



Titanium Tutorial



Your instructors



Anonymous

Mysterious
Expert
Developer

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Program

- **What is Appcelerator Titanium?**
 - Finding resources
 - Setting up
- **What is Alloy?**
- **Build your first app**
 - Using LiveView or TiShadow
 - Step by step assignments
- **What's next?**



Who are they and what is..



Founded
In **2007**

Mountain View

London
Tokyo
Beijing

150
Employees

\$50M

Mayfield,
Translink, Storm,
Sierra, eBay, Red
Hat



About Appcelerator

Gartner.

**Gartner 2013
Magic Quadrant**

Highest placement in
both vision and
execution thereof.

You've probably already used Titanium



675K

Developers



75K+

Apps



290M

Devices

ebay

pwc

PayPal

Z

CISCO

T

BED BATH &
BEYOND



citi

Michaels



Ray-Ban



FIVE
GUYS



vmware



21st



SMUCKER'S

AVIS



Safeguard
PROPERTIES



J.B. HUNT



American
Cancer
Society

SCOUT
mob

Native UI



Swift? We have Hyperloop!

OBJECTIVE-C

```
UITableView *myTableView = [[UITableView alloc] initWithFrame:CGRectZero  
style:UITableViewStyleGrouped];
```

SWIFT

```
let myTableView: UITableView = UITableView(frame: CGRectZero, style: .Grouped)
```



HYPERLOOP

```
var myTableView = new UITableView({ frame: CGRectZero(), style: UITableView.Grouped });
```

TITANIUM

```
var myTableView = Ti.UI.createTableView({ style: Ti.UI.TableView.GROUPED });
```





Resources

Where to get your information?

Resources

- appcelerator.com/developers
- docs.appcelerator.com
- tidev.io/resources
- ticonf.org
Worldwide community conferences
- appcelerator.meetup.com
Worldwide local meetups



Assignment

- Repeat after me:

“Titanium is Native”

- Bookmark
tidev.io/resources
- Find a local meetup
appcelerator.meetup.com



Set-up

Getting Ready!

What makes Titanium?

- NodeJS CLI
- SDK
- Titanium Studio (optional)
- Target platform SDKs



Assignment

- Sign up and [download Studio](#)
- Install Studio and its dependencies
 - JAVA, NodeJS, CLI, SDK
- Use the Platform Configuration Tool
- Create the **Classic / Default Project**
- Run in a simulator or device
- Investigate **Resources/app.js**



Alloy

Conventions vs Chaos

This might be confusing



Classic vs Alloy

CLASSIC: APP.JS

```
var win = Ti.UI.createWindow({backgroundColor:"white"});  
win.open();
```



ALLOY: INDEX.XML

```
<Alloy><Window id="win" /></Alloy>
```

ALLOY: INDEX.TSS

```
"#win": { backgroundColor: 'white' }
```



ALLOY: INDEX.JS

```
$.win.open();
```

Few more things

Widgets

Project Configuration File

Built-ins

Controller-less views

Sync adapters

Build Configuration File

Backbone.js

Themes

Underscore.js

Moment.js

Source Maps

Require

Dynamic Styling

Data-binding

Open Source Widgets*

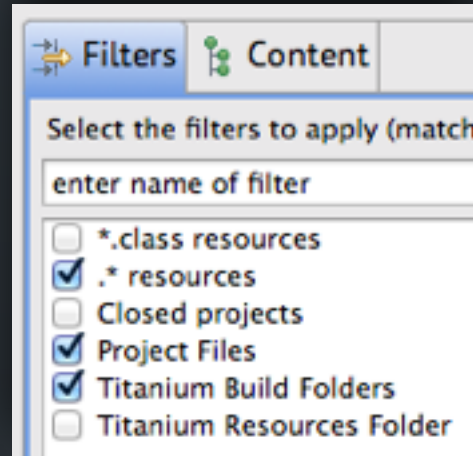
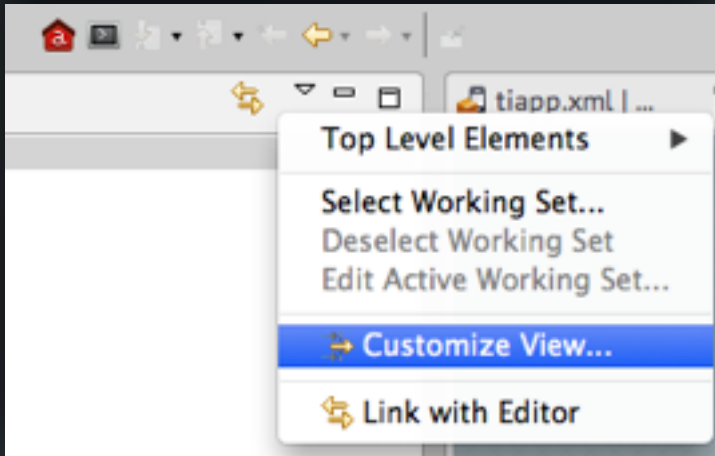
* And Modules



<http://gitt.io>

Assignment

- Create the **Two-tabbed Alloy Application**
- Run in a simulator or device
- Compare **index.xml/tss/js** with classic
- Unhide the Resources folder



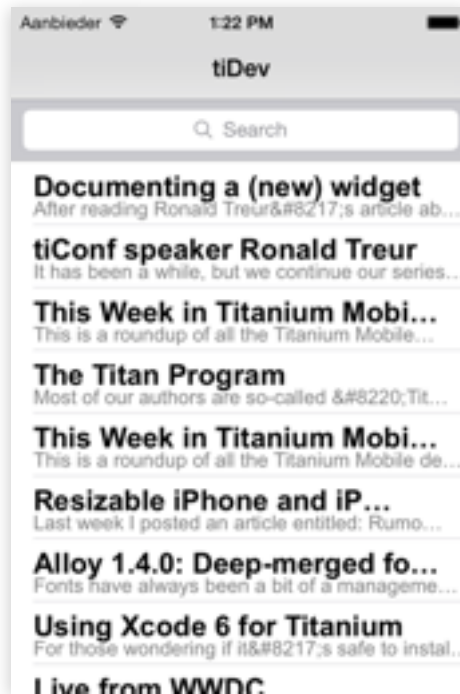
- Compare **app.js** & **iphone/alloy/controllers/index.js**



Zero to App

What you will build today

tiDev RSS reader

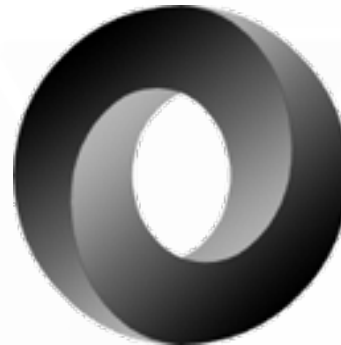


Ingredients

- JSON feed: tidev.io/feed?feed=json
- Repo: github.com/FokkeZB/Tutorial



vs



Assignment

- Import a clone of the [repository](#)
 - File > Import > Git > .. as New Project

Source Repository

Enter the URI of the source repo as it would normally follow the 'git clone' command.

GitHub

Username: Validate

Password: Signup...

☐ Github:

☒ URI:

Destination: Browse...

- Run the app
- Copy @Slides/slides.pdf to your Desktop



LiveView & TiShadow

Rapid Application Development




**“If you're not using TiShadow
in your Titanium projects, you
might be wasting hours per
week on builds. Love it.”**

@kevinwhinnery

Compile process

- Compiling for Alloy
- Compiling for Titanium
- Compiling for Xcode/Android
- Deploying to simulator/device
- Starting the app
- Running your code

Assignment

- If you have Appcelerator Studio, just toggle the LiveView button . Or using CLI:

```
~ $ ti build -p ios --liveview
```

- Install [TiShadow](#)

```
~ $ [sudo] npm install -g tishadow
```

- Run an app using CLI and TiShadow Express

```
~/Tutorial $ ti build -p ios --shadow
```

- Change **backgroundColor** to **red** and save





Window

Creating a Window

Views

- UI components are name-spaced **Ti.UI.***
- Most UI components extend [Ti.UI.View](#)
- Create components: **Ti.UI.create<View>()**
- In [Alloy](#) **<View>** ➤ **Ti.UI.create<View>()**
- XML attributes and TSS properties are merged and passed to the create-method.
- TSS can select by **tag**, **id** **or** **class**.
- JS can refer to **\$.<id>**

Classic vs Alloy

CLASSIC: APP.JS

```
var win = Ti.UI.createWindow({backgroundColor:"white"});  
win.open();
```



ALLOY: INDEX.XML

```
<Alloy><Window id="win" /></Alloy>
```

ALLOY: INDEX.TSS

```
"#win": { backgroundColor: 'white' }
```



ALLOY: INDEX.JS

```
$.win.open();
```

Assignment

- Reset any changes:

```
~/Tutorial $ git reset --hard
```

- Switch to **window** branch.

```
~/Tutorial $ git checkout window
```

- Run the app.
- Add a Label saying **Hello world**.
- Give the label a class.
- Use the class to make the color red.





ListView

Not the most easy component

ListViews

- Docs > Search: [guide: ListViews](#)
- Docs > Search: [UI.ListView](#)
- “Crossing the bridge” has a toll
- **ListView** vs [TableView](#)
- Alloy does most of the hard work

Assignment

- Study the [ListViews](#) guide.
- Compare the [API doc](#) classic & Alloy examples.
- Reset & Switch to the **listview** branch.
- Run the app.
- Try the first API doc Alloy example JS & TSS.
- Compare **Resources/iphone/alloy/controllers/index.js** with the classic examples.
- Remove the blank icons, align the text left, reduce the sections to one and remove the [headerTitle](#) of that section.

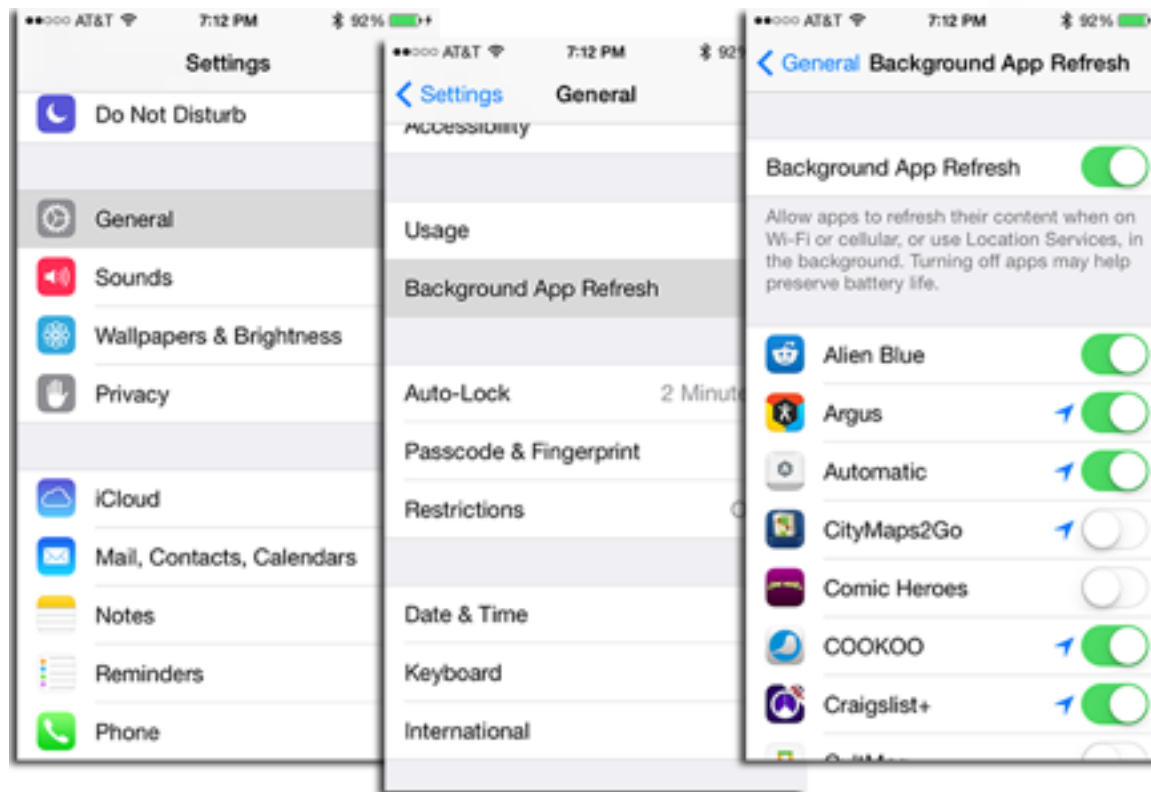


NavigationWindow

Stacking Windows

NavigationWindow

- Docs > Search: [NavigationWindow](#)
- iOS only



Event Handling

- Docs > Search: [Alloy XML Markup](#)
- HTML-like **on[Event]** attribute

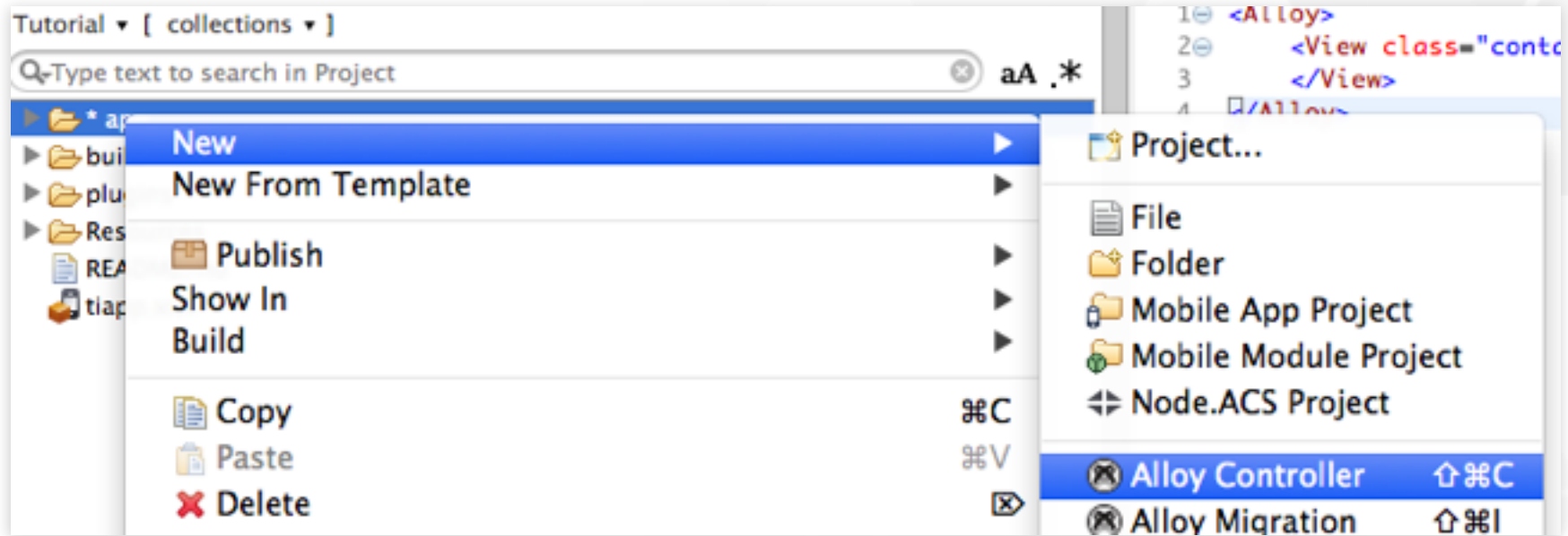
INDEX.XML

```
<Button onClick="talkToMe" />
```

INDEX.JS

```
function talkToMe(e) {  
    alert("hello world");  
}
```


Creating Controllers



`~/Tutorial $ alloy generate controller detail`

Using Controllers

- Use [<Require>](#) to create + add in XML
- Use [Alloy.createController](#) in JS

INDEX.XML

```
<Window id="win">  
  <Require src="detail" />  
</Window>
```

INDEX.JS

```
var detailController = Alloy.createController('detail');  
var rootView = detailController.getView();  
$.win.add(rootView);
```

Assignment

- Study the [NavigationWindow](#) API docs.
- Reset & Switch to the **navwin** branch and run it.
- Wrap the **Window** in a **NavigationWindow**
For Android add **module="xp.ui"** attribute.
- Add an [itemclick](#) listener to the ListView.
- [Create](#) a new **detail** controller and make it a Window. Give both windows a title.
- On click, [create](#) a detail controller instance and [open](#) the window via NavigationWindow.
- Study **lib/xp.ui.js**. What happens on Android?



Collections

Models with brains

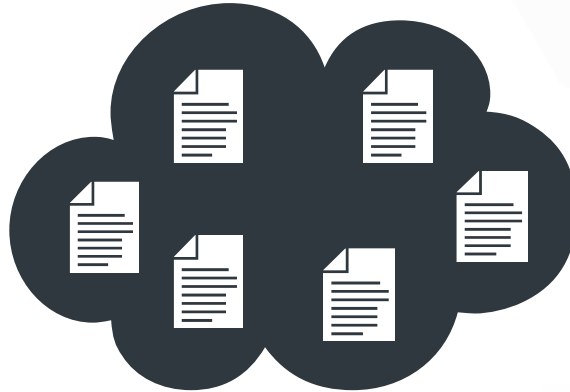
BACKBONE.JS



STORAGE



SYNC ADAPTER



COLLECTION



BINDINGS

Ti.UI

VIEWS



EVENTS



- Docs > Search: [Alloy Models](#)
 - **Note:** Older version (0.9.2)
- In Titanium JS has no DOM
- Instantiate a global collection:
Collection tag
- [Bind](#) a collection to a loop-able view:
dataCollection attribute
- Bind a model attribute to a child view property:
{<attribute>} value

Assignment

- Study the [Alloy Data Binding guide](#).
- Reset & Switch to the **collections** branch and run it.
- Bind the **feed** collection to the **ListSection** so that the list is populated showing the **title** and **excerpt** of the items.
- Study **models/feed.js** and **lib/alloy/sync/json.js**. How do they work? And why that second path?



WebView

Titanium > Phonegap

WebView

- Docs > Search: [guide: Communication](#)
- Docs > Search: [UI.WebView](#)
- Display local, remote and “inline” HTML
- Communicate via events and [evalJS](#)
- Displaying formatted text native is [complex](#)
- Displaying HTML in WebView is easy :)

Assignment

- Study the [WebView](#) docs.
- Reset & Switch to **webview** branch and run it.
- Study **index.xml** to see how we expose the id of the model via [itemId](#).
- Pass the model to the detail controller.
- Add a WebView to the detail Window and use the model to populate it.
- Use the model to set the **title** of the detail Window.

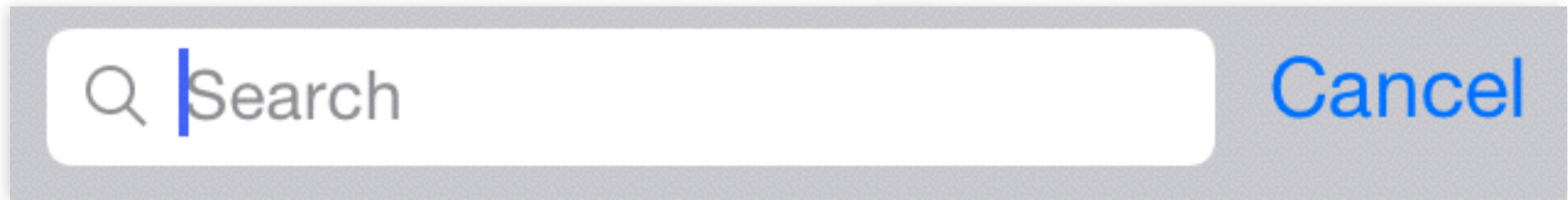


SeachBar

Filtering our feed

SearchBar

- Docs > Search: ListViews > [Search Text and View](#)
- Docs > Search: [UI.ListView](#) (last examples)
- Docs > Search: [UI.SearchBar](#)



- **ListView.searchView** works together with **ListView.searchText** & **ListItem.searchableText**

Assignment

- Study the last two [ListView](#) examples.
- Reset & switch to **searchbar** and run it.
- Add a [SearchBar](#) (also for Android) to the list to search on the **excerpt**.
- If you have time left, try to search on the **content**, after using the [dataTransform](#) attribute to remove HTML tags from it.

HINT: [Google](#) is your friend.



Artwork

Density Hell

NON-RETINA



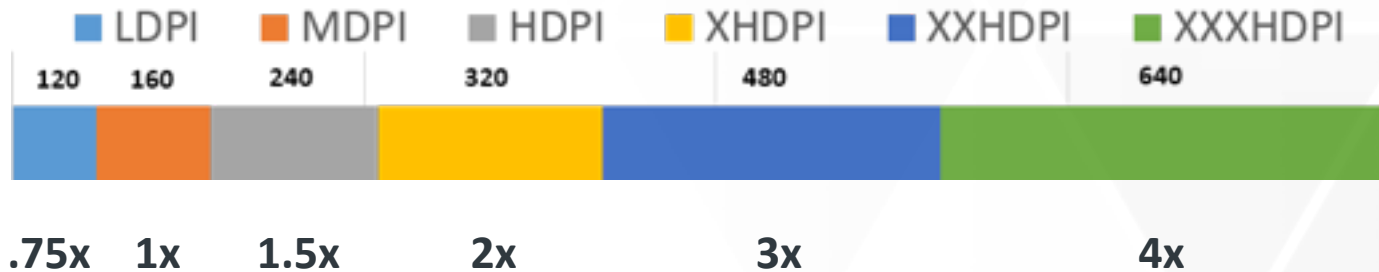
RETINA (2X)



RETINA HD (3X)



Android DPI Categories



Icons & Splashes



IOS Device	Purpose	Dimensions	DPI	File name	Titanium folder location
iPhone 4/4S/5/5C/5S/6 iPod touch 5th generation	App icon	120 x 120	72	appicon-60@2x.png	Resources or Resources/iphone
iPhone 6 Plus	App icon	180 x 180	72	appicon-60@3x.png	Resources or Resources/iphone
iPad non-retina	App icon	76 x 76	72	appicon-76.png	Resources or Resources/iphone
iPad retina	App icon	152 x 152	72	appicon-76@2x.png	Resources or Resources/iphone
Universal non-retina	Spotlight	40 x 40	72	appicon-Small-40.png	Resources or Resources/iphone
Universal retina	Spotlight	80 x 80	72	appicon-Small-40@2x.png	Resources or Resources/iphone
Universal non-retina	Settings	29 x 29	72	appicon-Small.png	Resources or Resources/iphone
Universal retina	Settings	58 x 58	72	appicon-Small@2x.png	Resources or Resources/iphone
iPhone 6 Plus	Settings	87 x 87	72	appicon-Small@3x.png	Resources or Resources/iphone
iPhone 4/4S	Splash screen	640 x 960	72	Default@2x.png	Resources or Resources/iphone
iPhone 5/5C/5S iPod touch 5th generation	Splash screen	640 x 1136	72	Default-568h@2x.png	Resources or Resources/iphone
iPhone 6	Splash screen	750 x 1334	72	Default-667h@2x.png	Resources or Resources/iphone
iPhone 6 Plus landscape	Splash screen	2208 x 1242	72	Default-Landscape-736h@3x.png	Resources or Resources/iphone
iPhone 6 Plus portrait	Splash screen	1242 x 2208	72	Default-Portrait-736h@3x.png	Resources or Resources/iphone
iPad non-retina landscape	Splash screen	1024 x 768	72	Default-Landscape.png	Resources or Resources/iphone
iPad non-retina portrait	Splash screen	768 x 1024	72	Default-Portrait.png	Resources or Resources/iphone
iPad retina landscape	Splash screen	2048 x 1536	72	Default-Landscape@2x.png	Resources or Resources/iphone
iPad retina portrait	Splash screen	1536 x 2048	72	Default-Portrait@2x.png	Resources or Resources/iphone
Any device with a non-retina display for ad-hoc builds	App list in iTunes	512 x 512	72	iTunesArtwork (no ext)	Resources or Resources/iphone
Any device with a retina display for ad-hoc builds	App list in iTunes	1024 x 1024	72	iTunesArtwork@2x (no ext)	Resources or Resources/iphone

Platform & Density specific folders

```
assets/some_dir/some.file  
assets/android/some_dir/some.file  
assets/iphone/some_dir/some.file
```

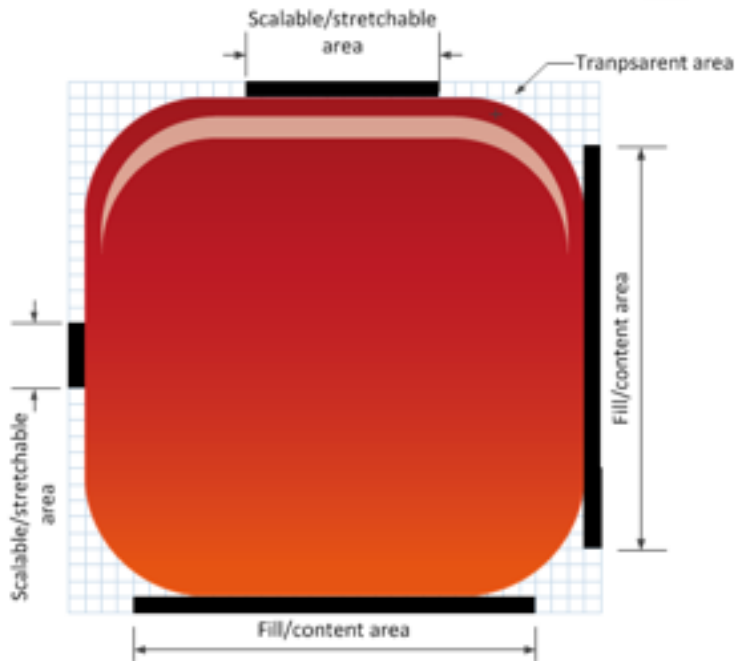
```
assets/android/images/res-xhdpi/some.file  
  
platform/android/res/drawable-xhdpi/some.file  
platform/android/res/drawable-nl-port-xhdpi/some.file
```

```
assets/iphone/images/image@2x.png  
assets/iphone/images/image@3x.png  
assets/images/image.png  
assets/android/images/res-mdpi/image.png  
assets/android/images/res-xhdpi/image.png  
assets/android/images/res-xxhdpi/image.png
```



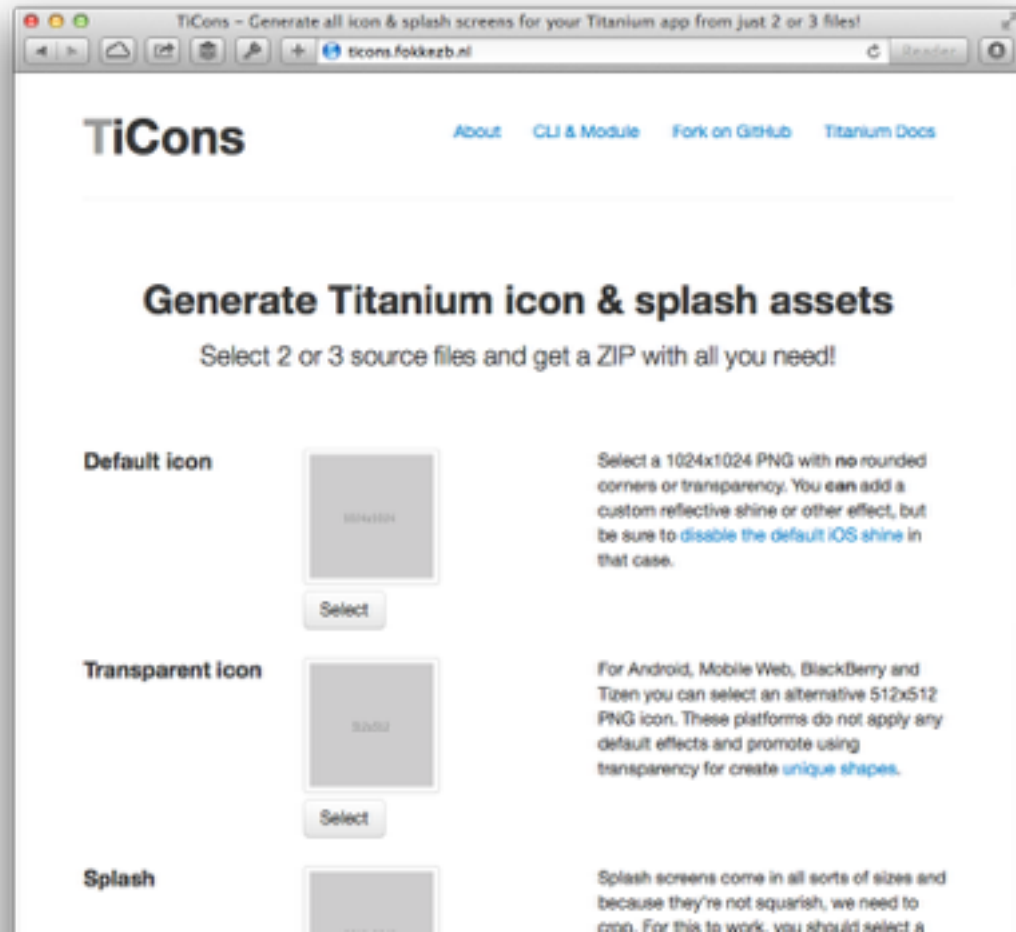
**BEST
PRACTICE**

Android 9-Patch



No more handwork

```
~ $ [sudo] npm install -g ticons
```

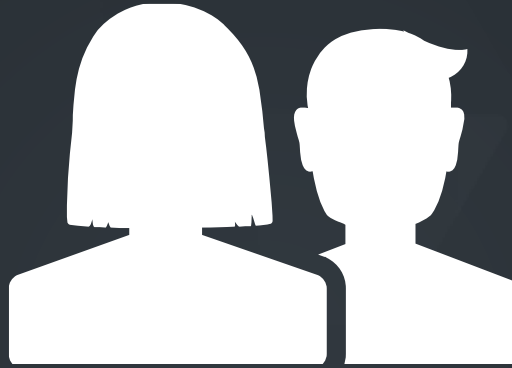


Assignment

- Study the [Icons and Splash Screens guide](#)
- Install the ticons [CLI](#) or visit the [site](#).

```
~ $ [sudo] npm install -g ticons
```

- Reset & Switch to **artwork** branch and run it.
- Generate icons and splashes using the CLI or site on the **logo.png** image.
- For splashes, find out how to prevent the logo from being cropped.



You are a TiDev now!



What's next?

Join the community

Join the community

- Follow [@AppcDev](#) & [@TiDevIO](#).
- Follow your instructors ;)
- Find a local Titanium Meetup on [DevMap](#).
- Go to a [tiConf](#) on your continent.
- Find help on the [Q&A](#).
- Find widgets & modules on [gitTio](#).
- Share your libraries & widgets on GitHub.

Get certified



training.appcelerator.com/get-certified



Thank you!



Bonus Assignment

- Reset & Switch to **master** branch and run it.
- Fine-tune the app! For example:
 - Replace the list title by the tiDev logo.
 - Add the date and category to the list view.
 - Add a button to open a blog in the browser.
 - Add a button for the user to share a blog.
 - Be creative!