

iPhone App Dev

Lesson 4

Source Codes

<https://github.com/bryanttang/iOS-Class-2015-6.git>

Contact

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Summary

- Animation
- UI Constraint
- Delegates (Review)
- Using TextView
- DataSource
- Using Picker

Animation

- **Animatable UIView properties**
 - Frame
 - bounds
 - center
 - transform
 - alpha
 - backgroundColor
 - contentStretch

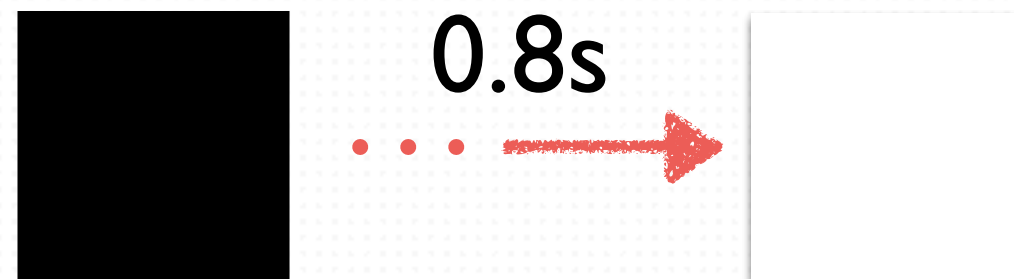
Animation

- `animateWithDuration:animations:`
- `animateWithDuration:animations:completion:`
- `animateWithDuration:delay:options:animations:completion:`

Animation

- animateWithDuration:animations:

```
//  
// State A  
    aview.backgroundColor = [UIColor blackColor];  
  
[UIView animateWithDuration:0.8 animations:^(  
    //State B  
    aview.backgroundColor = [UIColor whiteColor];  
)];
```



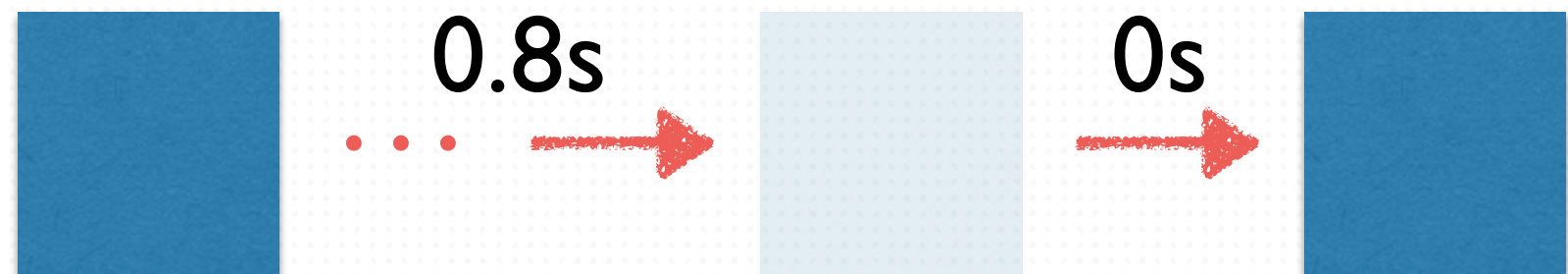
Animation

- animateWithDuration:animations:completion:

```
// State A
view.alpha = 1.0;

[UIView animateWithDuration:0.8 animations:^(
    // State B
    view.alpha = 0.3;

} completion:^(BOOL finished) {
    // State C
    view.alpha = 1.0;
}];
```



Animation

- `animateWithDuration:delay:options:animations:completion:`

```
[UIView animateWithDuration:0.8 animations:^(
    //state 1
} completion:^(BOOL finished) {
    [UIView animateWithDuration:0.5
        delay:2
        options:UIViewAnimationOptionCurveEaseOut

        animations:^(
            //state 2
        }
        completion:^(BOOL finished) {
            //state 3
        }
    ];
}];
```

Animation

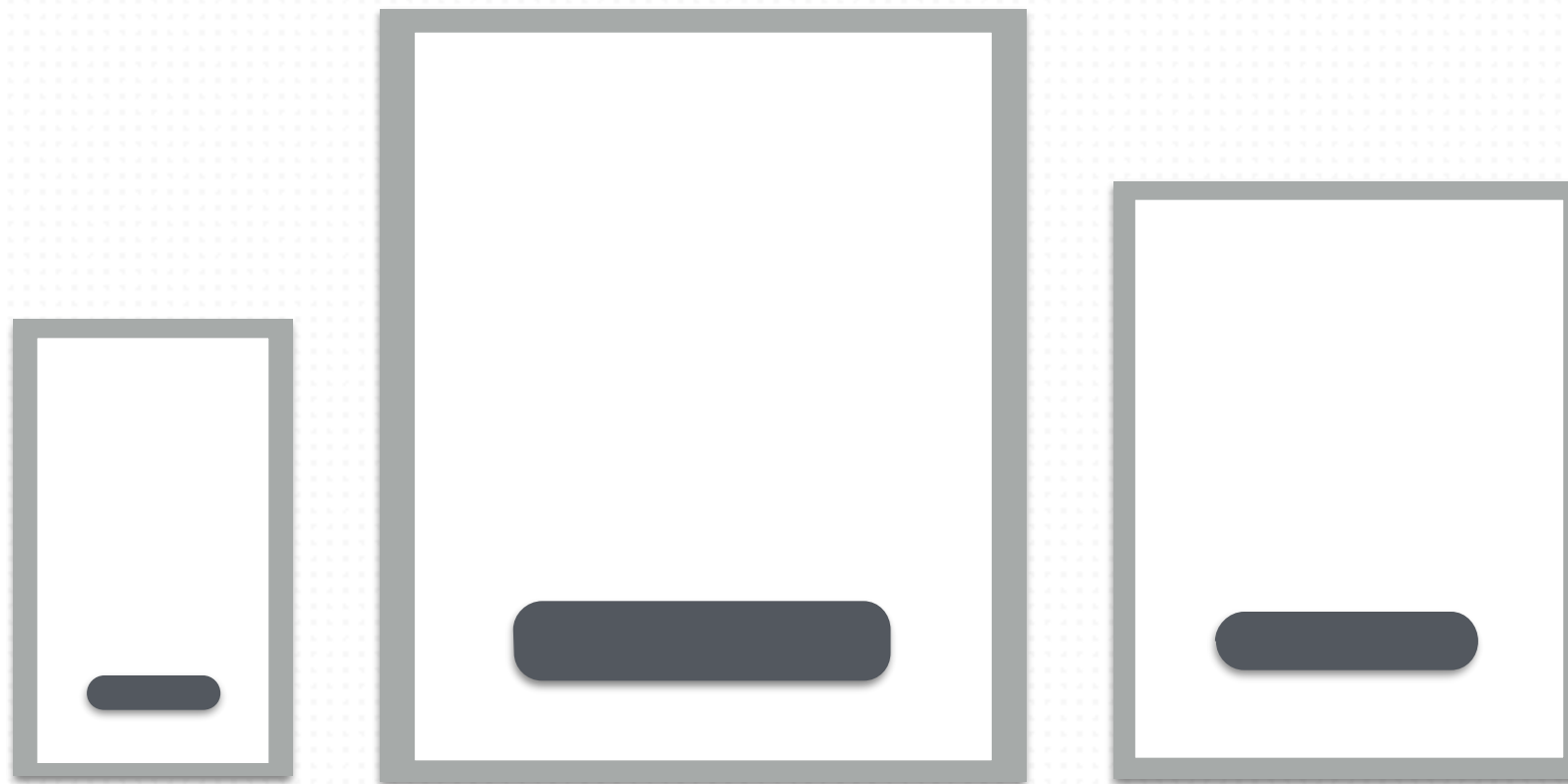
- **UIViewAnimationOptions**
 - UIViewAnimationOptionRepeat
 - UIViewAnimationOptionAutoreverse
 - UIViewAnimationOptionCurveEaseInOut
 - UIViewAnimationOptionCurveEaseOut
 - UIViewAnimationOptionTransitionFlipFromLeft
 - UIViewAnimationOptionTransitionCurlUp

UI Constraint

UI Constraint

Why?

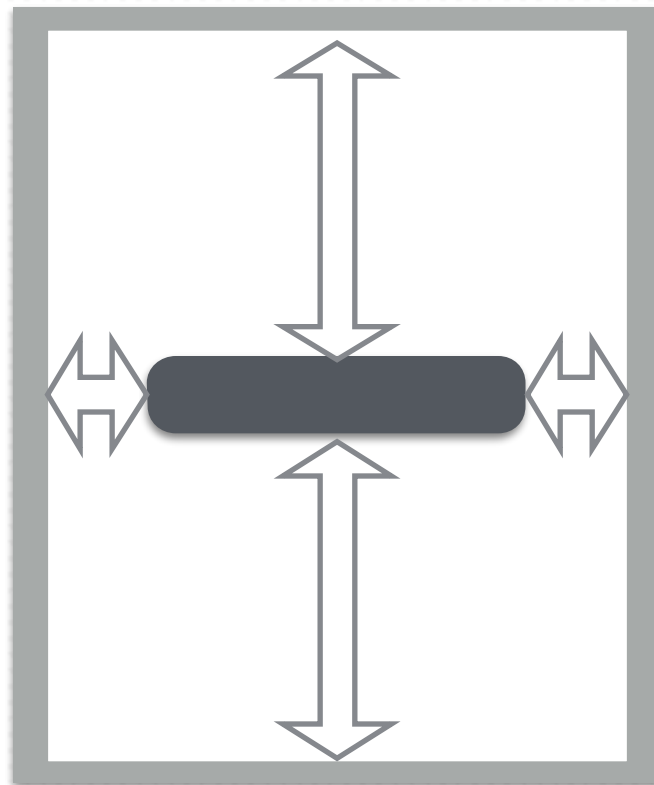
Ans: To be responsive to different size of device



UI Constraint

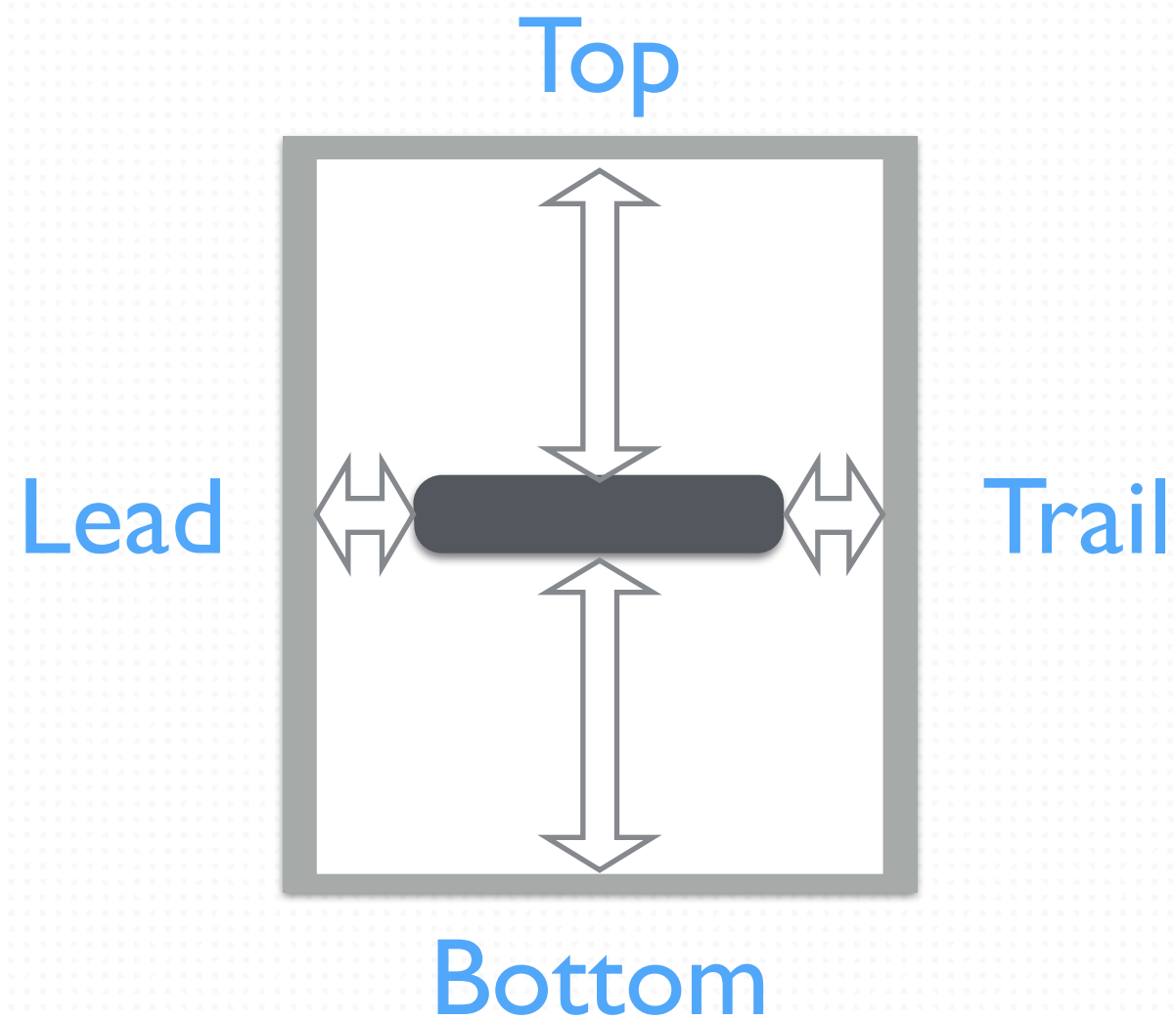
How to implement in StoryBoard?

<< Constraint >>



UI Constraint

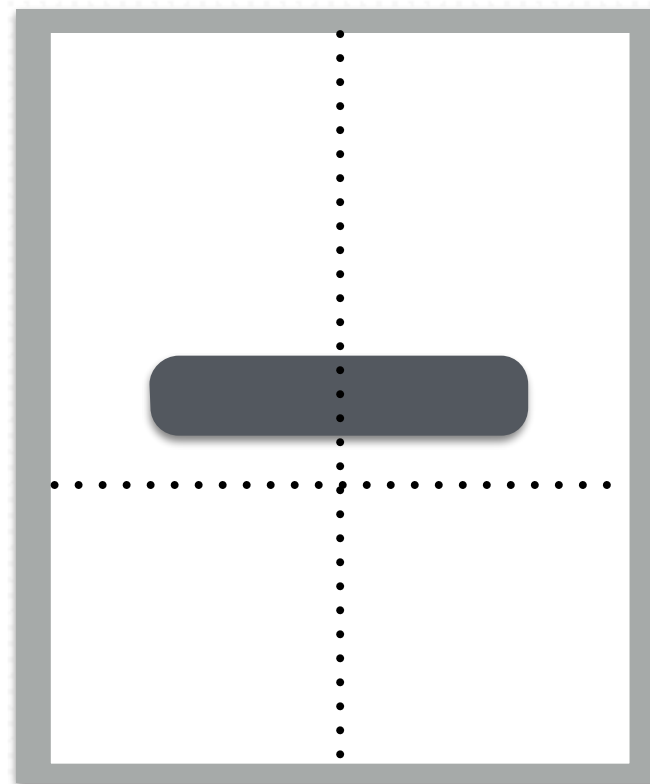
Constraint : **Position**



UI Constraint

Constraint : **Position**

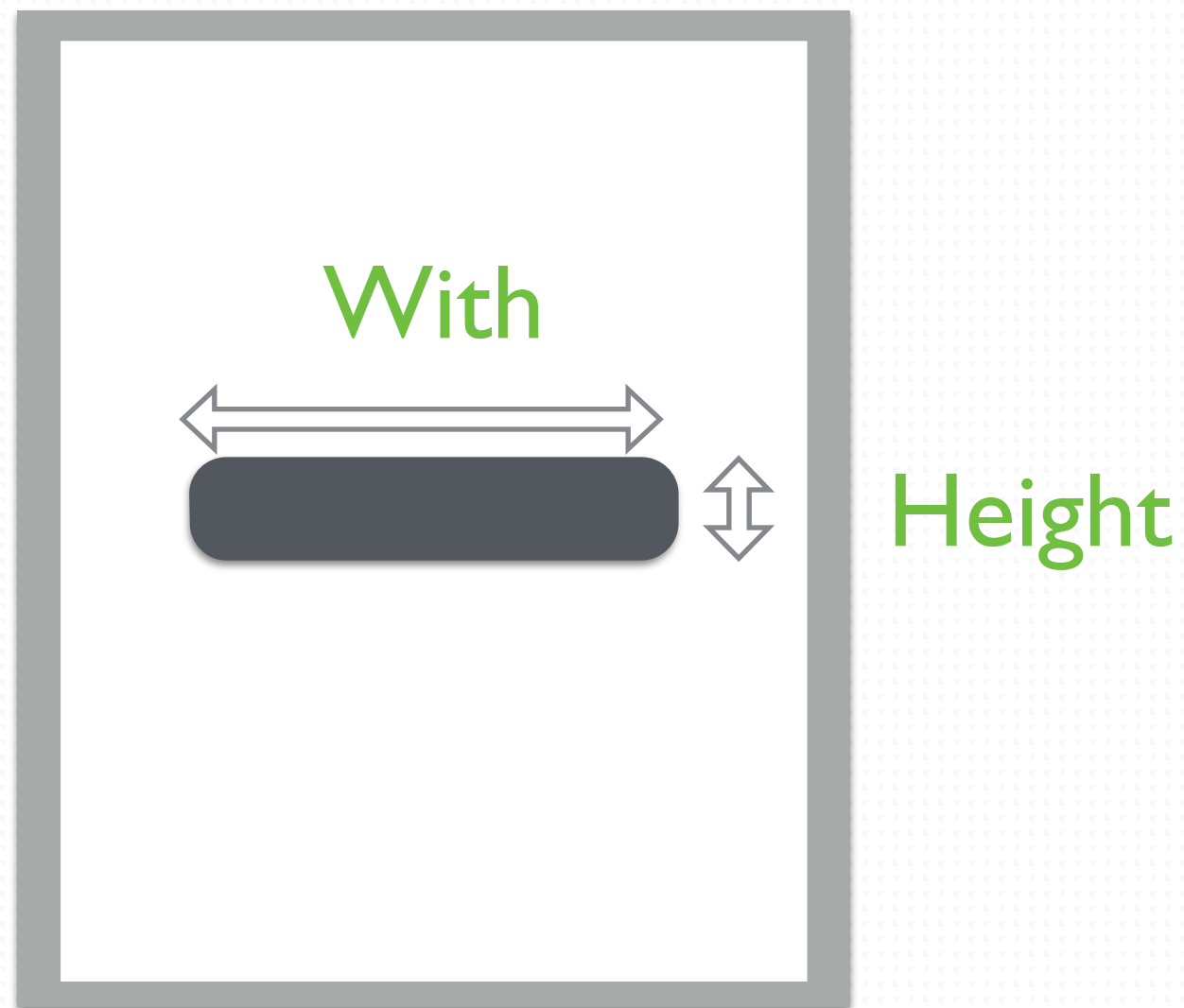
Horizontal



Vertical

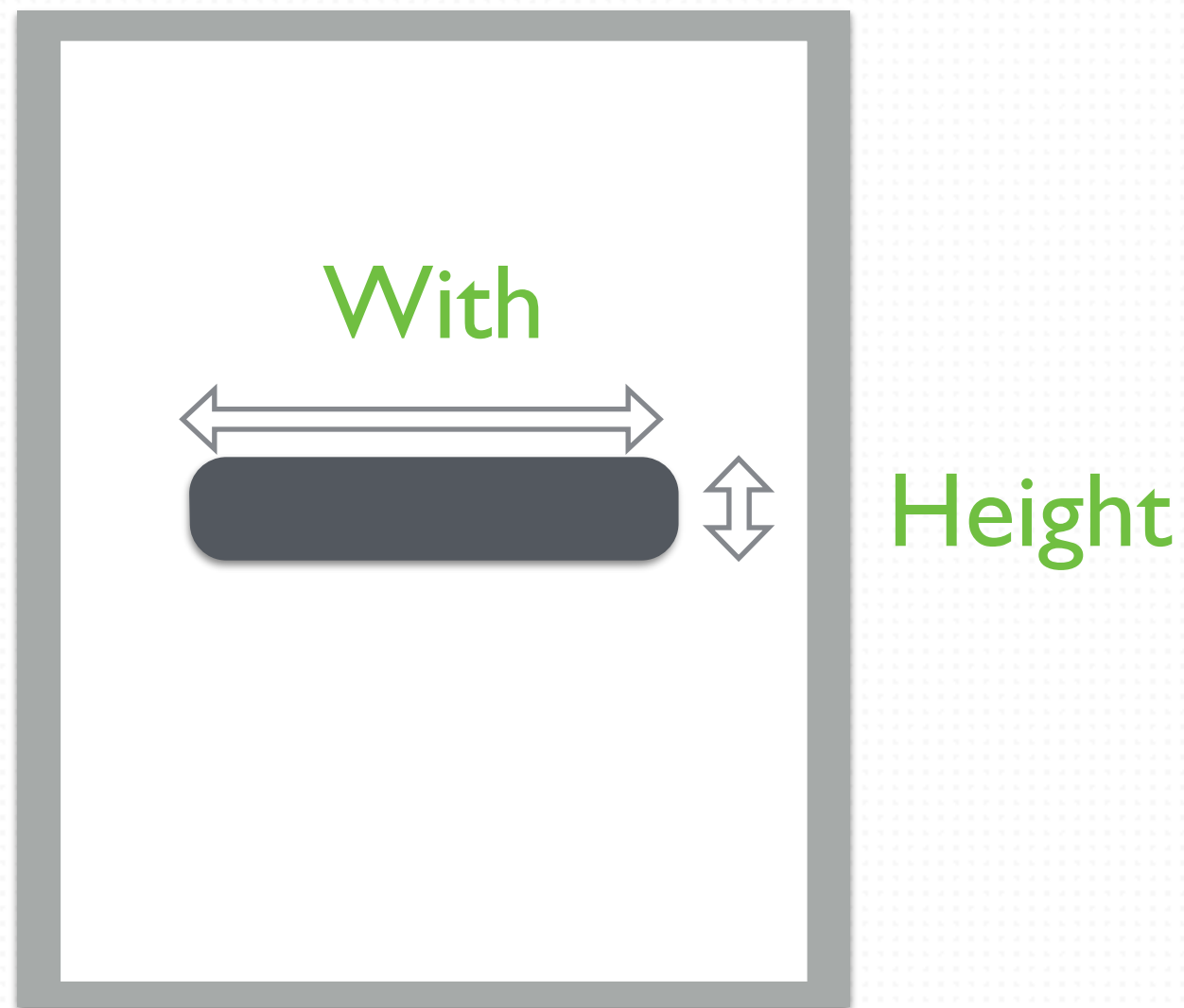
UI Constraint

Constraint : Size



UI Constraint

Constraint : Size

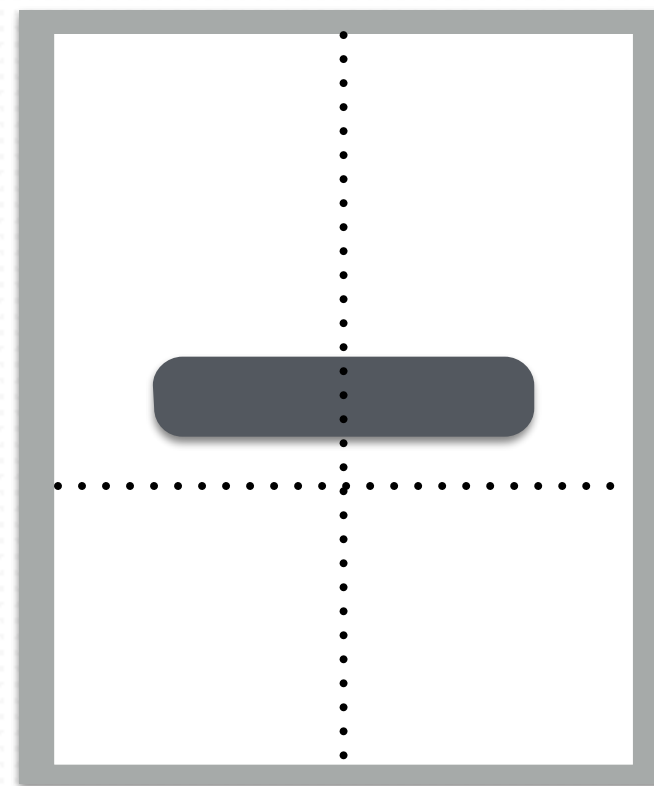
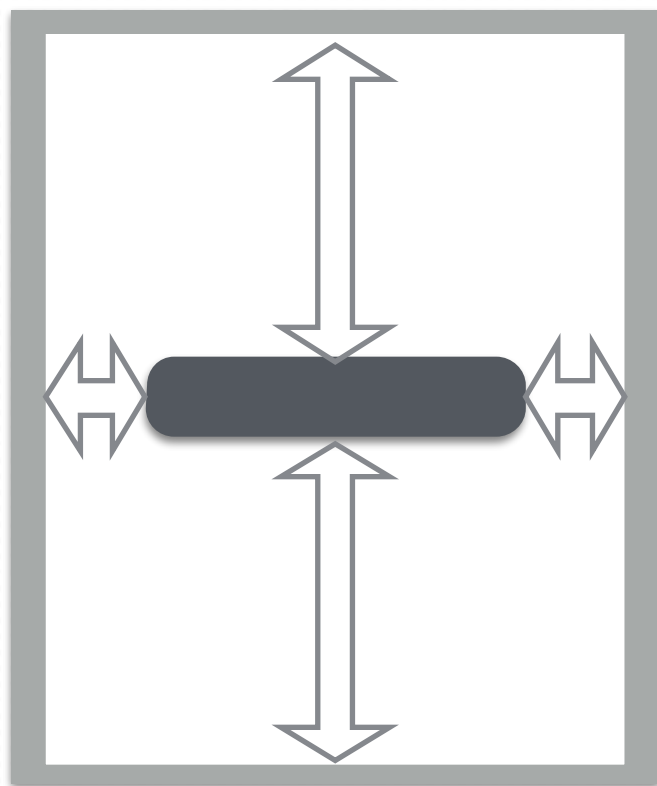


UI Constraint

Two Objects involve

View

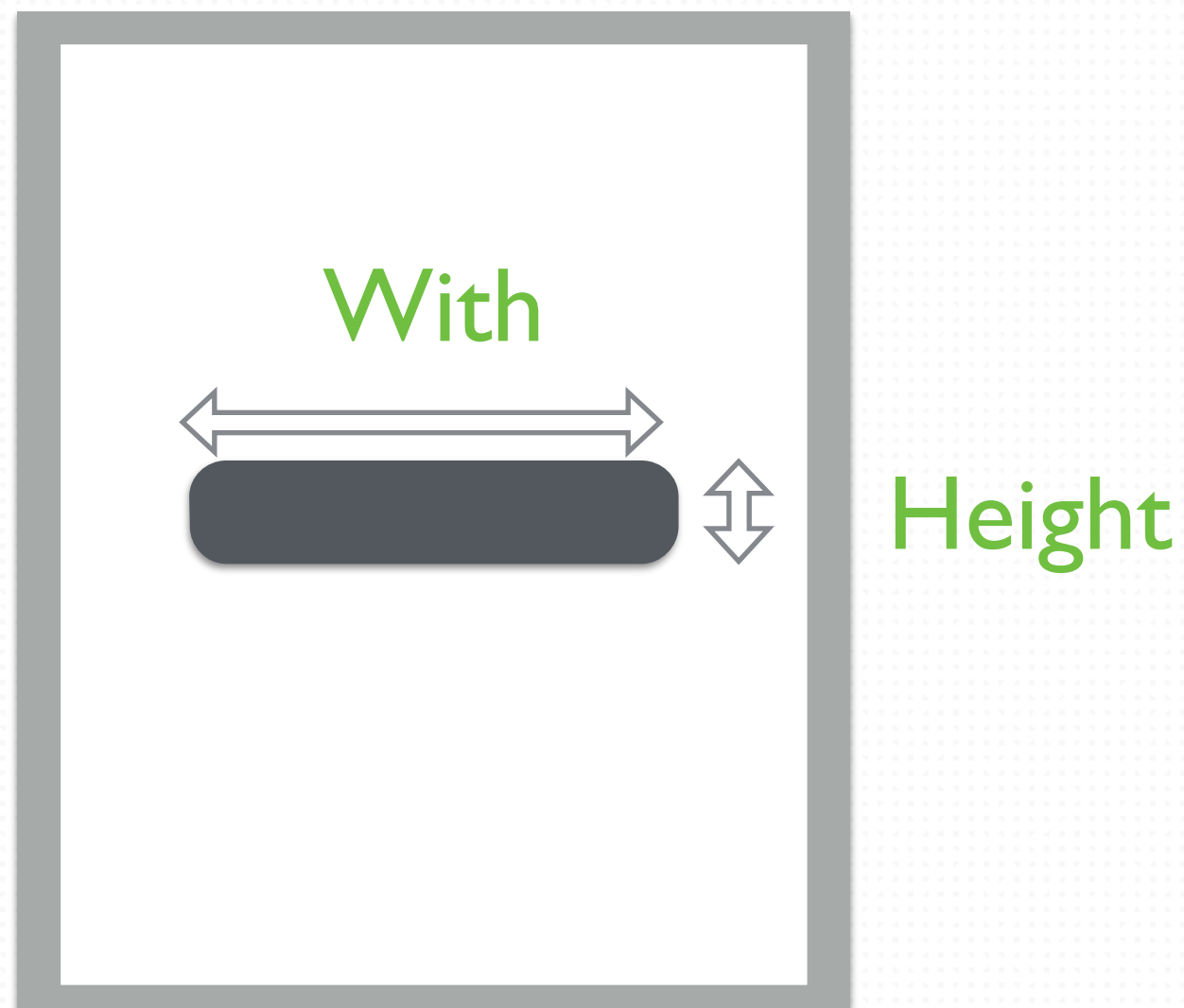
Button



UI Constraint

One Object involve?

Button

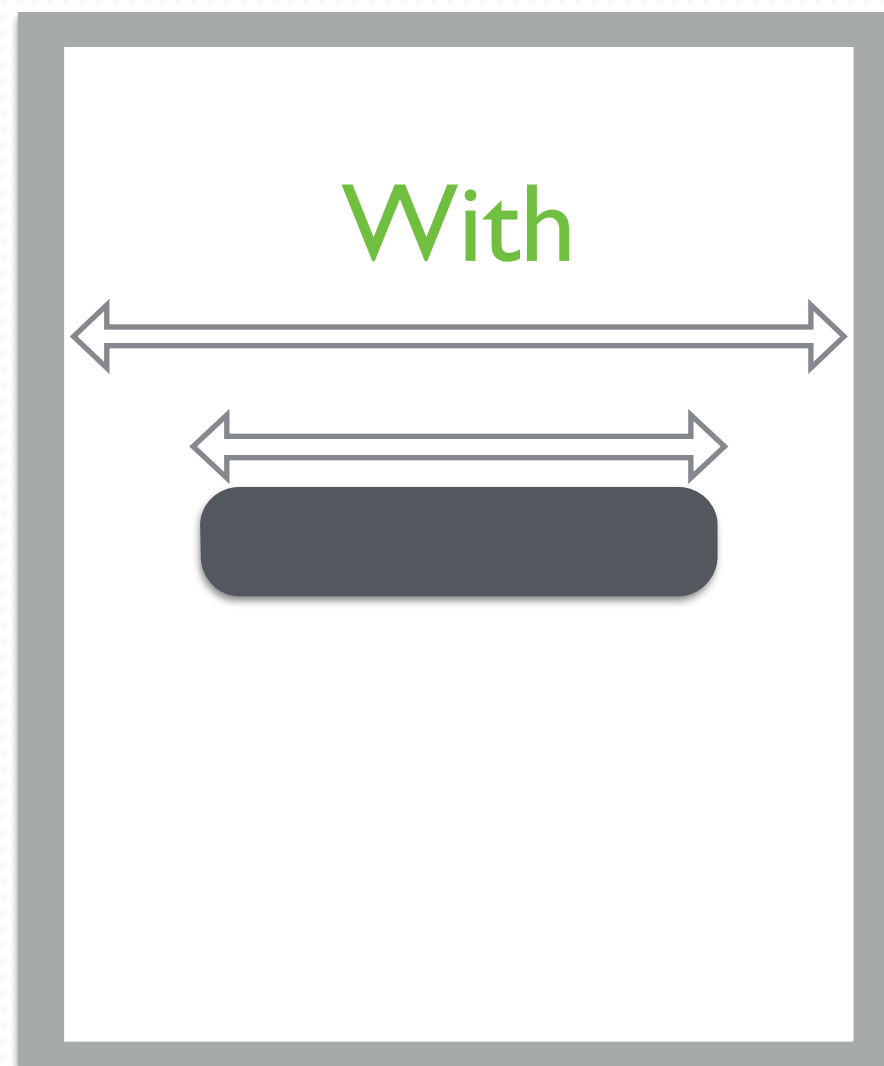


UI Constraint

Two Objects involve? **NO**

View

Button



Delegates

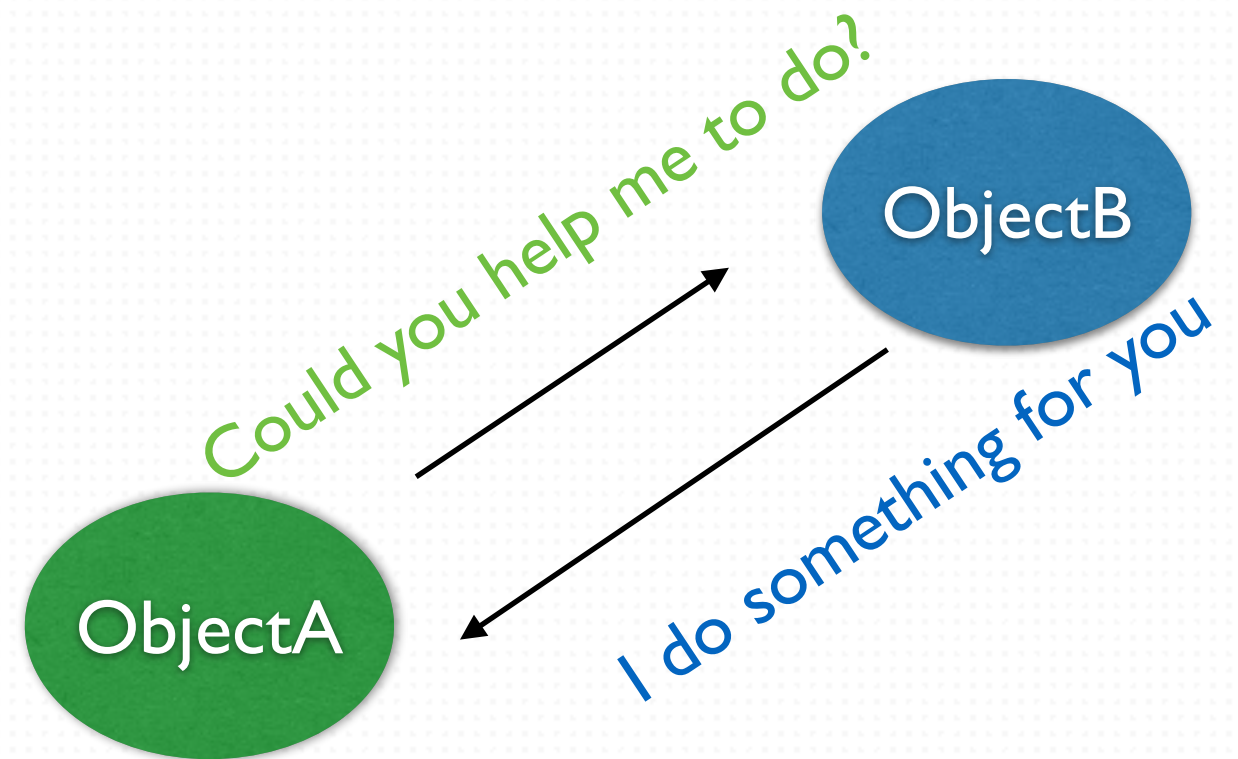
Delegates

Concept:

To help an **object** complete certain task

Example:

- UITextField
- UITextFieldDelegates
- UIPickerViewDelegates
- UITableViewDelegates



ObjectA.delegate = ObjectB

Using Text View

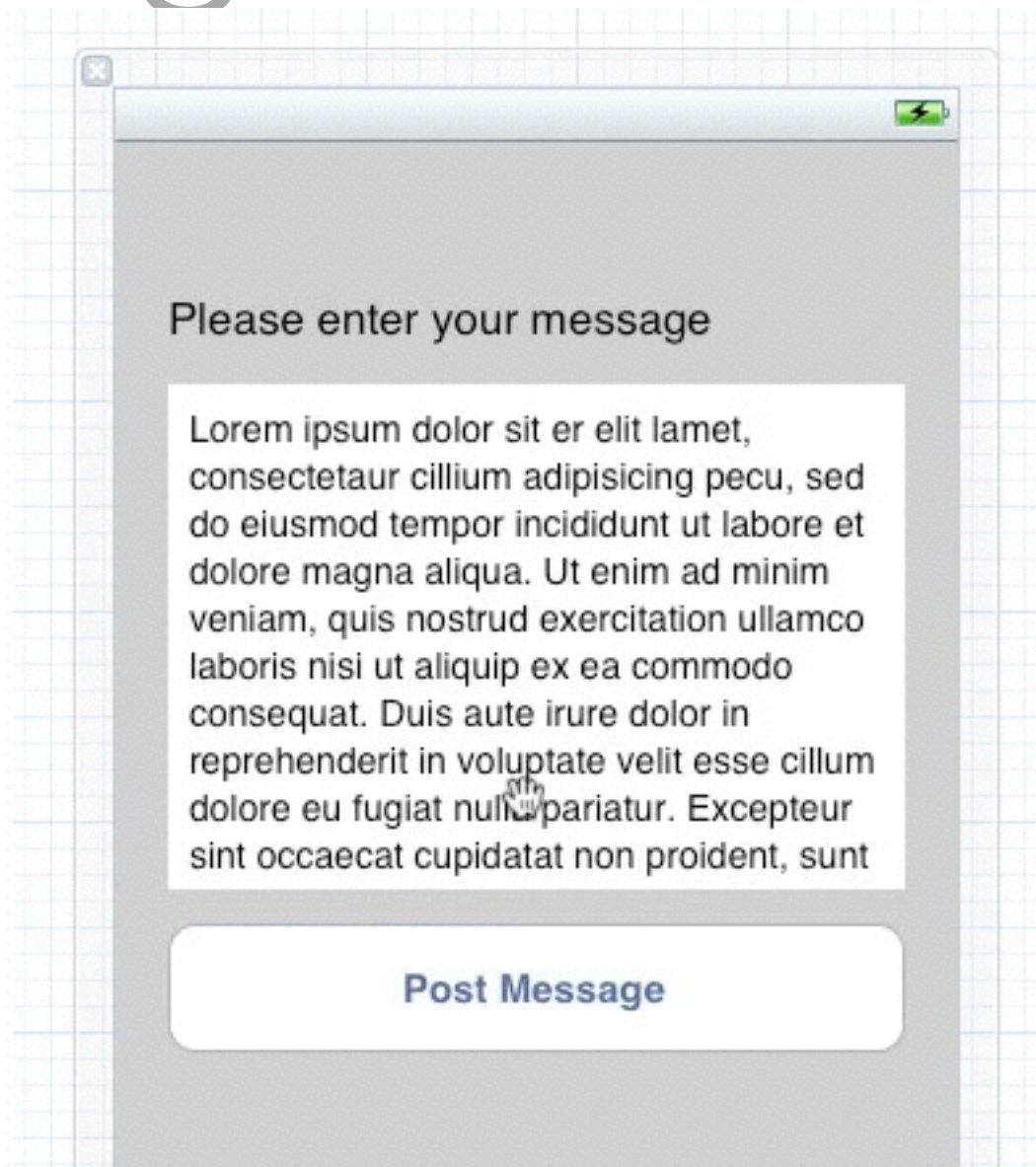
Using UITextView

- UITextViewDelegates Methods
- didStartEditing
- didEndEditing

Using UITextView

- Detect Return Key to end editing
- Move the view to show keyboard

Using UITextView



Prepare a view with UITextView

Connect the UITextView delegate to File's Owner

Using UITextView

```
1 @interface ViewController : UIViewController <UITextViewDelegate>
2
3 @end
```

(Optional) Add the delegates to header.

Using UITextView

```
1 - (BOOL)textView:(UITextView *)textView shouldChangeTextInRange:
(NSRange)range replacementText:(NSString *)text {
2
3     if([text isEqualToString:@"\n"]) {
4         [textView resignFirstResponder];
5         return NO;
6     }
7
8     return YES;
9 }
```

Detect the input character and find the line break.

Using UITextView

```
1 - (void)textViewDidBeginEditing:(UITextView *)textView
2 {
3     CGRect frame = self.view.frame;
4     frame.origin.y = -100;
5     self.view.frame = frame;
6 }
7
8 - (void)textViewDidEndEditing:(UITextView *)textView
9 {
10    CGRect frame = self.view.frame;
11    frame.origin.y = 0;
12    self.view.frame = frame;
13 }
```

Move up the view when the keyboard shows.

Revert the view when the keyboard hides.

Using UITextView

```
1 - (void)textViewDidBeginEditing:(UITextView *)textView
2 {
3     CGRect frame = self.view.frame;
4     frame.origin.y = -100;
5     [UIView animateWithDuration:.3 animations: ^{
6         self.view.frame = frame;
7     }];
8 }
9
10 - (void)textViewDidEndEditing:(UITextView *)textView
11 {
12     CGRect frame = self.view.frame;
13     frame.origin.y = 0;
14     [UIView animateWithDuration:.3 animations: ^{
15         self.view.frame = frame;
16     }];
17 }
```

Bonus, animate the view transition.

Using UITextView

```
1 [textview becomeFirstResponder];
```

(Optional) Focus on the textview by code.

DataSource

DataSource

- Provide dataset for Collection UI
- It must be a Controller
- Keep maintain the data of Collection UI

DataSource

Collection UI



DataSource

@["cell1","cell2","cell3",...]

-setnumberofitems

-setcontentofitem

Using Picker

UIPicker Example

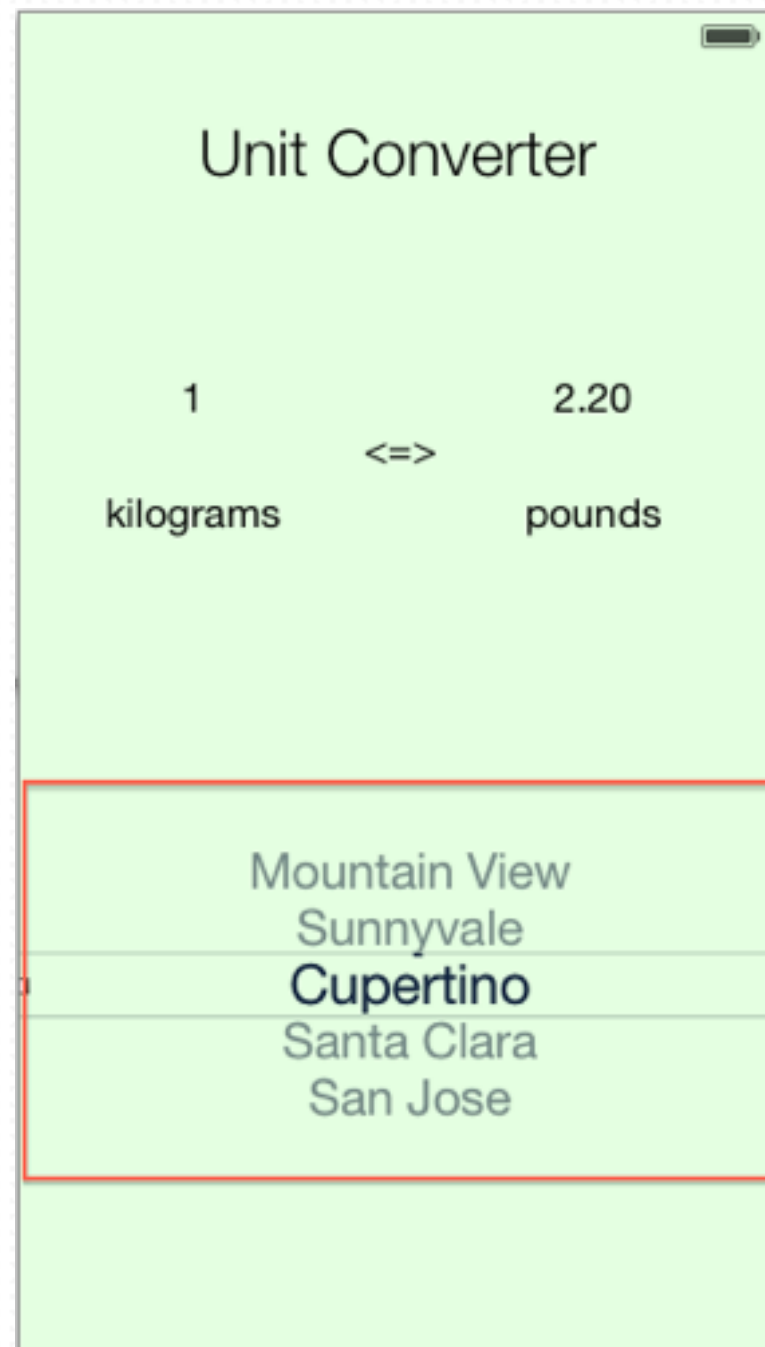
- Unit converter for Kilograms, Pounds, Ounces.

UIPicker Example



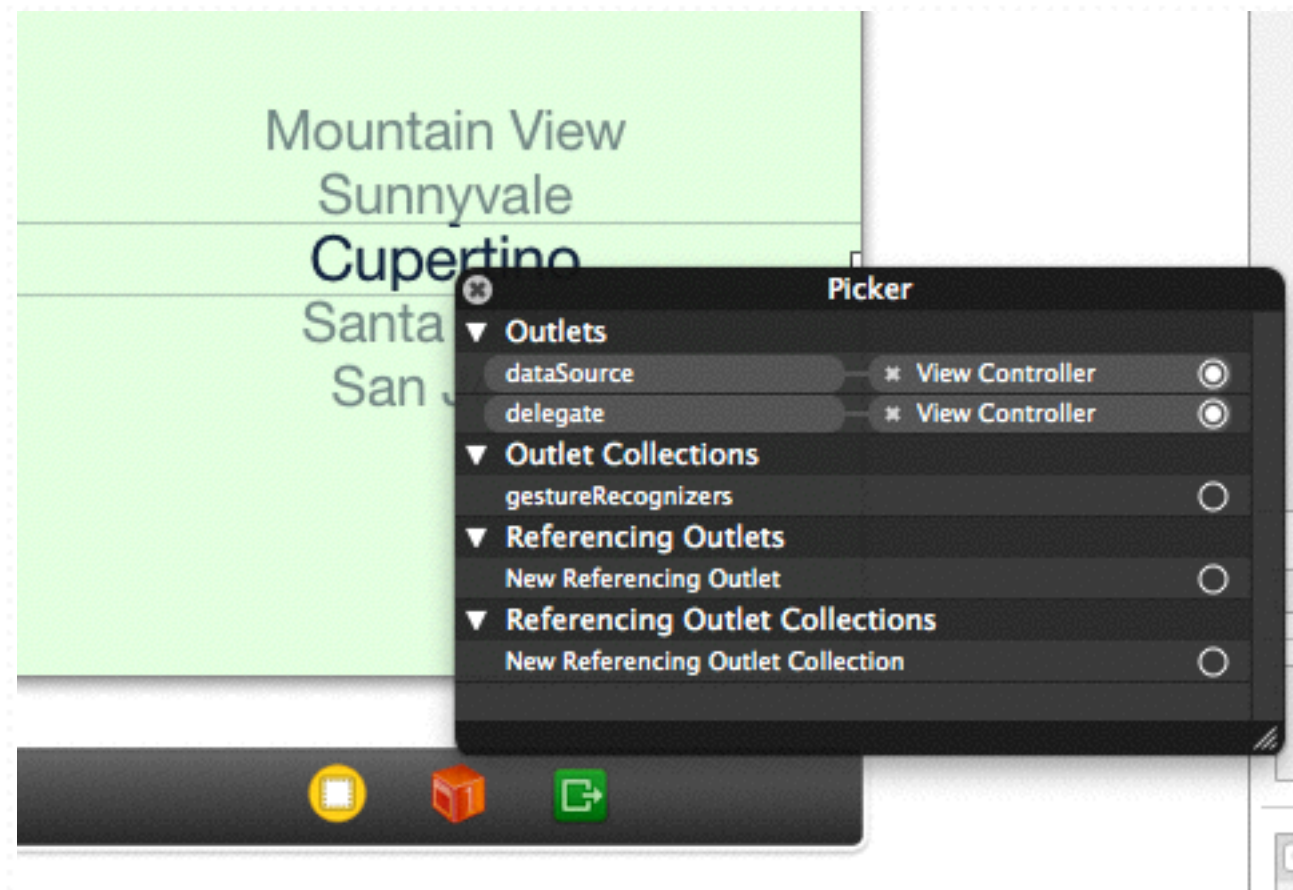
Prepare the UILabels, connect as *leftNumberLabel*, *leftUnitLabel*, *rightNumberLabel*, *rightUnitLabel*.

UIPicker Example



Drag a UIPickerView into the view.

UIPicker Example



Drag a UIPickerViewView into the view.

Connect the UIPickerView delegate and datasource to File's Owner

UIPicker

- How we can check delegates methods ?
 1. Declare the delegates in header.
 2. Command + Click on the delegate name.
 3. XCode jumps to the header file of delegate.
 4. Check the available delegate methods and related comments.

Unit Converter

```
1 - (NSInteger)numberOfComponentsInPickerView:(UIPickerView *)pickerView
2 {
3     return 2;
4 }
```

Define how many components we split the picker.

Unit Converter

```
1 - (NSInteger)pickerView:(UIPickerView *)pickerView  
numberOfRowsInComponent:(NSInteger)component  
2 {  
3     // both left and right picker component has the same amount of rows  
4     return 3;  
5 }
```

Define how many row for each picker component.

Unit Converter

```
1 - (NSString *)pickerView:(UIPickerView *)pickerView titleForRow:
(NSInteger)row forComponent:(NSInteger)component
2 {
3     // both left and right components share the same rows and text
4     // otherwise we need to distinguish them.
5     switch (row) {
6         case 0:
7             return @"kilograms";
8             break;
9         case 1:
10            return @"pounds";
11        case 2:
12            return @"ounces";
13        default:
14            break;
15    }
16    return @"";
17 }
```

Tell the picker what text we use for each row.

Unit Converter

```
1 - (void)pickerView:(UIPickerView *)pickerView didSelectRow:(NSInteger)row inComponent:
(NSInteger)component {
2     if (component == 0) {
3         if (row == 0) {
4             self.leftUnitLabel.text = @"kilograms";
5         }
6         else if (row == 1) {
7             self.leftUnitLabel.text = @"pounds";
8         }
9         else if (row == 2) {
10            self.leftUnitLabel.text = @"ounces";
11        }
12    }
...
24    [self refreshNumbers];
25 }
```

Change left and right label when we selected a row.

(Update: add 'self .' before leftUnitLabel)

```

1 - (void)pickerView:(UIPickerView *)pickerView didSelectRow:(NSInteger)row
inComponent:(NSInteger)component {
2     if (component == 0) {
3         if (row == 0) {
4             self.leftUnitLabel.text = @"kilograms";
5         }
6         else if (row == 1) {
7             self.leftUnitLabel.text = @"pounds";
8         }
9         else if (row == 2) {
10            self.leftUnitLabel.text = @"ounces";
11        }
12    }
13    else if (component == 1) {
14        if (row == 0) {
15            self.rightUnitLabel.text = @"kilograms";
16        }
17        else if (row == 1) {
18            self.rightUnitLabel.text = @"pounds";
19        }
20        else if (row == 2) {
21            self.rightUnitLabel.text = @"ounces";
22        }
23    }
24    [self refreshNumbers];
25 }

```

The did select delegate, full code.

Unit Converter

```
1 - (void)refreshNumbers {
2     if ([leftUnitLabel.text isEqualToString:@"kilograms"] &&
[rightUnitLabel.text isEqualToString:@"kilograms"]) {
3         self.rightNumberLabel.text = @"1";
4     }
5     else if ([leftUnitLabel.text isEqualToString:@"kilograms"] &&
[rightUnitLabel.text isEqualToString:@"pounds"]) {
6         self.rightNumberLabel.text = @"2.20";
7     }
8     else if ([leftUnitLabel.text isEqualToString:@"kilograms"] &&
[rightUnitLabel.text isEqualToString:@"ounces"]) {
9         self.rightNumberLabel.text = @"35.27";
10    }
11    ...
12 }
```

The conversion part, show correct number according to the selected left and right picker component.

Exercise

- ✓ Can you further develop the unit convertor to fit your usage?