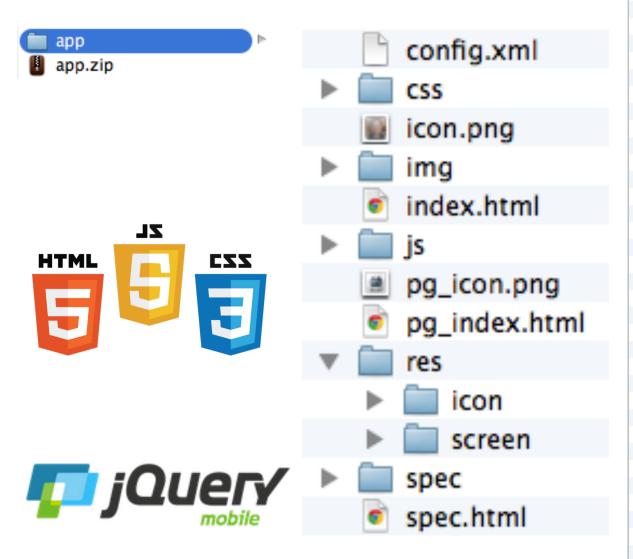
DemoTesting and Refining Your App

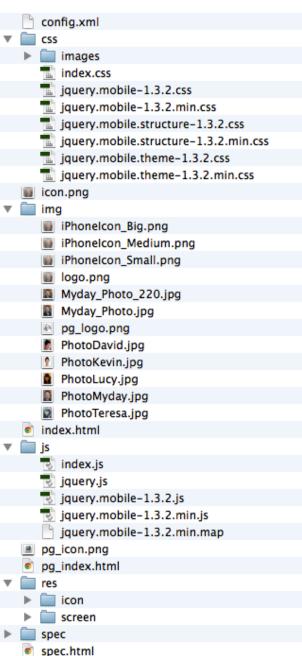
https://build.phonegap.com/





app.zip





text-transform:uppercase;

SOCIAL MEDIA

index.css

×

index.css



text-transform: none;

Social Media

```
23
    body {
24
         -webkit-touch-callout: none;
                                                     /* prevent callout to copy image, etc when tap to hold */
25
         -webkit-text-size-adjust: none;
                                                     /* prevent webkit from resizing text to fit */
26
         -webkit-user-select: none:
                                                     /* prevent copy paste, to allow, change 'none' to 'text' */
27
         background-color: #E4E4E4:
         background-image:linear-gradient(top, #A7A7A7 0%, #E4E4E4 51%);
28
         background-image:-webkit-linear-gradient(top, #A7A7A7 0%, #E4E4E4 51%);
29
         background-image:-ms-linear-gradient(top, #A7A7A7 0%, #E4E4E4 51%);
30
         background-image:-webkit-gradient(
31
32
             linear,
33
            left top,
34
            left bottom,
35
             color-stop(0, #A7A7A7),
36
             color-stop(0.51, #E4E4E4)
37
         );
         background-attachment:fixed;
         font-family: 'HelveticaNeue-Light', 'HelveticaNeue', Helvetica, Arial, sans-serif;
39
40
         font-size:12px;
41
         height: 100%;
         margin:0px;
42
         padding:0px:
43
         text-transform:uppercase;
44
45
         Width: 100%;
                                 <!--PhoneGap-->
46
                                      <link rel="stylesheet" type="text/css" href="css/index.css" />
                                                      app ▶ index.css
                                                                                                              134
```

text-transform:uppercase;

SOCIAL MEDIA

index.css

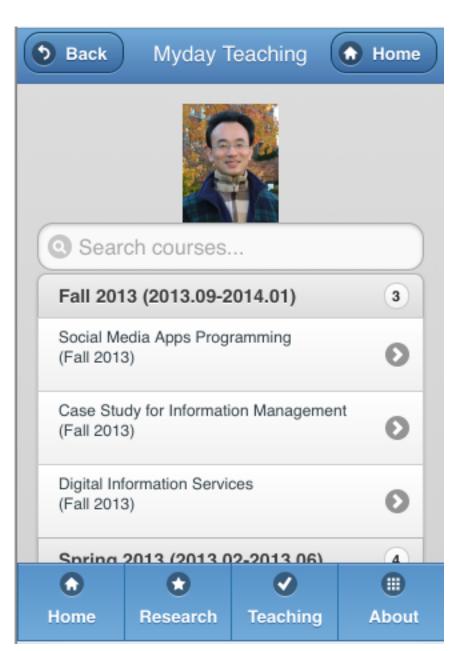
index.css

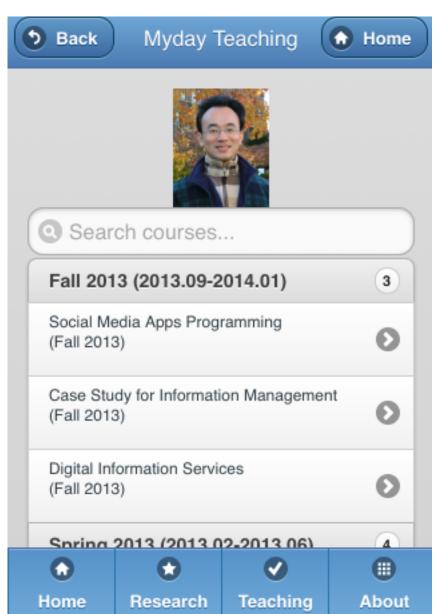


text-transform: none;

Social Media

```
23
    body {
24
         -webkit-touch-callout: none;
                                                    /* prevent callout to copy image, etc when tap to hold */
         -webkit-text-size-adjust: none;
                                                    /* prevent webkit from resizing text to fit */
26
         -webkit-user-select: none;
                                                     /* prevent copy paste, to allow, change 'none' to 'text' */
27
         background-color: #E4E4E4;
28
         background-image:linear-gradient(top, #A7A7A7 0%, #E4E4E4 51%);
29
         background-image:-webkit-linear-gradient(top, #A7A7A7 0%, #E4E4E4 51%);
30
         background-image:-ms-linear-gradient(top, #A7A7A7 0%, #E4E4E4 51%);
31
         background-image:-webkit-gradient(
32
             linear.
33
             left top,
34
             left bottom,
35
             color-stop(0, #A7A7A7),
36
             color-stop(0.51, #E4E4E4)
37
         );
         background-attachment:fixed;
38
         font-family: 'HelveticaNeue-Light', 'HelveticaNeue', Helvetica, Arial, sans-serif;
39
         font-size:12px:
40
         height: 100%;
41
         margin:0px;
42
         padding:0px:
43
        text-transform:none;
44
         width:100%;
45
                                 <!--PhoneGap-->
46
                                      <link rel="stylesheet" type="text/css" href="css/index.css" />
                                                      app ▶ index.css
```





phonegap.js

Removing Unnecessary Files

Once you've included the necessary assets, remove the phonegap.js (cordova.js) as Build will automatically inject it during compile time.

Why must you delete the phonegap.js?

PhoneGap requires a different JavaScript file for each platform and using an incompatible phonegap.js will result in errors when running your application.

Making Sure You can Still Access the PhoneGap API

Once you've deleted the phonegap.js you'll need to make sure that your application can still access the PhoneGap API.

To do so, simply ensure that the following reference is made in your index.html

<script src="phonegap.js"></script>

Usage and Additional Information:

Unless otherwise specified in a config.xml, each platform will try to use the default splash.png during compilation. To define platform specific splash screens please use the guide provided below.

Splash files should be the file formats specified in the examples below. Any other file type is not guaranteed to work across platforms.

Warning:

If you do not supply the gap:platform attribute, the referenced image will be copied to ALL platforms, increasing the size of their application packages.

Default

The default splash must be named splash.png and must reside in the root of your application folder.

```
<gap:splash src="splash.png" />
```

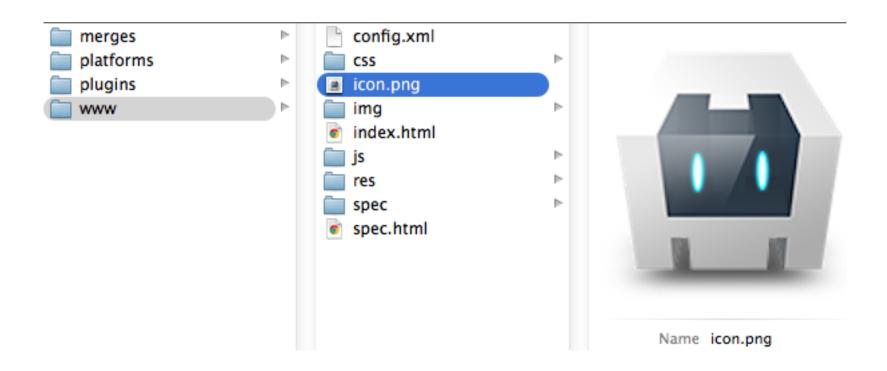
iOS

We support classic, retina, iPhone 5 and iPad displays; the following will define splash screens for each of those. Standard iPads have two different splash screens, portrait, landscape. Retina iPads have two additional splash screens, retina portrait and retina landscape (PhoneGap 2.5.0+ only).

```
<gap:splash src="splash/ios/Default.png" gap:platform="ios" width="320"
height="480" />
```



icon.png (128x128)



<icon src="icon.png" />



logo.png (172x200)

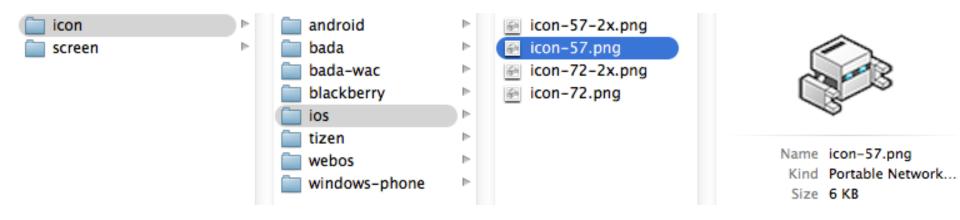


icon/ios/icon-57.png (57x57)

config.xml

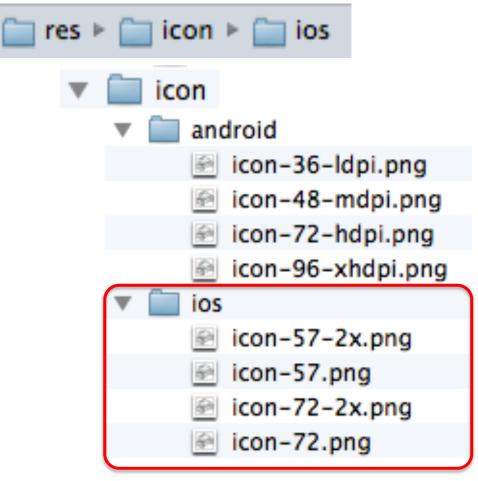
```
<icon src="icon.png" />
<icon gap:density="ldpi" gap:platform="android" src="res/icon/android/icon-36-ldpi.png" />
<icon gap:density="mdpi" gap:platform="android" src="res/icon/android/icon-48-mdpi.png" />
<icon gap:density="hdpi" gap:platform="android" src="res/icon/android/icon-72-hdpi.png" />
<icon gap:density="xhdpi" gap:platform="android" src="res/icon/android/icon-96-xhdpi.png" />
<icon gap:platform="ios" height="57" src="res/icon/ios/icon-57.png" width="57" />
<icon gap:platform="ios" height="72" src="res/icon/ios/icon-72.png" width="72" />
<icon gap:platform="ios" height="114" src="res/icon/ios/icon-57-2x.png" width="114" />
<icon gap:platform="ios" height="144" src="res/icon/ios/icon-72-2x.png" width="144" />
</or>
```

icon/ios/icon-57.png (57x57)



```
<icon gap:platform="ios" height="57" src="res/icon/ios/icon-57.png" width="57" />
```

icon/ios/icon-57.png (57x57)



<icon gap:platform="ios" height="57" src="res/icon/ios/icon-57.png" width="57" />

Pixel density

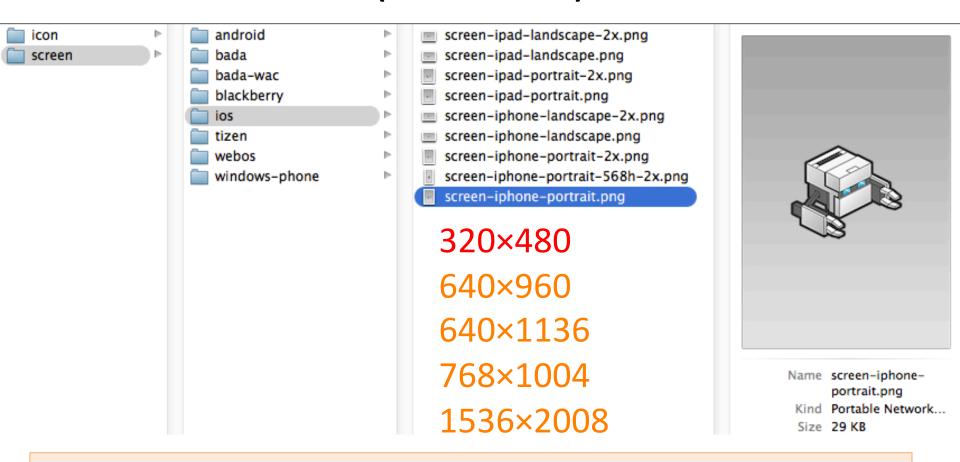
Resolution: 320x480 (2048x1536)

PPI: 64 (326)

Model	Generations	Diagonal cm (in)	Resolution	ppcm (PPI)
iPad	1st Gen, 2	25 (9.7)	1024×768	52 (132)
iPad / iPad Air	3rd Gen, 4th Gen	25 (9.7)	2048×1536	104 (264)
iPad Mini	2nd Gen	20 (7.9)	2048×1536	128 (326)
iPhone 3GS	3 / 3rd Gen	8.9 (3.5)	320×480	64 (163)
iPhone 4 / iPod Touch	4 / 4th Gen	8.9 (3.5)	960×640	128 (326)
iPhone 5S	5S / 6th Gen	10 (4)	1136×640	128 (326)



screen-iphone-portrait.png (320x480)

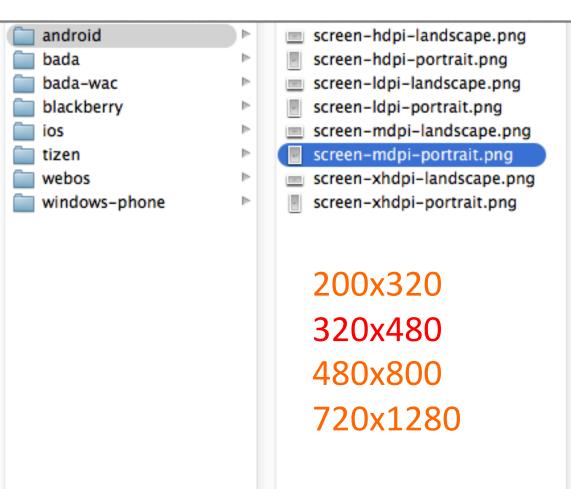


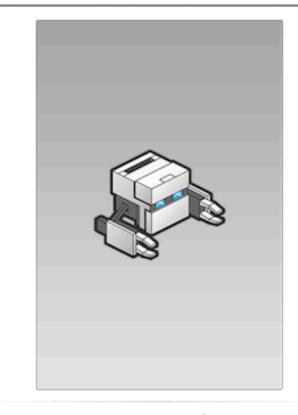
```
<gap:splash gap:platform="ios" height="480"
src="res/screen/ios/screen-iphone-
portrait.png" width="320" />
```



screen-mdpi-portrait.png

(320x480)





Name screen-mdpi-portrait.png
Kind Portable Network Graphics...

Size 29 KB

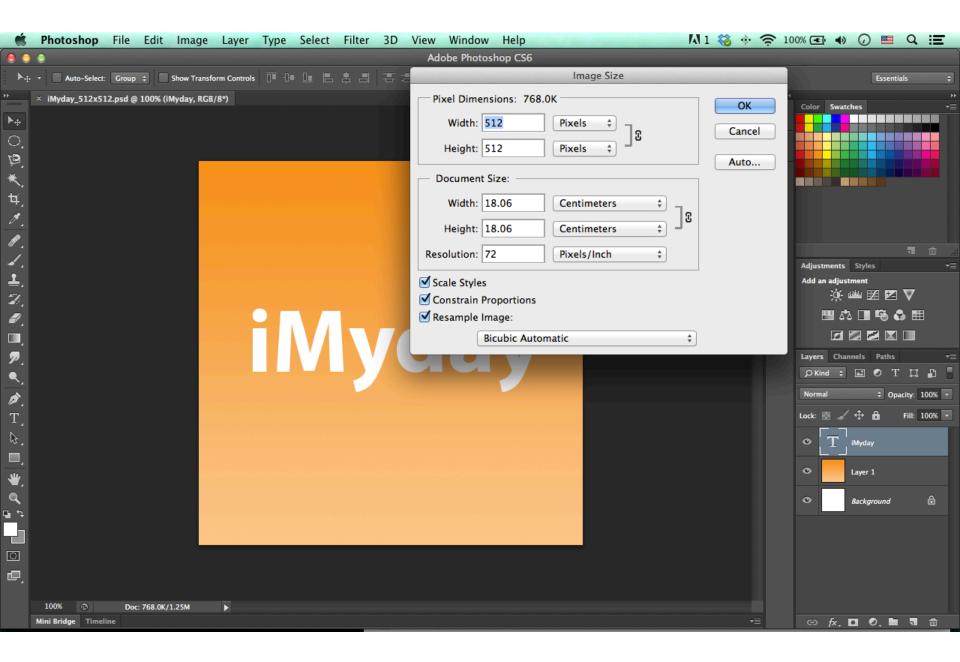
<gap:splash gap:density="mdpi" gap:platform="android"
src="res/screen/android/screen-mdpi-</pre>

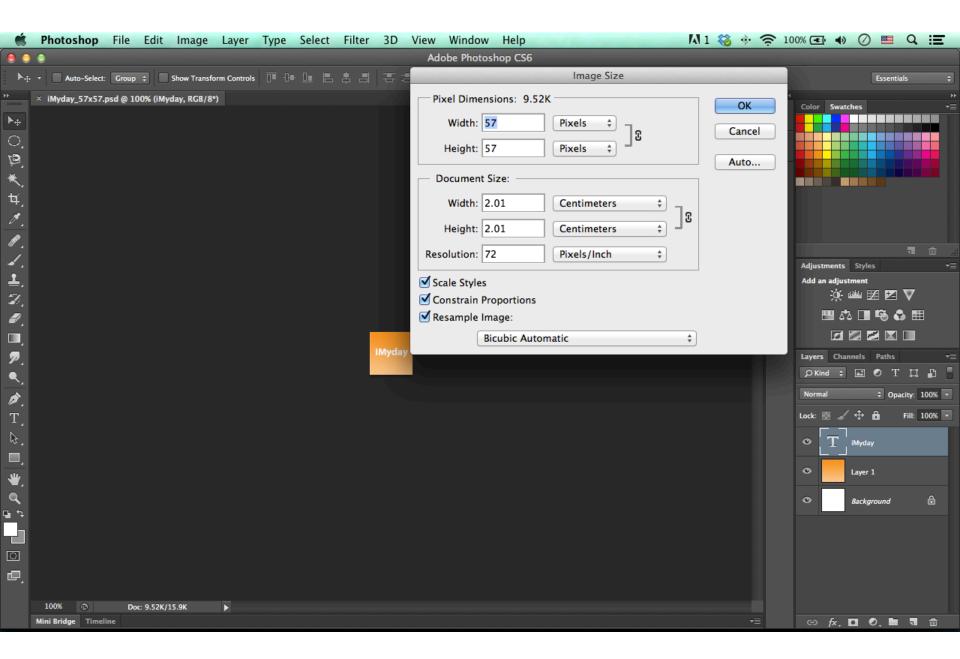


config.xml (part 3/3)

gap:splash

```
<qap:splash gap:density="ldpi" gap:platform="android"</pre>
src="res/screen/android/screen-ldpi-portrait.png" />
    <qap:splash gap:density="mdpi" gap:platform="android"</pre>
src="res/screen/android/screen-mdpi-portrait.png" />
    <qap:splash gap:density="hdpi" gap:platform="android"</pre>
src="res/screen/android/screen-hdpi-portrait.png" />
    <qap:splash gap:density="xhdpi" gap:platform="android"</pre>
src="res/screen/android/screen-xhdpi-portrait.png" />
    <gap:splash gap:platform="blackberry"</pre>
src="res/screen/blackberry/screen-225.png" />
    <gap:splash gap:platform="ios" height="480"</pre>
src="res/screen/ios/screen-iphone-portrait.png"
width="320" />
    <gap:splash gap:platform="ios" height="960"</pre>
src="res/screen/ios/screen-iphone-portrait-2x.png" width="640" />
    <gap:splash gap:platform="ios" height="1024"</pre>
src="res/screen/ios/screen-ipad-portrait.png" width="768" />
    <gap:splash gap:platform="ios" height="768"</pre>
src="res/screen/ios/screen-ipad-landscape.png" width="1024" />
    <qap:splash qap:platform="winphone" src="res/screen/windows-</pre>
phone/screen-portrait.jpg" />
    <access origin="http://127.0.0.1*" />
```



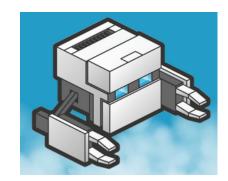


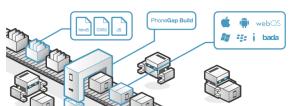
Summary

- jQuery Mobile/PhoneGap
 - HTML5, CSS3, JavaScript
 - jQuery Mobile
 - PhoneGap
 - PhoneGap Build
 - index.html, css, js, png
 - config.xml
- Demo
 - Create Hybrid Apps with PhoneGap
 - Testing iOS and Android Devices









References

- Beginning PhoneGap: Mobile Web Framework for JavaScript and HTML5, Rohit Ghatol & Yogesh Patel, Apress, 2012
- Learn HTML5 and JavaScript for iOS: Web Standards-based Apps for iPhone, iPad, and iPod touch, Scott Preston, Apress, 2012
- PhoneGap
 - http://phonegap.com/
- PhoneGap Build
 - https://build.phonegap.com/
- jQuery Mobile
 - http://jquerymobile.com/
- Introduction to PhoneGap Build
 - http://tv.adobe.com/watch/building-mobile-apps-with-phonegap-build/introduction-to-phonegap-build-building-your-first-app/