

Adaptive iOS Design

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Motivation

- Novoda's design team's expertise is mostly in Android design
- Designing layout for iOS is radically different from designing layout for Android
- We need to bring the design team up to speed on designing for iOS
- Dave and Wagner have been working together towards that goal
- This H&T will also interest developers of both platforms



Layout Design for iOS: the problem

- Many devices, with varying sizes
- Many orientations
- Many adaptations

It's not practical to separately design, implement, and maintain all possible layout combinations for every screen of an app

Adaptations are distinct layout configurations for a particular device and orientation. More on them later.



Layout Design for iOS: the solution

- Positions and Sizes:

Proportional rather than **fixed**

- Behaviour:

Dynamic instead of **static**

It doesn't mean that everything needs to be proportional and dynamic.



Trait Collections

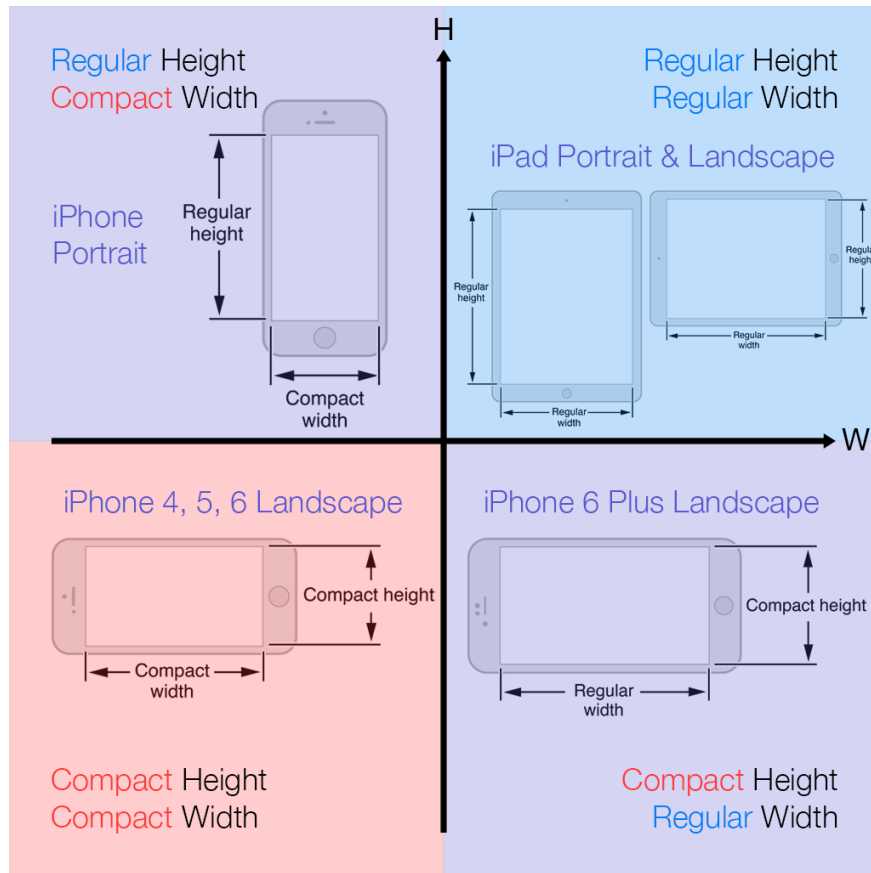
Traits are individual layout-related properties of a UI element

- UI idiom (phone, pad, TV, carPlay, unspecified)
- UI style (light, dark, unspecified)
- horizontal and vertical size classes (compact, regular, unspecified)
- display scale (@1x, @2x, @3x)
- display gamut (wide colour availability)
- force-touch availability (3d touch)
- layout direction (L-to-R, R-to-L, unspecified)

We can vary the layout of any UI element based on its traits



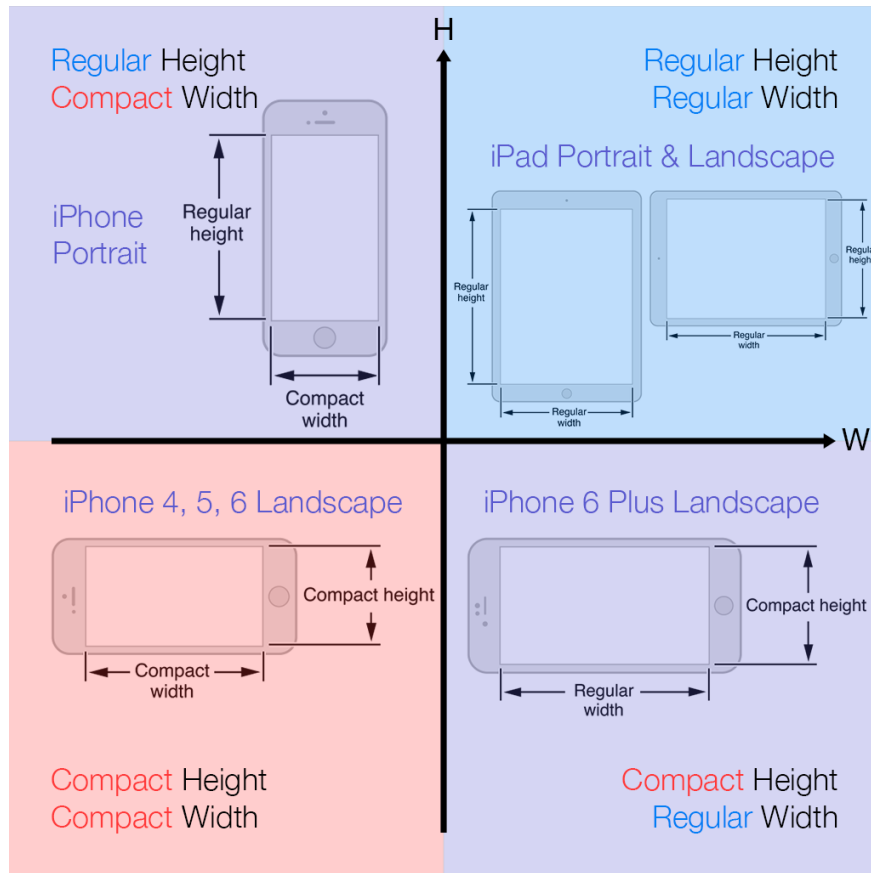
Size Classes



- Arguably the most important traits to consider when designing a layout
- Broad specification of how much space is available for a given UI element, along a given direction
- Changes in device orientation are treated as changes in the size class traits

<http://www.jessesquires.com/adaptive-user-interfaces/>

Size Classes



- Size classes not limited to devices
- Each section of a split-screen layout on an iPad has compact width, even though the device is regular-regular
- Scroll views can have regular size classes even in a device that only supports compact screens

<http://www.jessesquires.com/adaptive-user-interfaces/>

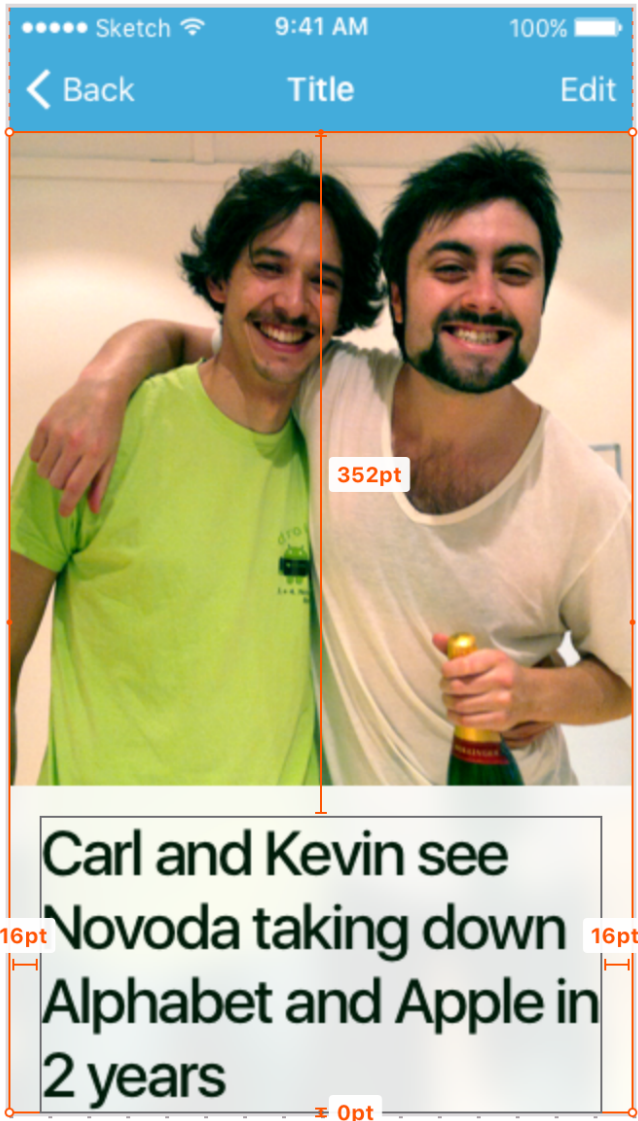
Tips for both designers and developers

- Figure out which items and behaviours are **common** between all layouts
- Design for and implement those **first**
- **Tweak** for specific layout configurations
- Refrain from designing/developing with a **device** mindset - think **size classes**, not devices
- Designer/developer **pairing** during design



Understanding auto-layout

- For a UI element to be auto laid out, you must somehow
 - set its size (width and height)
 - set its position, both horiz and vert, in its parent container
- There are many ways to set those
 - fixed values is just one way but **not** the most adaptive
 - consider **proportional** relations
 - consider **centring** in the parent container (offsets are ok, too)
- Do only the **minimum** work needed to constrain size and position



- A typical layout in Zeplin
 - Assumes a particular device
 - Assumes a particular orientation
 - Will not work in general
- When the client asks to support a newer phone, or an older one, or an iPad, or a different orientation, or a combination of those
 - the designer has to rethink the layout
 - the developer has to redo the implementation
- Isn't there a better way ?

Demo

(kind of)



Carl and Kevin see Novoda taking down Alphabet and Apple in 2 years

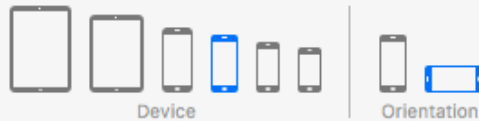
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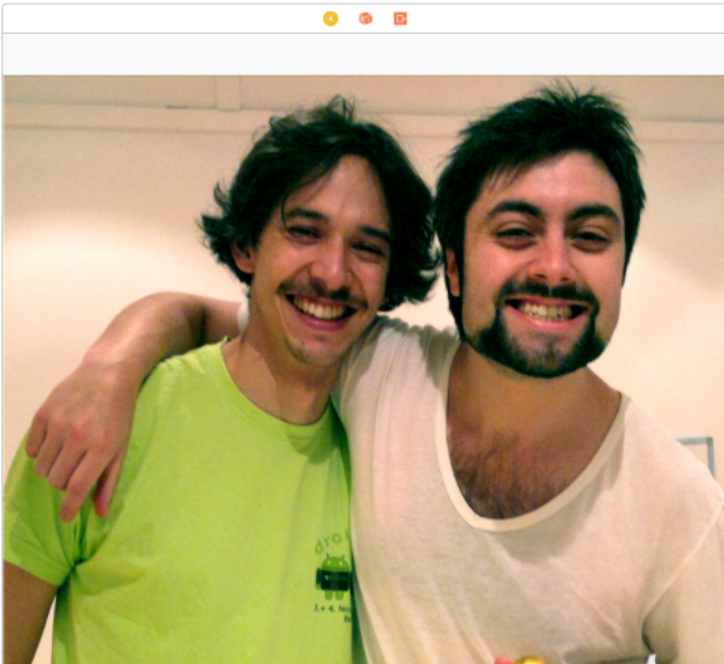
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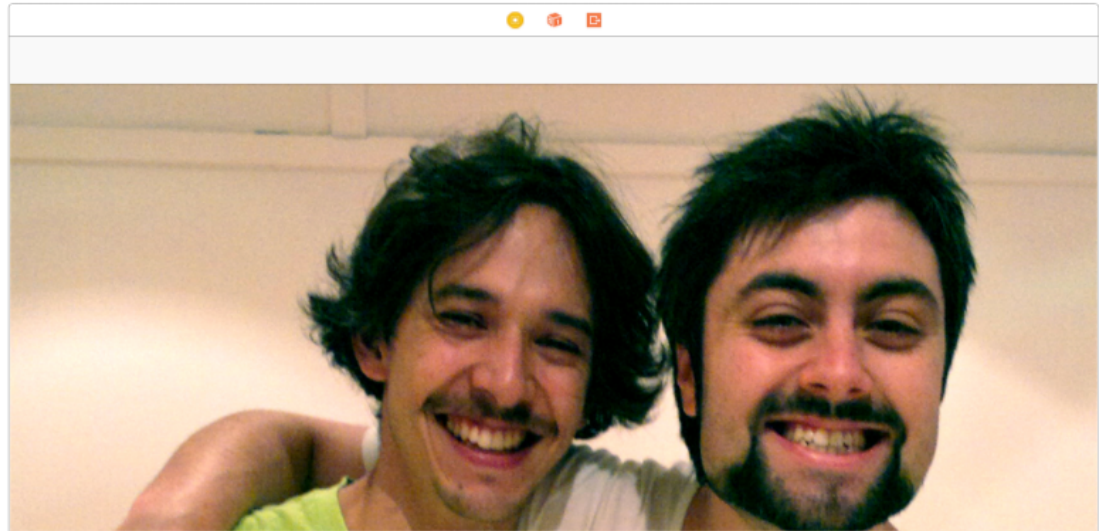
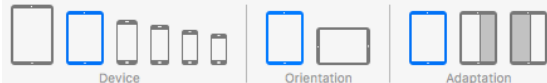
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☐ View as: iPad 9.7" (w R h R)



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Our message

**Think outside the
fixed box**



Thank you all for coming

Questions ?

