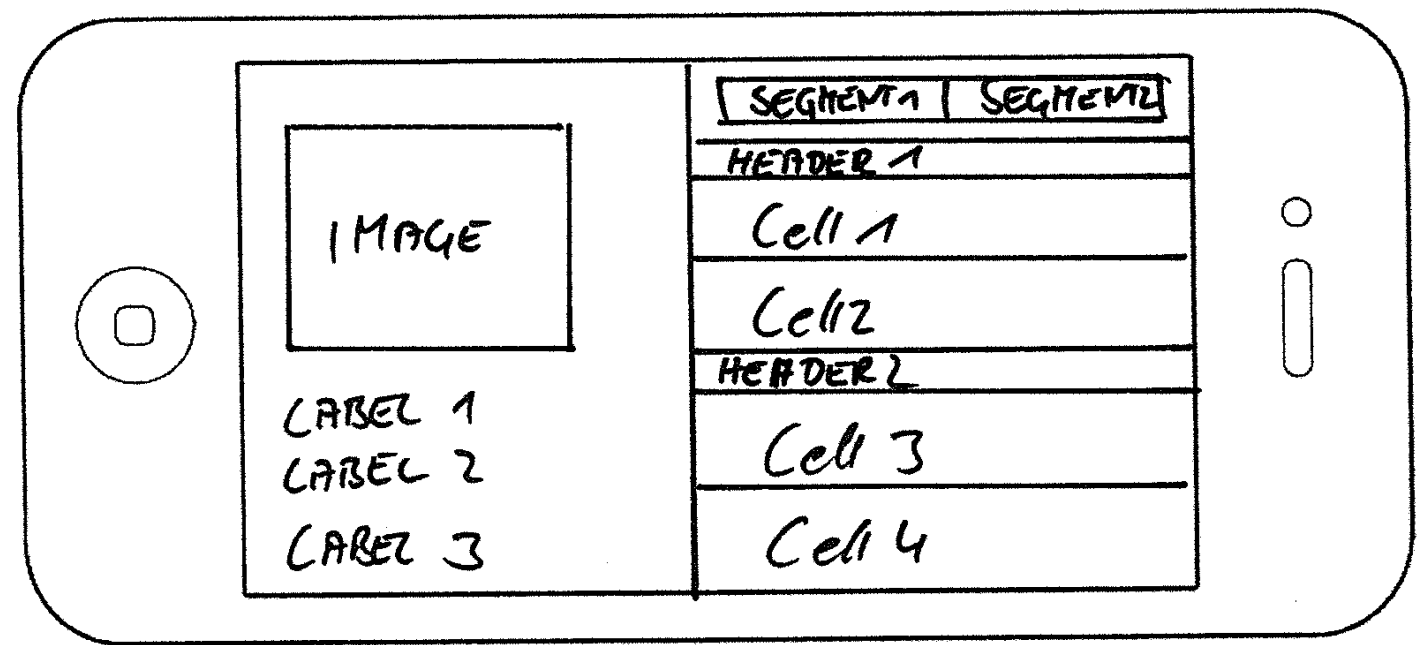
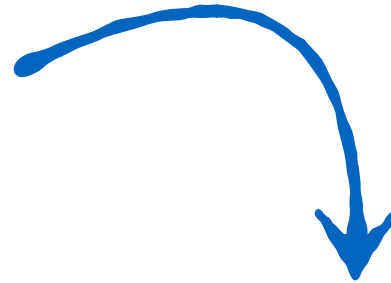
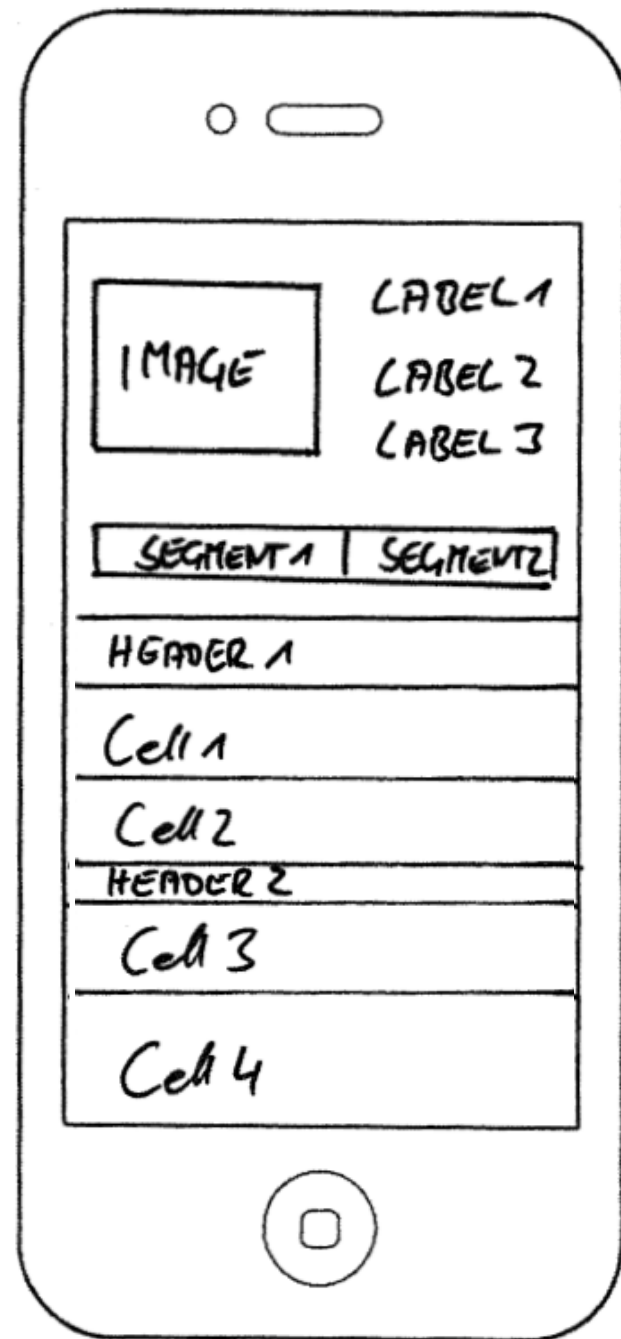


# AutoLayout

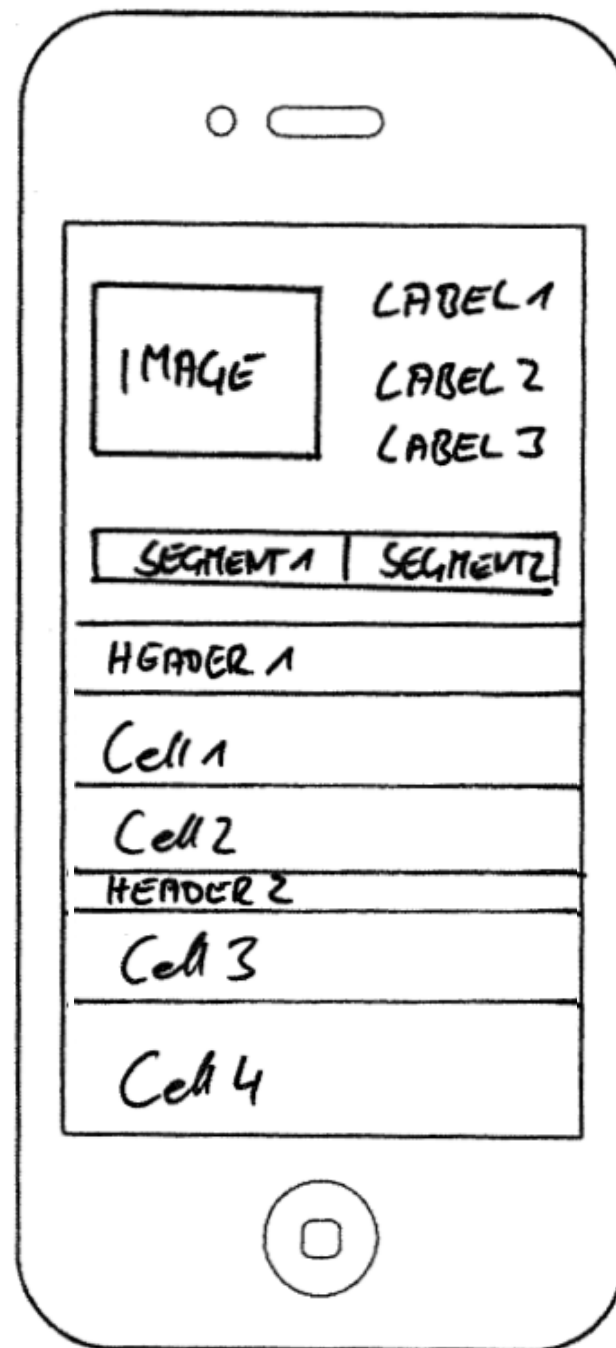
Ein paar Hinweise

Pit Garbe

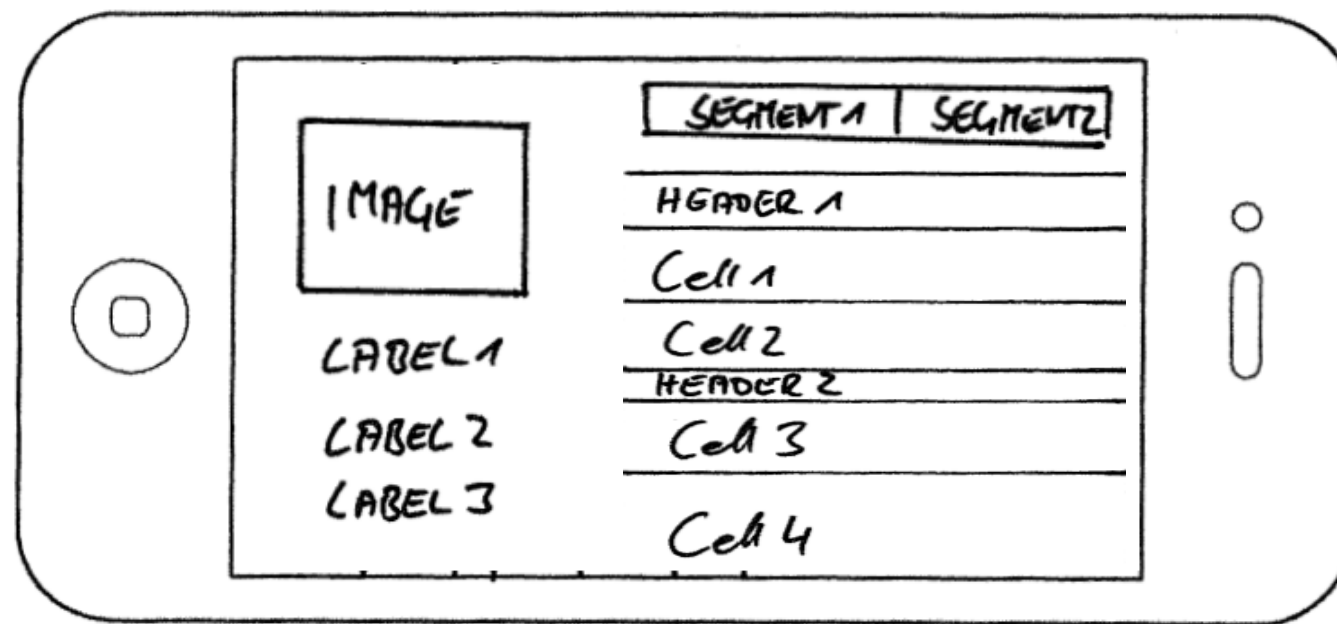
CocoaHeads Dresden, 14.01.2014



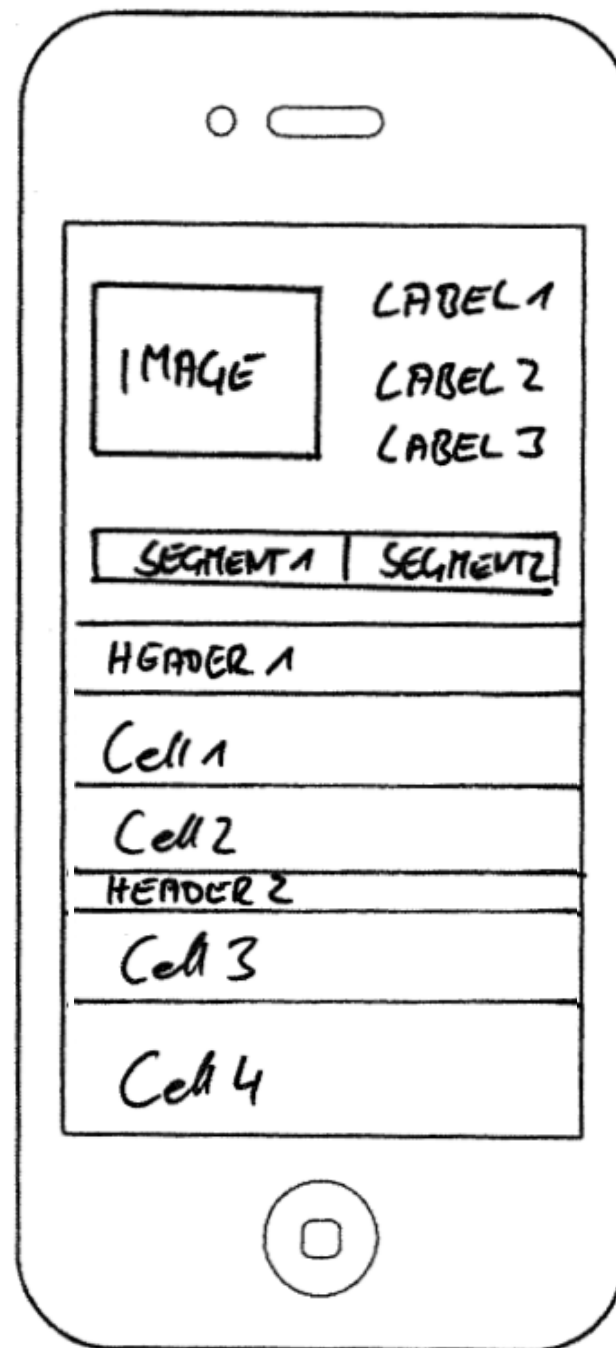
Unterschiedliche Layouts  
für Portrait und Landscape



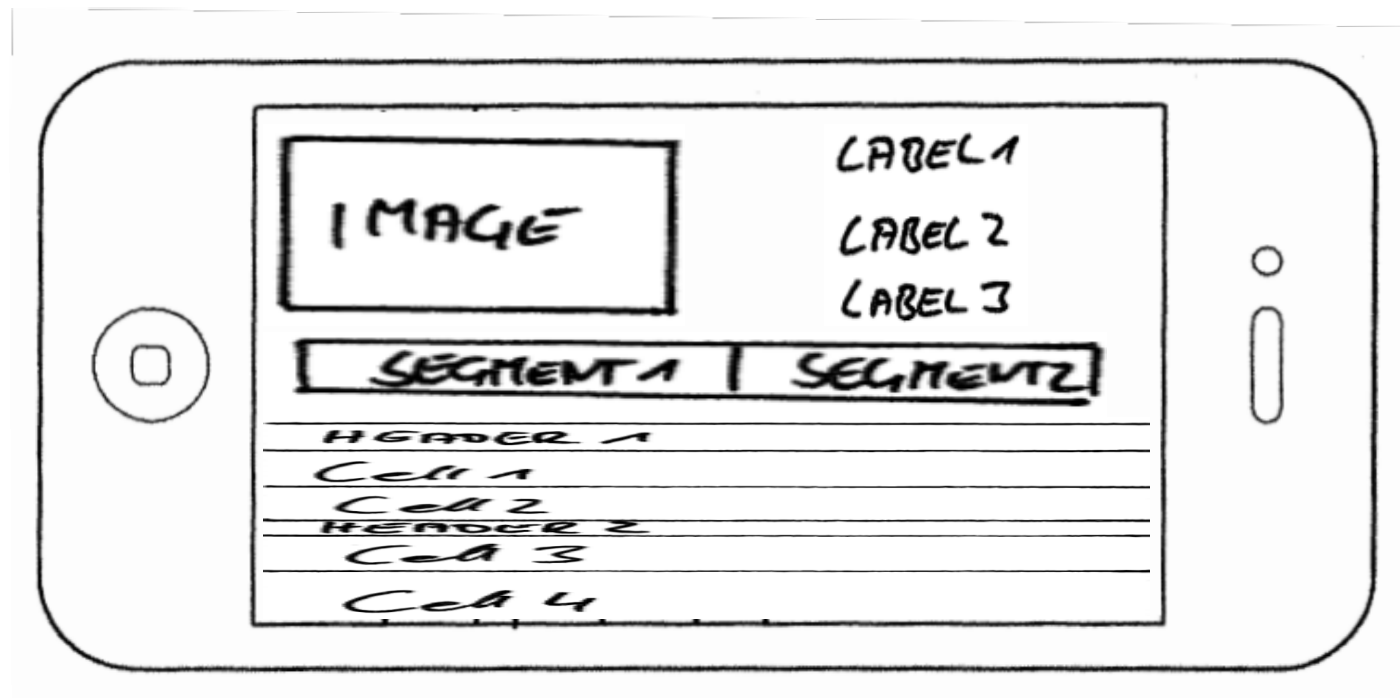
# Rotation - Wunschvorstellung



# Rotation - Wunschvorstellung



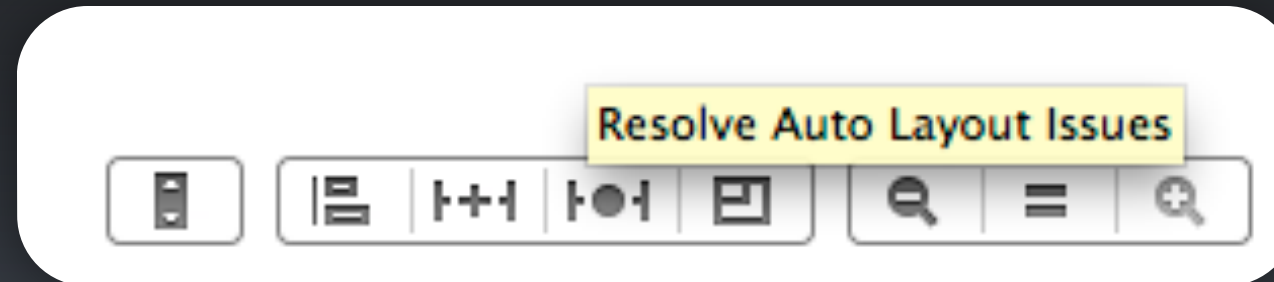
# Rotation - Vermutung



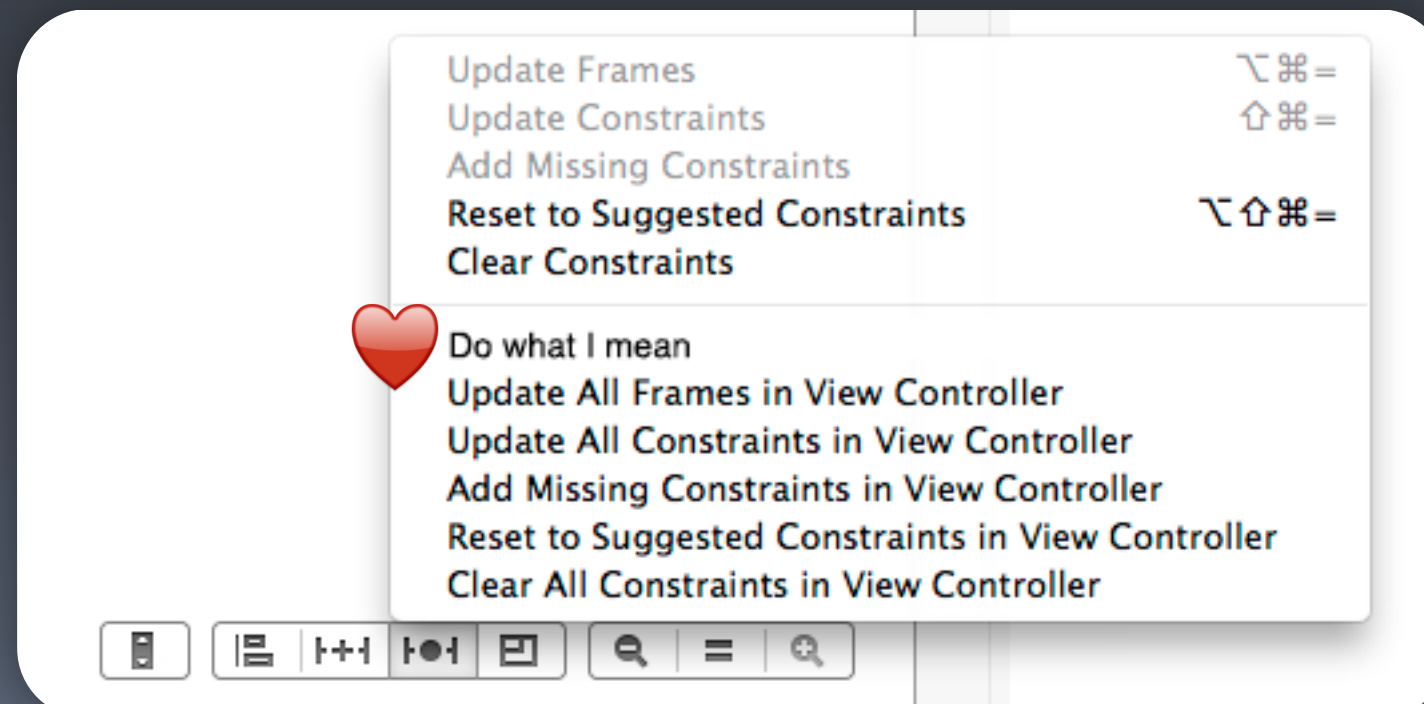
# Rotation - Vermutung

# Die Lösung

1.



2.



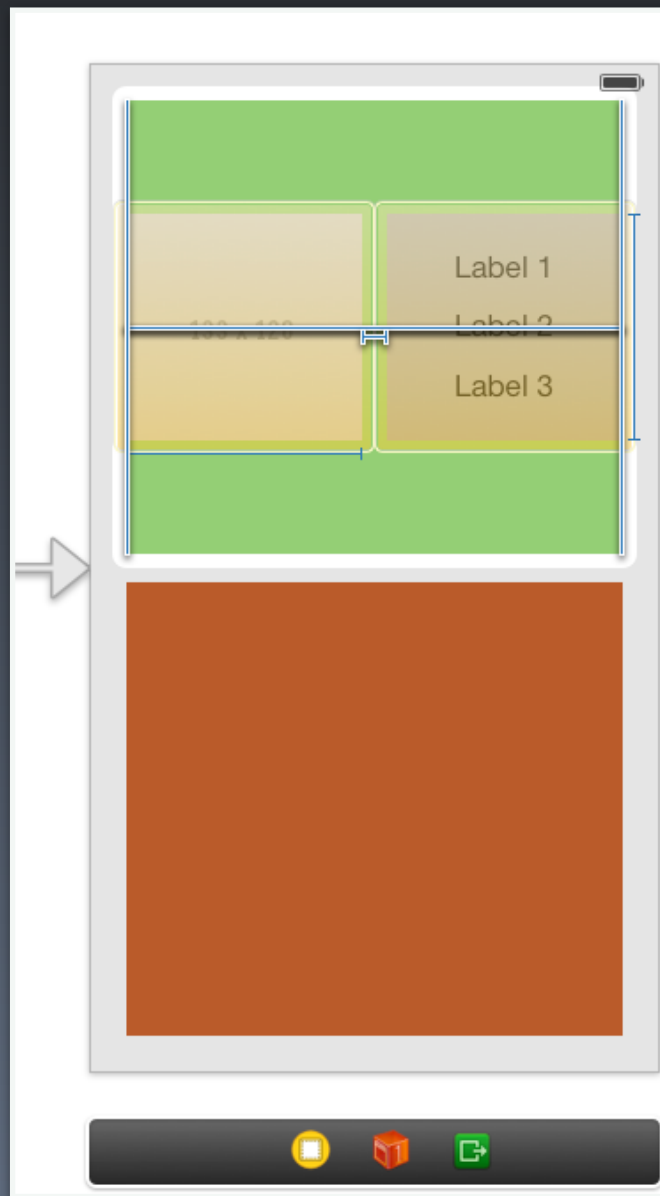
# Eine (echte) Lösung

- Constraints für eine Ausrichtung vollständig in IB
- alle Constraints, die NUR für diese Ausrichtung gelten und NICHT für die andere in eine IBOutletCollection
- in `-updateConstraints` die Constraints für die andere Ausrichtung einmalig erstellen
- dann je nach aktueller Ausrichtung die richtigen Constraints installieren



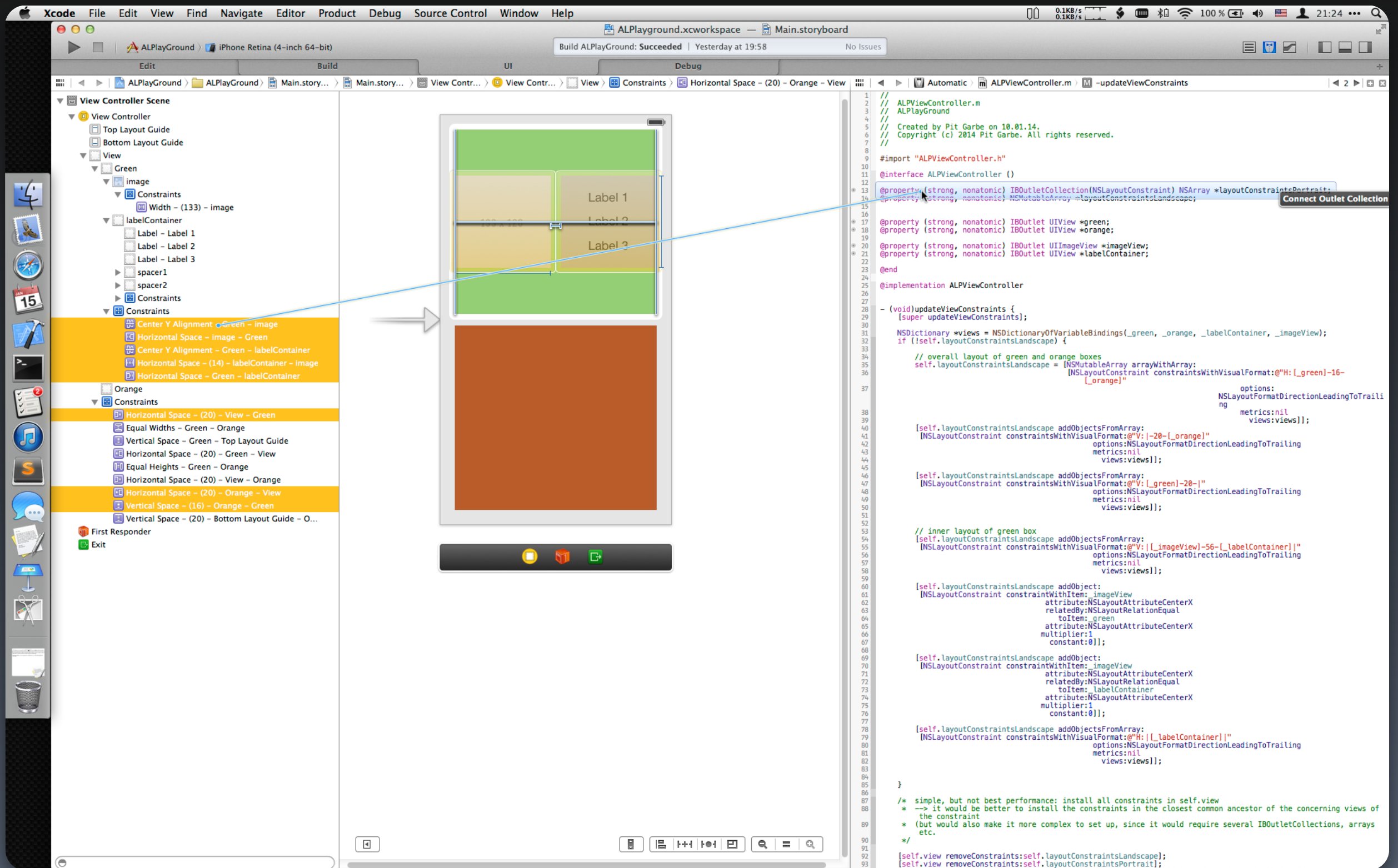
# Betreffende Constraints wählen

Constraints, die inneres Layout in grüner Subview betreffen



Constraints, die Layout von grüner und orangener Subview betreffen





Alles in eine IBOutletCollection

0.1KB/s 0.1KB/s 100 % 21:24

Main.storyboard

at 19:58 No Issues

space - (20) - Orange - View Automatic ALPViewController.m -updateViewConstraints

```
1 //
2 // ALPViewController.m
3 // ALPlayGround
4 //
5 // Created by Pit Garbe on 10.01.14.
6 // Copyright (c) 2014 Pit Garbe. All rights reserved.
7 //
8
9 #import "ALPViewController.h"
10
11 @interface ALPViewController ()
12
13 @property (strong, nonatomic) IBOutletCollection(NSLayoutConstraint) NSArray *layoutConstraintsPortrait;
14 @property (strong, nonatomic) NSMutableArray *layoutConstraintsLandscape;
15
16
17 @property (strong, nonatomic) IBOutlet UIView *green;
18 @property (strong, nonatomic) IBOutlet UIView *orange;
19
20 @property (strong, nonatomic) IBOutlet UIImageView *imageView;
21 @property (strong, nonatomic) IBOutlet UIView *labelContainer;
22
23 @end
24
25 @implementation ALPViewController
26
27
28
29
30
31
32 if (!self.layoutConstraintsLandscape) {
33
34 // overall layout of green and orange boxes
35 self.layoutConstraintsLandscape = [NSMutableArray arrayWithArray:
36                                     [NSLayoutConstraint constraintsWithVisualFormat:@"H: [_green]-16-
37                                     [_orange]"
38                                     options:
39                                     NSLayoutFormatDirectionLeadingToTrailing
40                                     metrics:nil
41                                     views:views]];
42
43 [self.layoutConstraintsLandscape addObjectsFromArray:
44 [NSLayoutConstraint constraintsWithVisualFormat:@"V: | -20- [_orange]"
45                                     options: NSLayoutFormatDirectionLeadingToTrailing
46                                     metrics:nil
47                                     views:views]];
48
49 [self.layoutConstraintsLandscape addObjectsFromArray:
50 [NSLayoutConstraint constraintsWithVisualFormat:@"V: [_green]-20-|"
51                                     options: NSLayoutFormatDirectionLeadingToTrailing
52                                     metrics:nil
53                                     views:views]];
```

Connect Outlet Collection

Außerdem Outlets für die wichtigen Views und ein Array für die Constraints, die später im Code erzeugt werden.



```

26
27
28 - (void)updateViewConstraints {
29     [super updateViewConstraints];
30
31     NSDictionary *views = NSDictionaryOfVariableBindings(_green, _orange, _labelContainer, _imageView);
32     if (!self.layoutConstraintsLandscape) {
33
34         // overall layout of green and orange boxes
35         self.layoutConstraintsLandscape = [NSMutableArray arrayWithArray:
36             [NSLayoutConstraint constraintsWithVisualFormat:@"H: [_green]-16-

```

in **-updateViewConstraints** alle Constraints für Landscape einmalig erstellen

```

        options:
        NSLayoutFormatDirectionLeadingToTrailing
        metrics:nil
        views:views]]];

```

```

40     [self.layoutConstraintsLandscape addObjectsFromArray:
41         [NSLayoutConstraint constraintsWithVisualFormat:@"V: |-20-[_orange]"
42             options:NSLayoutFormatDirectionLeadingToTrailing
43             metrics:nil
44             views:views]];
45
46     [self.layoutConstraintsLandscape addObjectsFromArray:
47         [NSLayoutConstraint constraintsWithVisualFormat:@"V: [_green]-20-|"
48             options:NSLayoutFormatDirectionLeadingToTrailing
49             metrics:nil
50             views:views]];
51
52
53     // inner layout of green box
54     [self.layoutConstraintsLandscape addObjectsFromArray:
55         [NSLayoutConstraint constraintsWithVisualFormat:@"V: |[_imageView]-56-[_labelContainer]|"
56             options:NSLayoutFormatDirectionLeadingToTrailing
57             metrics:nil
58             views:views]];
59
60     [self.layoutConstraintsLandscape addObject:
61         [NSLayoutConstraint constraintWithItem:_imageView
62             attribute:NSLayoutAttributeCenterX
63             relatedBy:NSLayoutRelationEqual
64             toItem:_green
65             attribute:NSLayoutAttributeCenterX
66             multiplier:1
67             constant:0]];
68
69     [self.layoutConstraintsLandscape addObject:
70         [NSLayoutConstraint constraintWithItem:_imageView
71             attribute:NSLayoutAttributeCenterX
72             relatedBy:NSLayoutRelationEqual
73             toItem:_labelContainer
74             attribute:NSLayoutAttributeCenterX
75             multiplier:1
76             constant:0]];
77
78     [self.layoutConstraintsLandscape addObjectsFromArray:
79         [NSLayoutConstraint constraintsWithVisualFormat:@"H: |[_labelContainer]|"
80             options:NSLayoutFormatDirectionLeadingToTrailing
81             metrics:nil
82             views:views]];
83
84
85     }
86

```

```

59
60
61 [self.layoutConstraintsLandscape addObject:
62     [NSLayoutConstraint constraintWithItem:_imageView
63         attribute:NSLayoutAttributeCenterX
64         relatedBy:NSLayoutRelationEqual
65         toItem:_green
66         attribute:NSLayoutAttributeCenterX
67         multiplier:1
68         constant:0]];
69
70 [self.layoutConstraintsLandscape addObject:
71     [NSLayoutConstraint constraintWithItem:_imageView
72         attribute:NSLayoutAttributeCenterX
73         relatedBy:NSLayoutRelationEqual
74         toItem:_labelContainer
75         attribute:NSLayoutAttributeCenterX
76         multiplier:1
77         constant:0]];
78
79 [self.layoutConstraintsLandscape addObjectsFromArray:
80     [NSLayoutConstraint constraintsWithVisualFormat:@"H:|[_labelContainer]|"
81         options:NSLayoutFormatDirectionLeadingToTrailing
82         metrics:nil
83         views:views]];
84
85 }
86
87 /* simple, but not best performance: install all constraints in self.view
88  * --> it would be better to install the constraints in the closest common ancestor of the concerning views of
89  * the constraint
90  * (but would also make it more complex to set up, since it would require several IBOutletCollections, arrays
91  * etc.
92  */
93
94 [self.view removeConstraints:self.layoutConstraintsLandscape];
95 [self.view removeConstraints:self.layoutConstraintsPortrait];
96 [self.view addConstraints:(UIInterfaceOrientationIsPortrait(self.interfaceOrientation)) ? self.
97     layoutConstraintsPortrait : self.layoutConstraintsLandscape];

```

Je nach Ausrichtung die passenden Constraints entfernen und die jeweils anderen installieren. Die Änderungen der Frames werden automatisch animiert.

GitHub: <https://github.com/leberwurstsaft/ALPlayGround>

# Magic Lösung (kein AutoLayout)

- TPMultiLayoutViewController
  - <http://atastypixel.com/blog/seamlessly-manage-portrait-and-landscape-view-controller-layouts/>
  - <https://github.com/michaeltyson/TPMultiLayoutViewController>
- 2 Jahre alt kann nix mit AutoLayout anfangen und nicht mal vollständig Springs+Struts abdecken
- **Verbesserungen** (Animationen, etc.)
  - <https://github.com/amolloy/TPMultiLayoutViewController>

# Auch sehenswert

<b>Introduction to Auto Layout for iOS and OS X</b>	WWDC 2012	
<b>Best Practices for Mastering Auto Layout</b>	WWDC 2012	
<b>Auto Layout by Example</b>	WWDC 2012	
<b>Interface Builder Core Concepts</b>	Nob Hill Wednesday 9:00AM	