

From Drew, for next class...

- Form groups of 2 for project 2
 - Universal iPhone/iPad App
 - Anything you want
 - Even number of students, so every group needs to be 2 people
 - Next week you just need ideas to present to the class
 - Post ideas to blog before class
- Special Topic Next week
 - Need 3 students to volunteer
 - Topic: iOS App Store Economics
 - How do people make money on the app store? (iOS only)

Adding to your iOS skills

What can we do so far?

- In 2 classes, we've covered:
 - Basic Xcode
 - Storyboards
 - Debugging
 - UIKit Controls
 - Objective-C Basics and Syntax
 - Objects and Classes
 - Methods and Properties
 - IBOutletlets

What's next?

- Shorter lecture, more coding time
- We're going to touch very briefly on all of these topics:
 - Changing images programmatically
 - IBActions
 - Gesture Recognizers
 - UIAnimations
 - Scroll Views
 - Delegates and Protocols

Changing an Image from Code

- The image will need to be in your project
- You will need to create an IBOutlet to your image view. I called mine **mainImage**
- You will need to create a UIImage with the contents of that file
 - `[UIImage imageNamed:@"myfile.jpg"];`
- You will need to set the `image` property of your outlet to that image

Change the image based on restaurant

- Create a property on Restaurant with your image's file name
- Change the imageNamed line to reference your displayed restaurant

IBActions

- IBActions are special **methods** that are called when the user takes an action on your view

How to create an IBAction

- We'll connect it from our storyboard to our code in the same way as we did with IBOutletlets
- You'll need to connect something that the user can take action on, like a button or a gesture recognizer

Gesture Recognizers

- In this case, we're going to use a Tap Gesture Recognizer on the UIImageView, to make it appear larger
- Drag a tap gesture recognizer onto your UIImageView
- Set the UIImageView to have `userInteractionEnabled`
- Control-drag from the gesture recognizer (not your image) to your code to create a new IBAction
- A new method that appears in your `.h` and `.m` files
- Anything you do in this method will occur every time the image is tapped.

Tips

- You can set the frame of your image to be the size of your view using
 - `[self.mainImage setFrame:self.view.frame];`
- You may need to set your image to be in front of your labels

Other Gesture Recognizers

- Pinch
- Swipe
- Pan
- Long Press
- Rotation

- Note that Buttons and Switches and other UIControls don't need Gesture Recognizers, as they support IBActions directly.

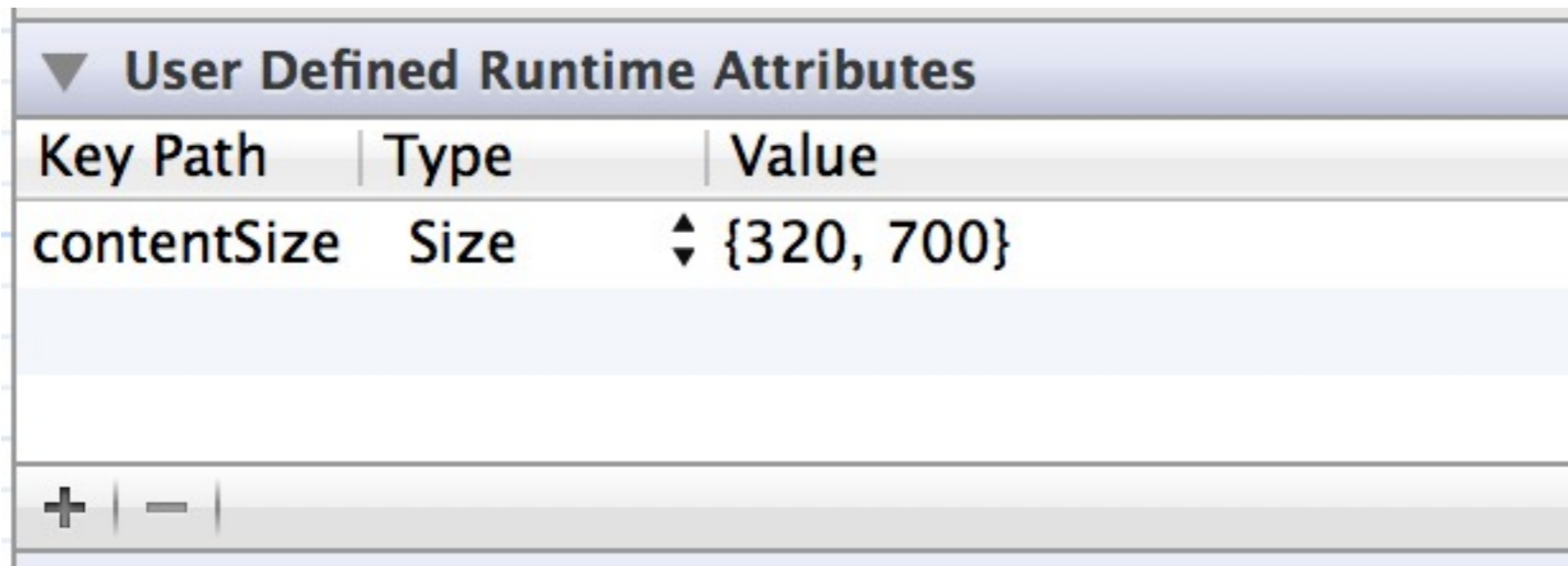
UIAnimation

- Most properties on UIViews, UIImageViews and the like can be animated.
- You simply begin an animation, change some properties, then commit the animation

```
[UIView beginAnimations:@"zoomAnimation" context:nil];  
[self.mainImage setFrame:self.view.frame];  
[UIView commitAnimations];
```

Scroll Views

- Add a scroll view to your storyboard
- Move your views inside it, to make them subviews
- Make the scroll view the full size of the view
- Add a “User Defined Runtime Attribute” called **contentSize** to the scroll view, on the Identity Inspector tab



The screenshot shows the Identity Inspector in Xcode. The 'User Defined Runtime Attributes' section is expanded, showing a table with the following data:

Key Path	Type	Value
contentSize	Size	{320, 700}

At the bottom of the table, there are plus (+) and minus (-) icons for adding and removing attributes.

Text Entry

- Use a UITextField
- Add an IBOutlet for the text field (to be able to get its value in code)
- Add an IBAction for when editing changed
- Add a UITapGestureRecognizer to your main view to hide the keyboard when the user taps outside the keyboard via an action

Protocols, Delegates, and Data Sources

- Protocols are like interfaces, they explain what methods a class will have
- A delegate is a class that provides methods to a view that will be called when that view changes.
 - The delegate class “conforms to a protocol”
 - Example: UIScrollViewDelegate
 - If you implement `-(void)scrollViewDidScroll`, your method will get called whenever the user scrolls
- A data source is a class that provides methods that provide data
 - Example: UITableViewDataSource
 - `-(NSInteger)numberOfSectionsInTableView:(UITableView *)tableView`

Assignment

- Ensure Assignment 1 and Assignment 2 are complete
- Open-ended assignment: challenge yourself to do something fun!
- I'll be looking for functioning code that shows your level of understanding of the language
- If you go too far and break everything, send me 2 zip files, one with the working code and one with your bold attempt

Ideas for Assignment

- Choose from some of these, or come up with your own!
- Add additional fields to the restaurant, and show them all in a scroll view
- Show a map on the restaurant page
- Set up the MasterViewController to show all 3 restaurants, and pass them to your DetailViewController.
- Add a stepper control to the restaurant page to change the number of guests, and have it show the updated total
- Add an editable field to the restaurant page to allow the user to type the number of guests in with the keypad (note that I didn't say keyboard)
- Add additional image views, backed by restaurant images

Ideas for Assignment

- Make properties out of the restaurants on the Detail View Controller
- Add an NSArray of restaurants to the Detail View Controller
- Add swipe gesture recognizers to change the current restaurant
- Add a photo gallery (this one will be more challenging)
- Add a “call” button for the restaurant that calls the restaurant
- Crossfade the main images to cycle between restaurant images