iPhone App Dev

Lesson 4

Source Codes

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

Contact

bryant.tang14mo@gmail.com

Summary

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

Animation

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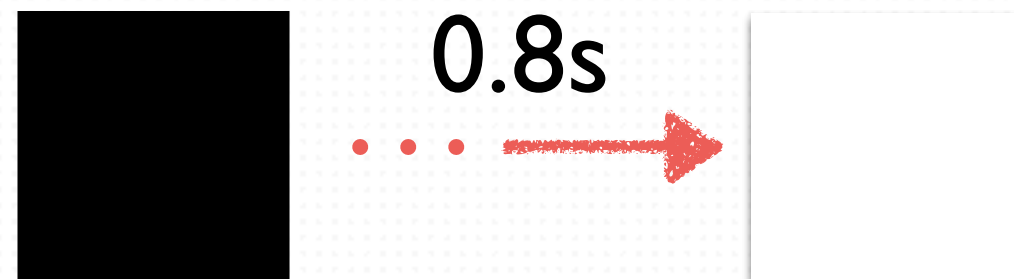 - transform
  - alpha
  - backgroundColor
  - contentStretch

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];

}];
```
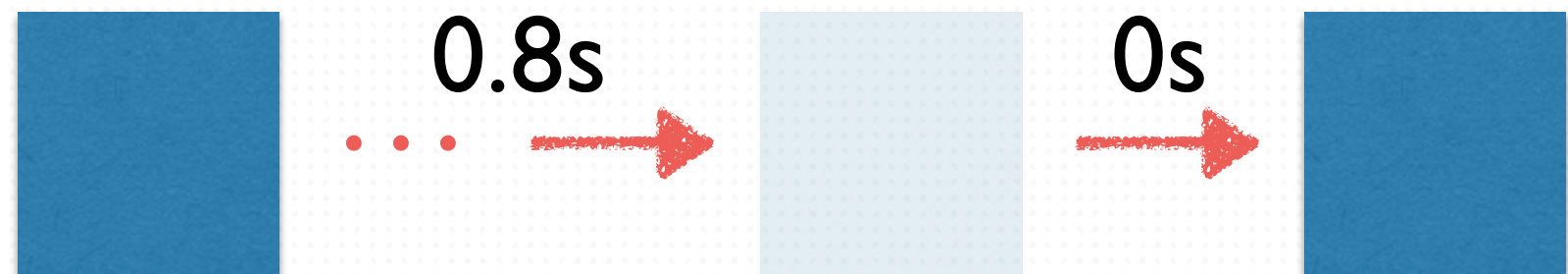
0.8s

Animation

- animateWithDuration:animations:completion:

```objc
// State A
   aview.alpha = 1.0;

[UIView animateWithDuration:0.8 animations:^{
        // State B
        aview.alpha = 0.3;

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

   }];
```

0.8s ••• →   0s →

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
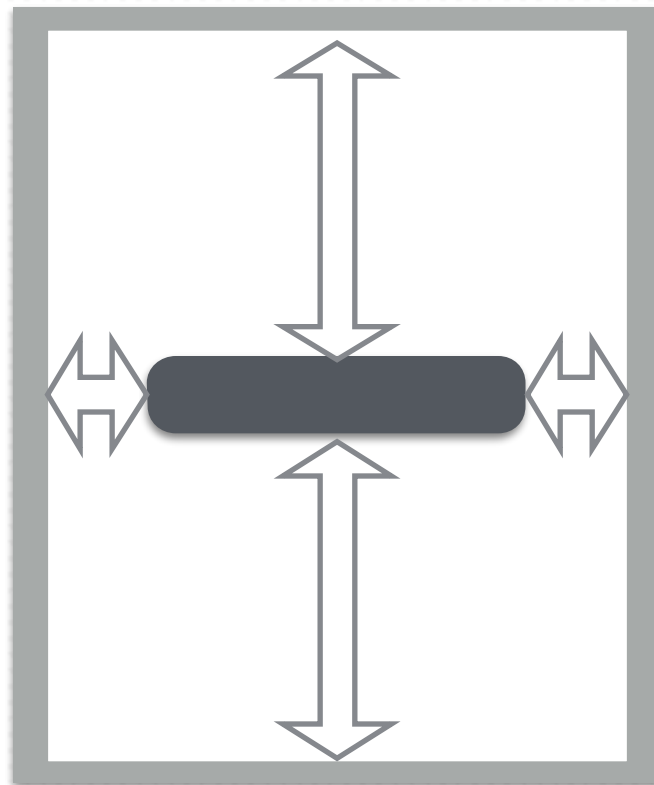
UI Constraint

UI Constraint

Why?

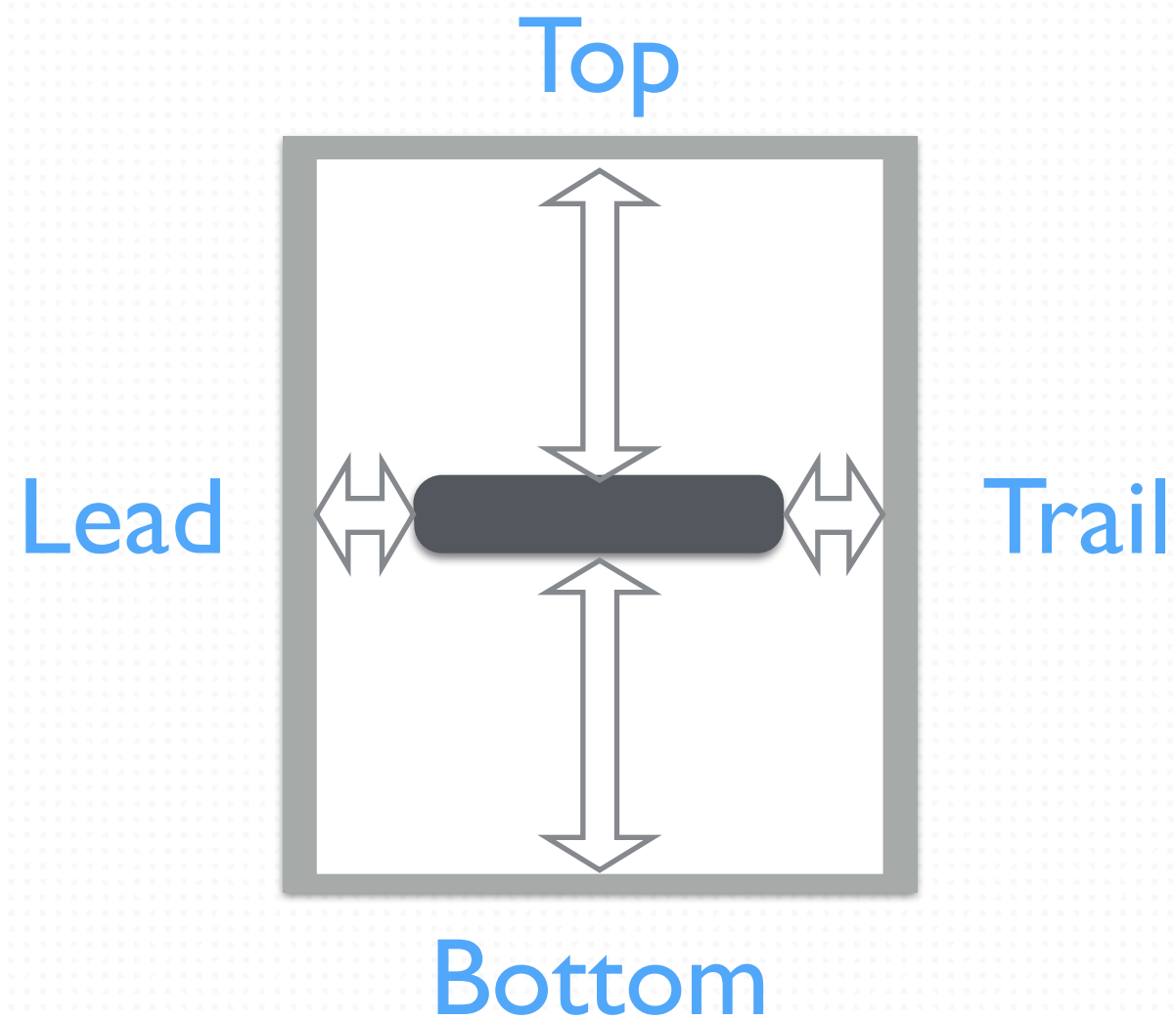Ans: To be responsive to different size of device
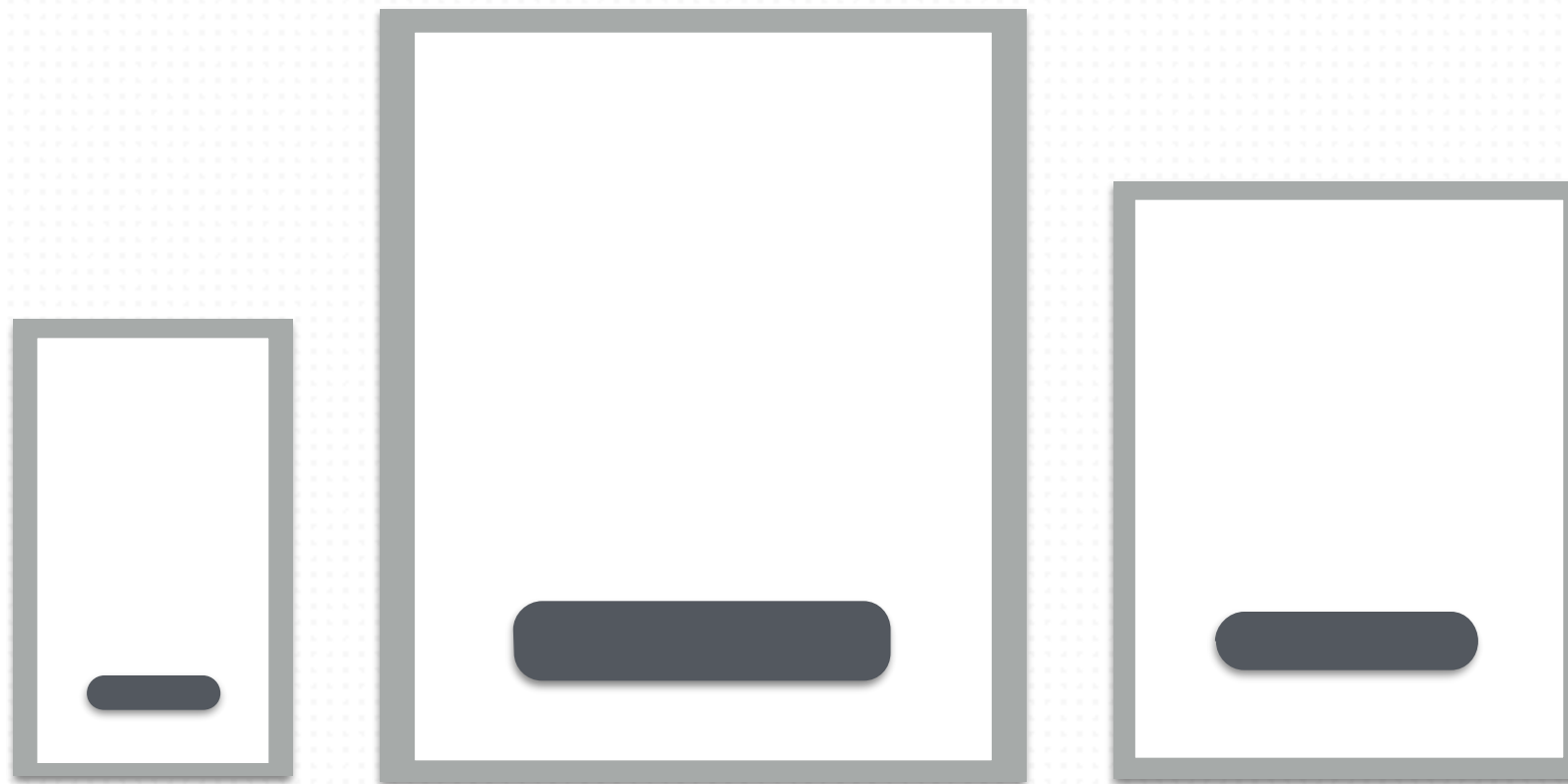
UI Constraint

How to implement in StoryBoard?
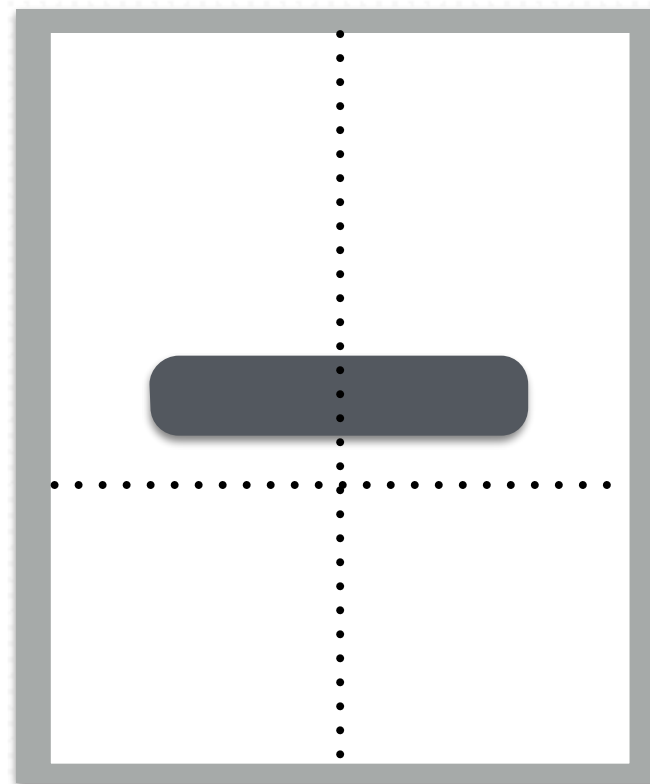
<< Constraint >>

UI Constraint

Constraint : Position

Top

Lead

Trail

Bottom
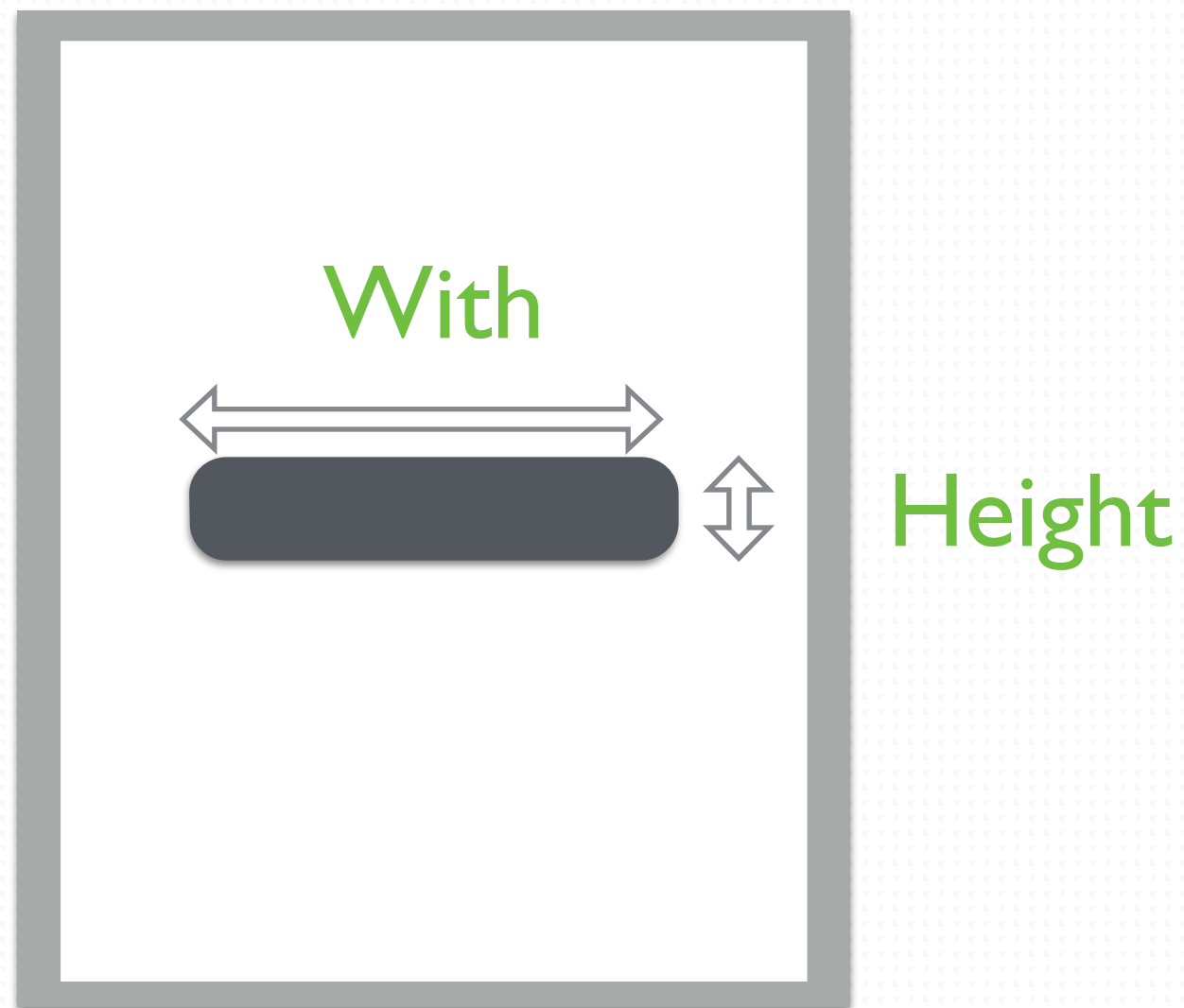
UI Constraint

Constraint : Position

Horizontal

Vertical

UI Constraint

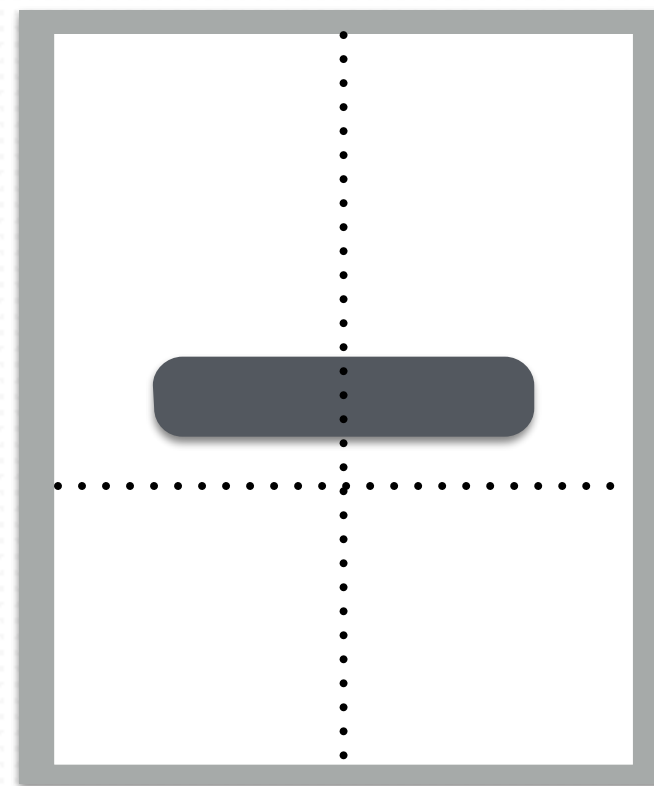Constraint : Size

UI Constraint

Two Objects involve

View   Button
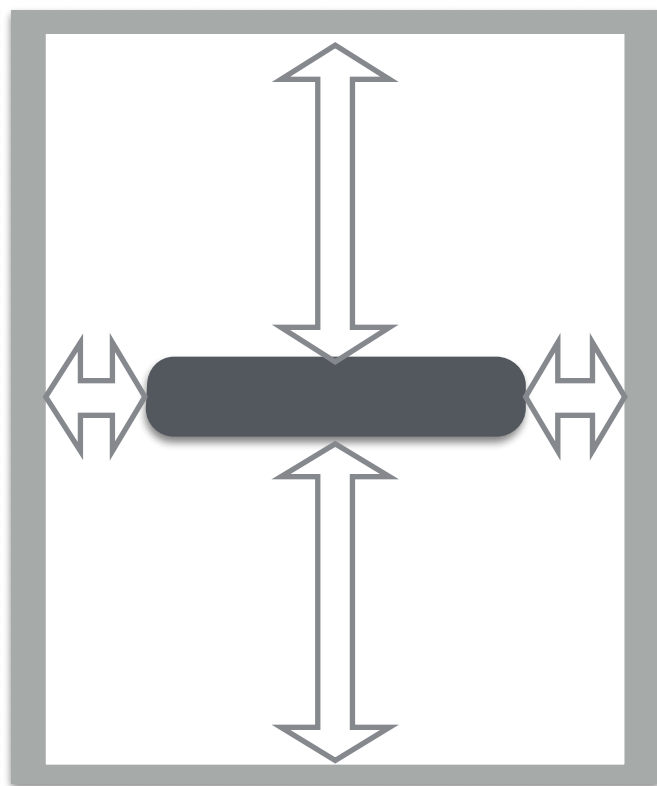
UI Constraint

One Object involve?

Button

With

Height

UI Constraint

Two Objects involve? **Yes**

View   Button

With
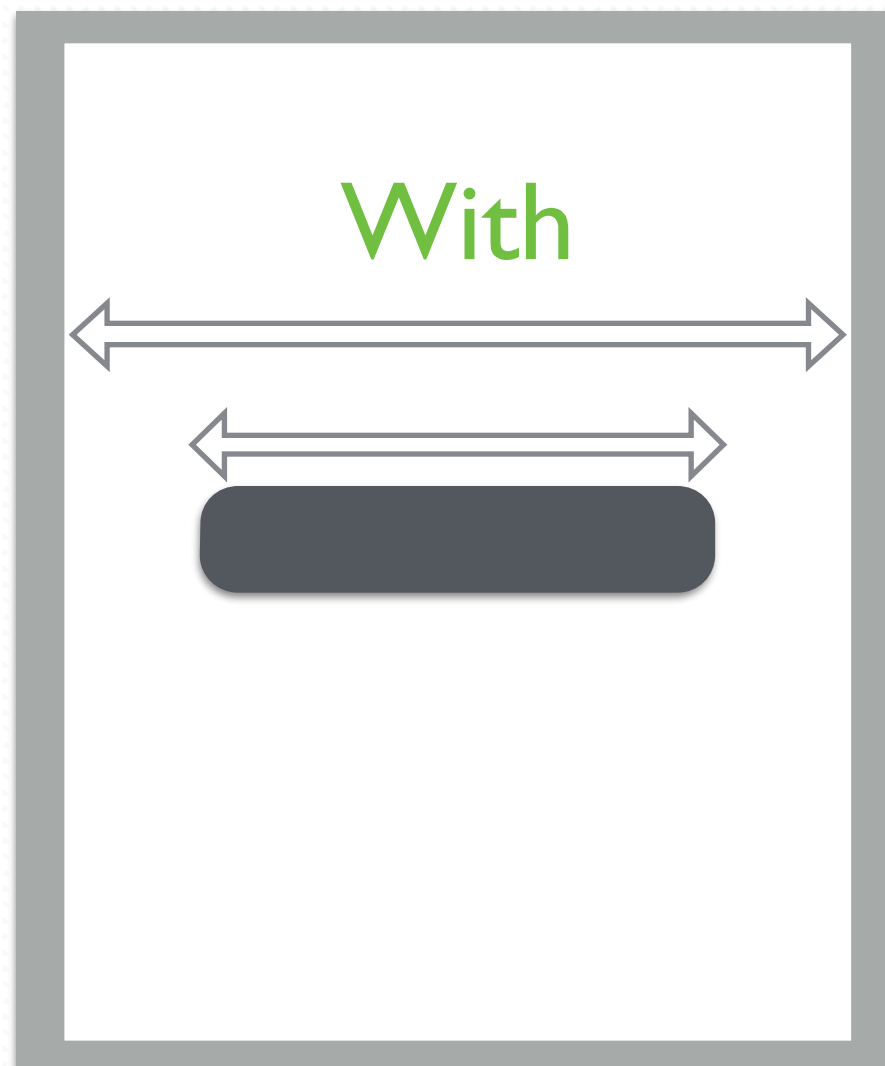
View's width : Button's width
2 : 1

Delegates

Delegates

Concept:

  To help an object complete certain task

Example:

- UITextField

- UITextFieldDelegates

- UIPickerViewDelegates

- UITableViewDelegates

Could you help me to do?

ObjectB

I do something for you
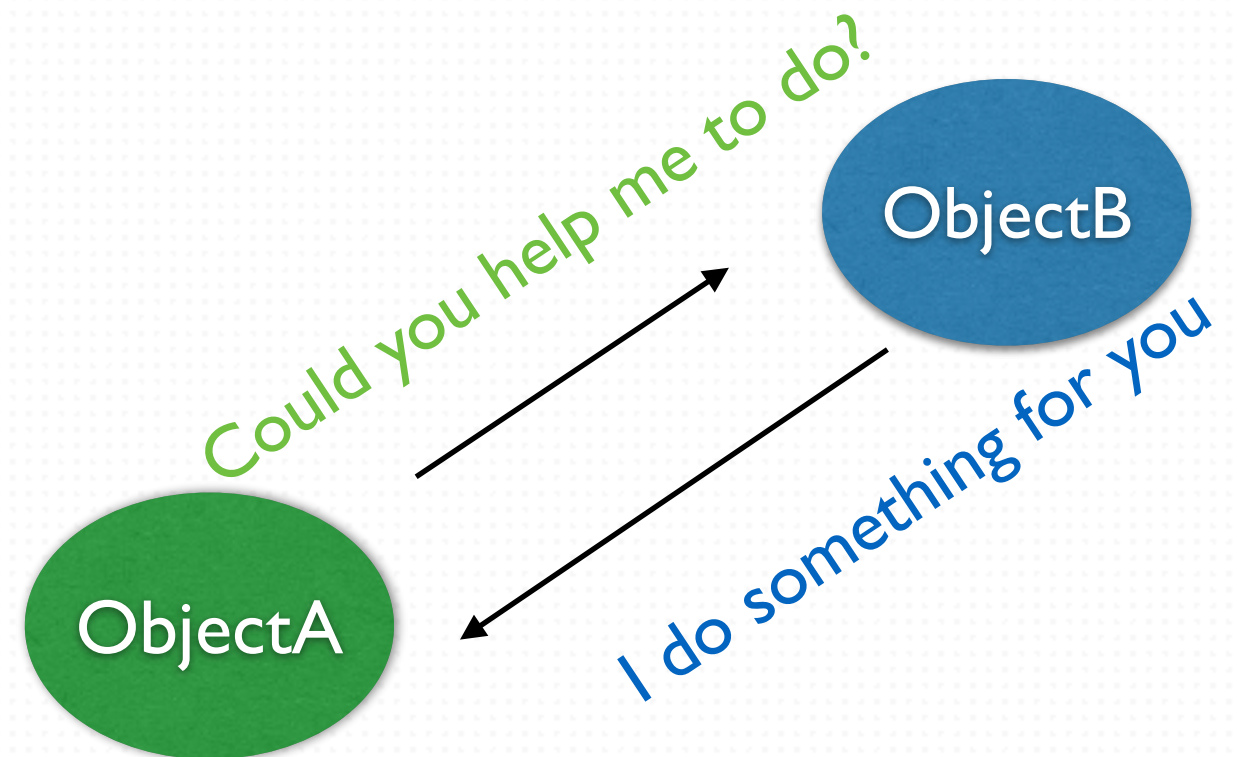
ObjectA

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
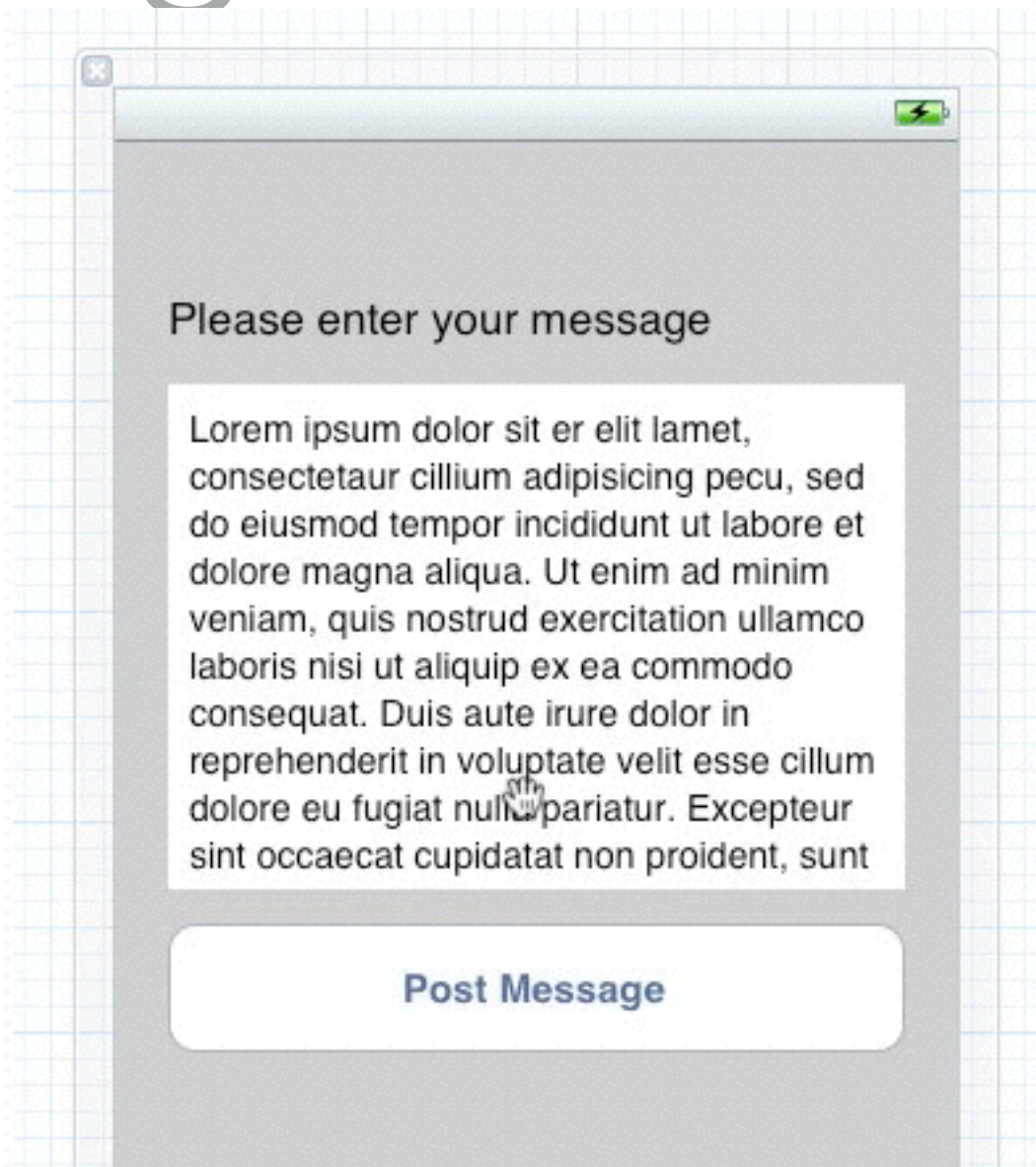
Prepare a view with UITextView

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

```objc
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

```objc
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

```objc
 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
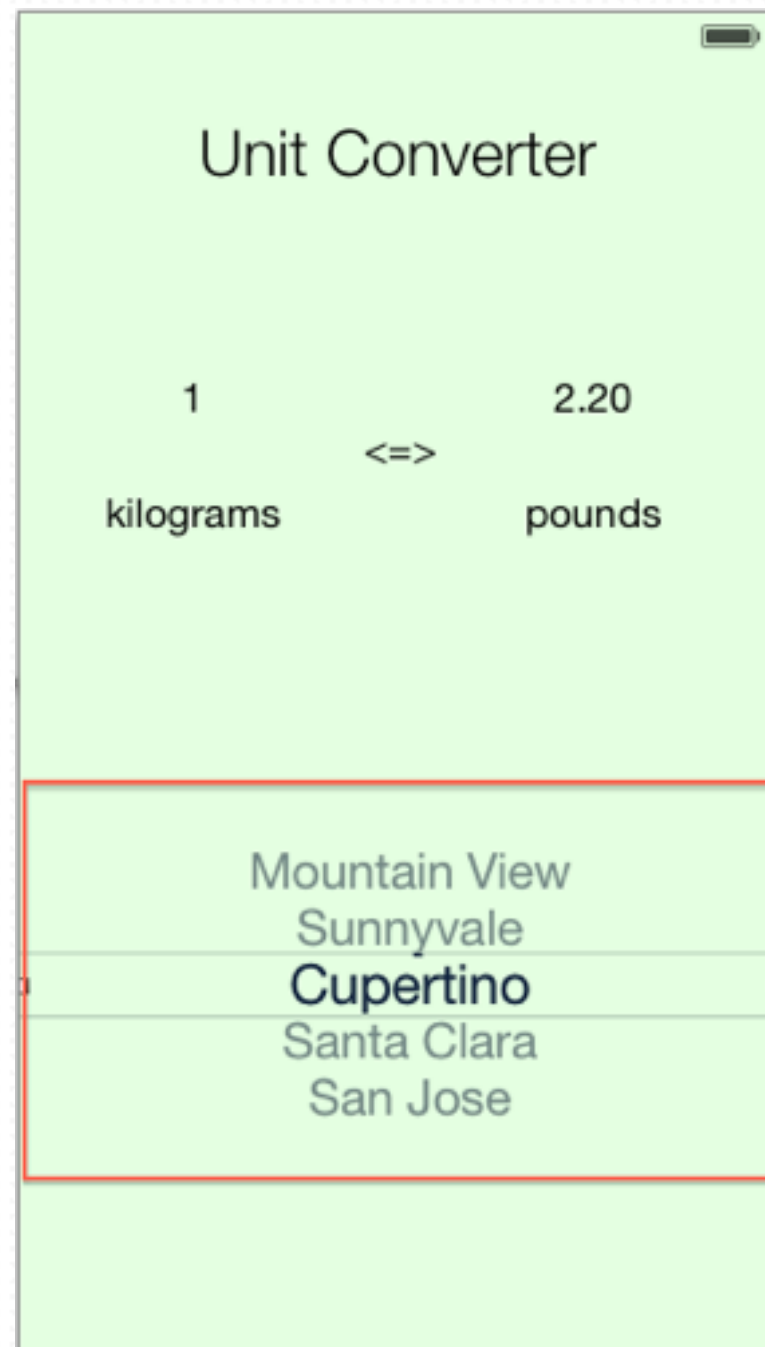
Using Picker

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
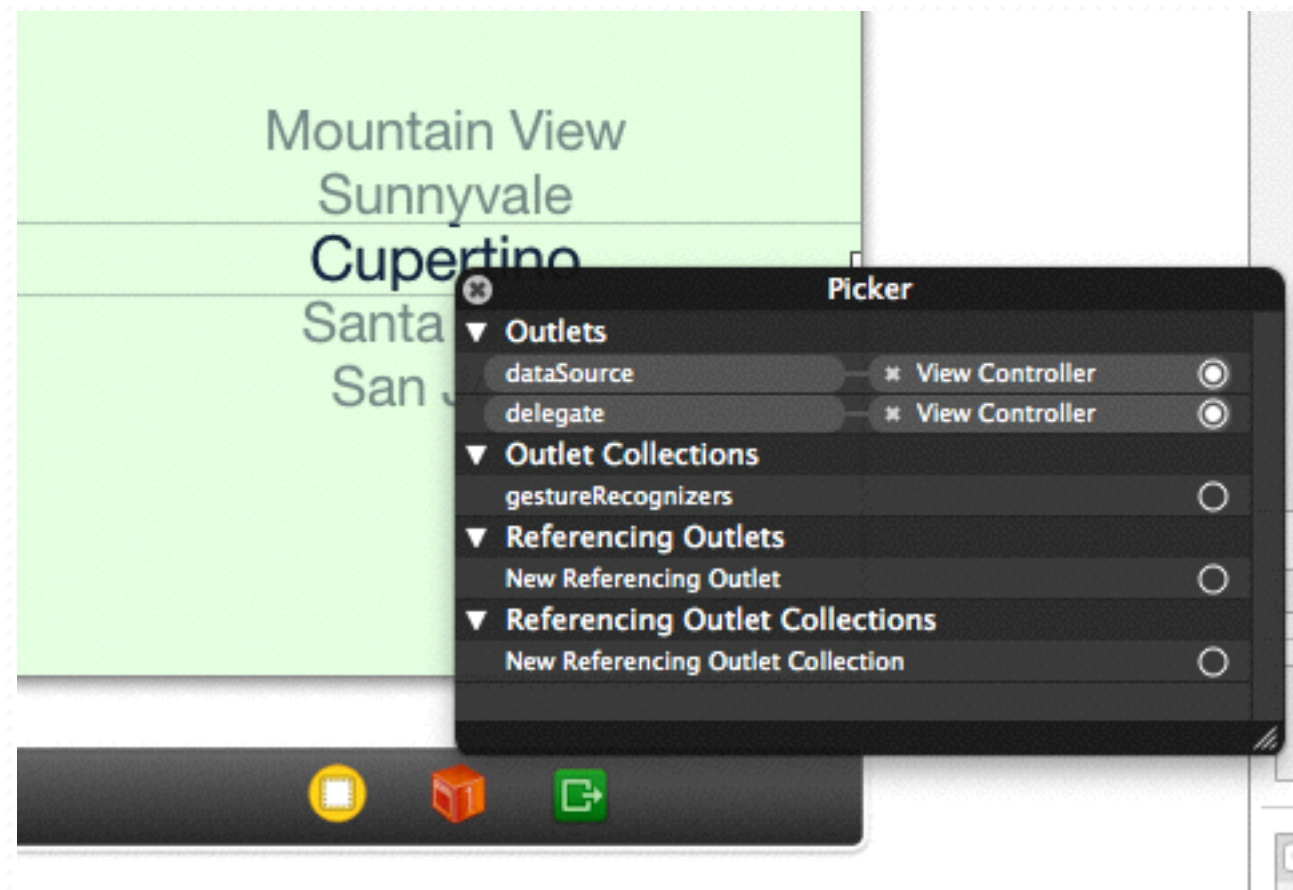
Drag a UIPickerView into the view.

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

```objc
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

```objc
 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

```objc
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)

```objc
 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

```objc
 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?