

Moar Storyboarding with Segues

LAB 03: Storyboarding

Objective

This is it. Once get through this you will be ready to start ninja training. Software programmer ninja training, that is. This lab should leave you with a basic familiarity with the the main features of **Storyboarding**. I know you haven't reached mastery yet. But, we're talking about the basics here. This is your foundation with Xcode.

Once this foundation is in place we can start working on things like:

- Object Oriented software design,
- the iOS framework and all that it offers,
- did I mention ninja training?
- other fun things.

Okay, ready? Let's get started.

Again with Xcode

Xcode should welcome you with a screen like this.

If you see this window, hit **Cancel** to dismiss this window.

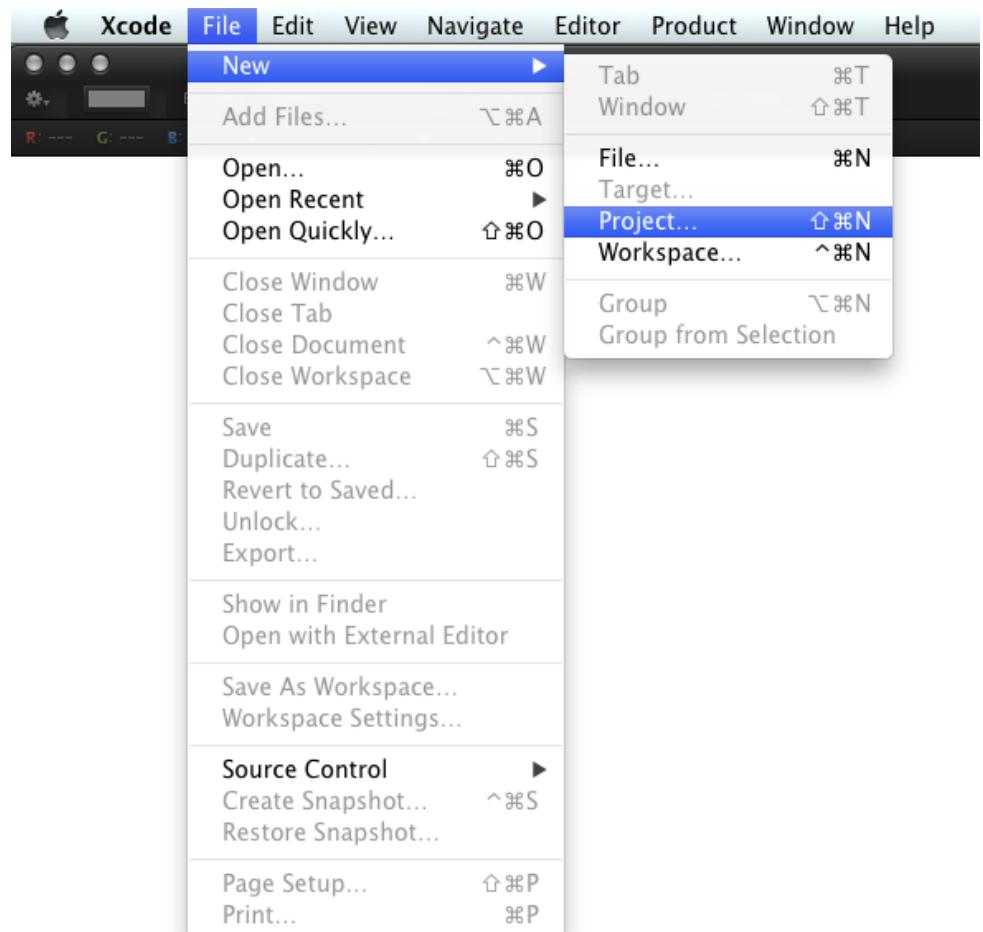
If you left a project open the last time you used Xcode, you'll see it instead of this window. Close your old project. We're going to create a new one.



Create a new project.

With Xcode still active, go to the top menu bar and select:

File > New > Project



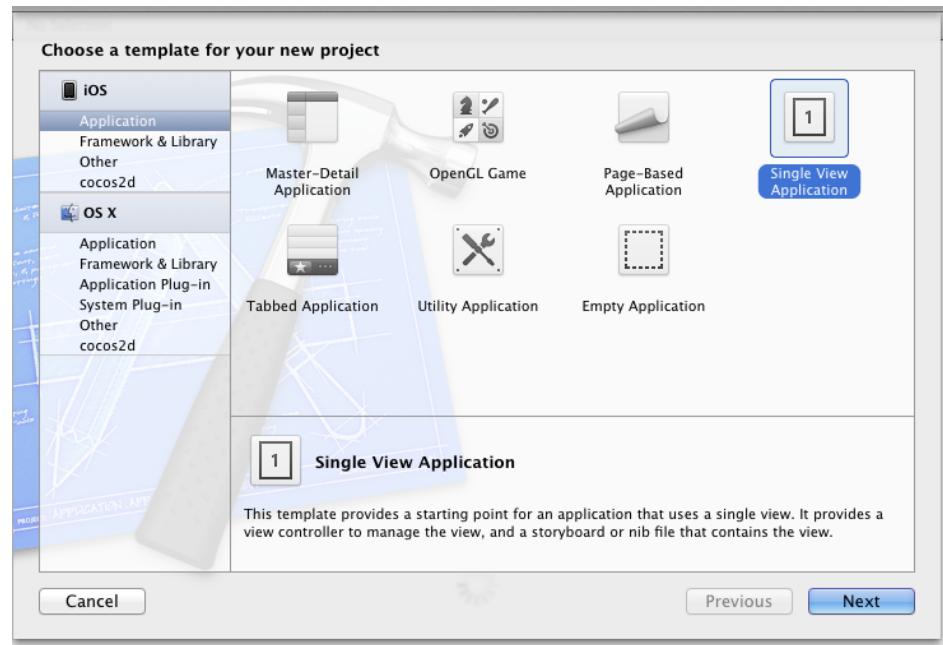
Select a project template.

We'll use the **Single View Application** template.

Make sure that the **iOS > Application** menu item is selected on the left.

Then, make sure that the **Single View Application** is selected on the right.

Press the **Next** button to create your project.



Configure your project

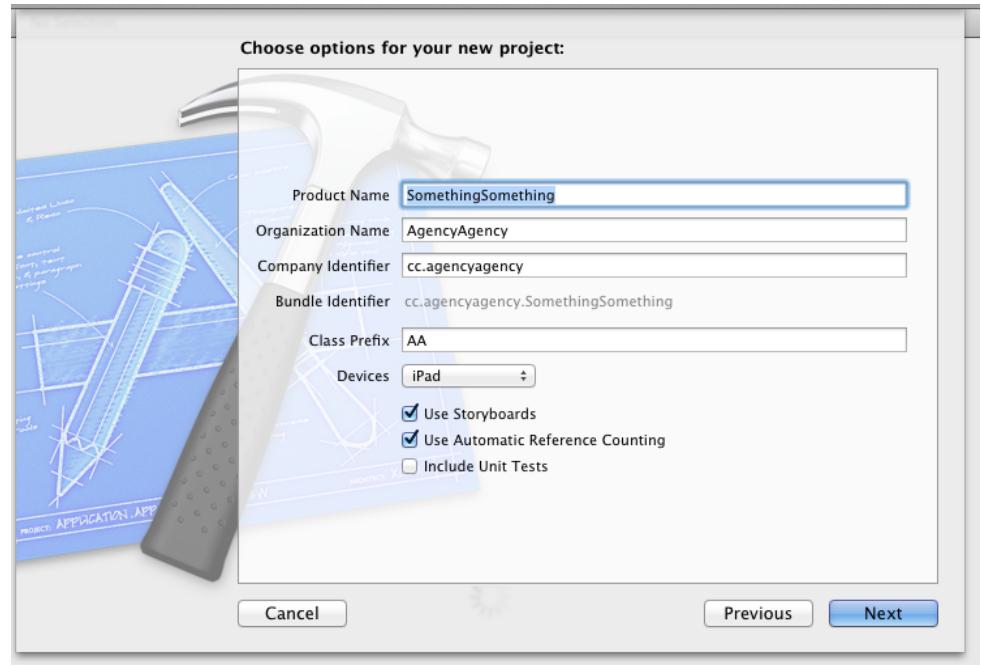
Make it look like this.

But change the **Product Name** field to something like “Thinger” or somthing. Or, if you’re boring, “Lab3” or something.

Select **iPad** under **Devices**. And, be sure that the **Use Storyboards** check box *IS* checked.

Also, you ALWAYS want to have **Use Automatic Reference Counting** checked.

Hit **Next** to continue.



Put your project somewhere

Xcode is now ready to spit out your project. But, it needs to know where to put it. You have to give it a location on your computer to use.

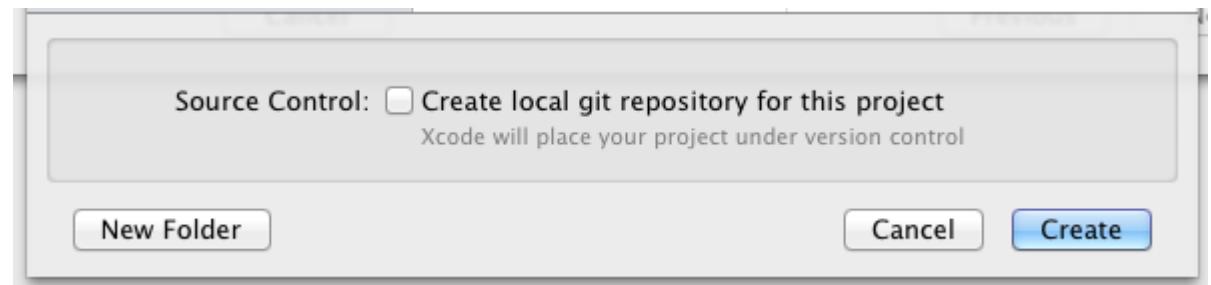
I suggest creating a “work” folder under your user’s home directory.

Other good options are **Documents** and **Desktop**.

It’s really up to you. But, once you find a good place. You’ll probably want to stick to it, so as not to have projects “all over the place.” That said, you can change your mind about this later. It’s just a folder.

You’ll notice a **Source Control** checkbox on this screen. You can leave that unchecked for now.

Hit **Create** to *really* create your project now.

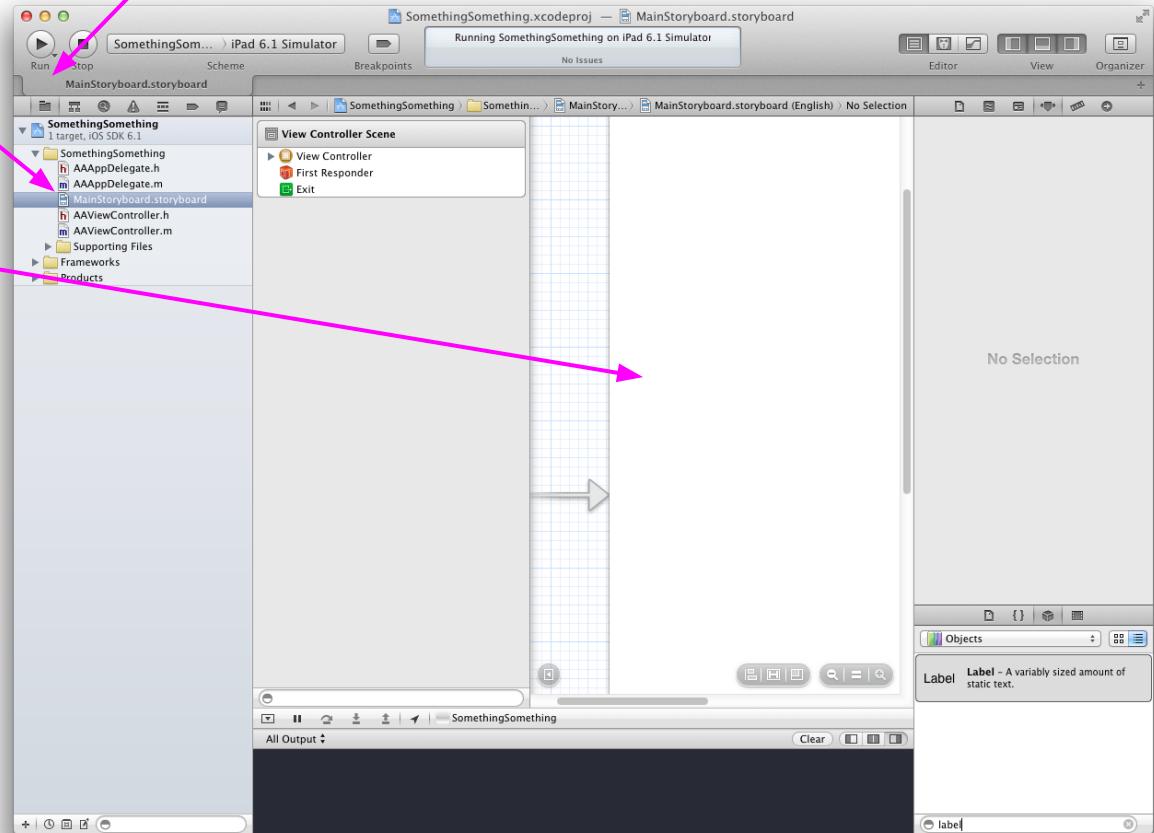


Find the Storyboard

Make sure the Project Navigator visible in the left-hand pane.

Then select the **MainStoryboard.storyboard** file.

Xcode will then display your storyboard in the center pane.



You need a Navigation Controller.

What? What's a Navigation Controller, do you ask? I don't want you to worry about it too much right now. I just want you to have a general feel for what it is.

You see that blank white scene, currently sitting on your Storyboard? That's a plain old View Controller. You're going to see a lot of those in the next few months. They're like blank screens for your iPad. They're like a page in a book. A blank canvas. They're the thing you put views (content) and controls into. (We'll discuss what a control is later).

You've already seen views. You added a bunch of colored ones to your View Controller in the last lab.

One way to think of a Navigation Controller is as a View Controller that is able to contain other View Controllers.

How about an example?

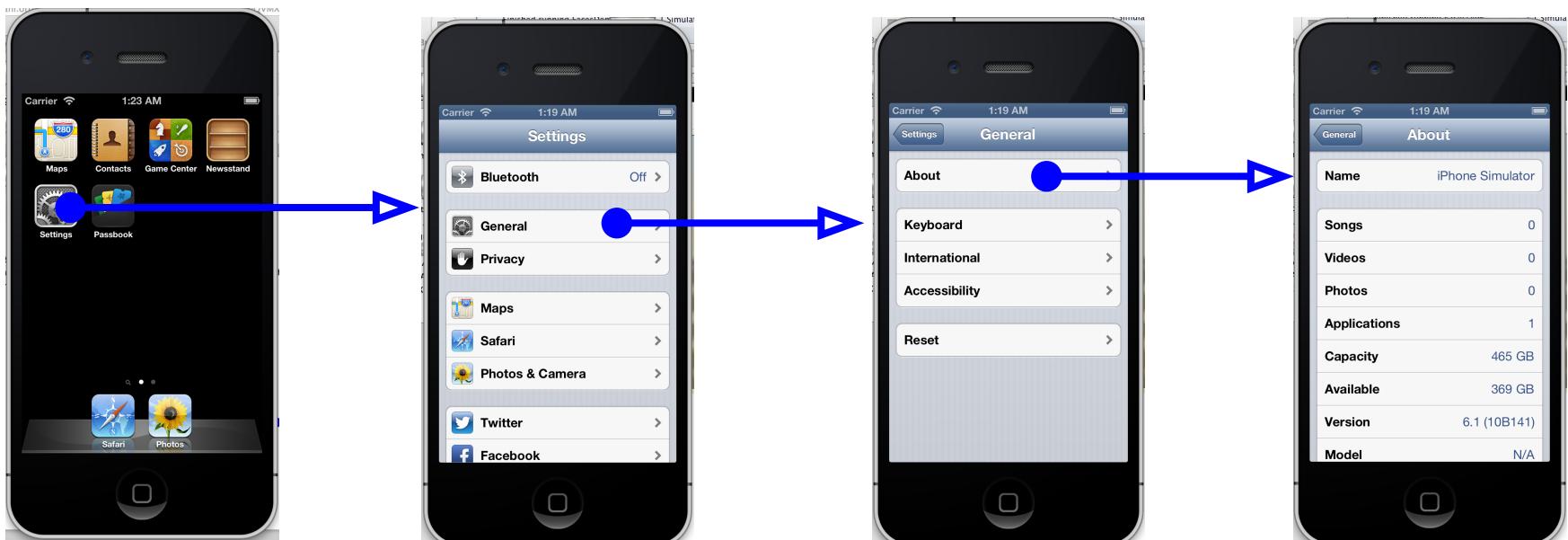
I'm going to assume you're familiar with the **Settings** app on a typical iPhone. That's okay if you're not. Just go find the closest hipster and ask to borrow their phone. (They'll get nervous when you open the **Settings** app, so be careful.)

Launch the **Settings** app.

Check out the images below. Notice what happens when you tap the **General** option. An entire screenful of content “pushes” over the first screen.

Now tap on the **About** option. Another screenful of content covers the **General** screen.

Each of those “screenfuls” of content is a View Controller. They are **all** embedded in a Navigation Controller.



Continued...

If you press the button in the top left corner, it will take you back to the previous screen. You'll notice that the button has the name of the previous screen on it (so you know where you're going back to).

The Navigation Controller gives you this for free. What I mean by "free" is that you don't have to do any special coding to get that "back" button to appear. You have to use the Navigation Controller that Apple provides. We'll do that in a second.

For now, I just want to reiterate that there is one Navigation Controller, and it contains each of these View Controllers (three pictured below).

Read this from right to left.



Need more space.

In order to build things, we need to see what we're working on. Screen size is an issue here. Sorry to say it, but our laptop screens are small. That said, we can still get our work done here.

Here's how we can get a little extra screen real estate.

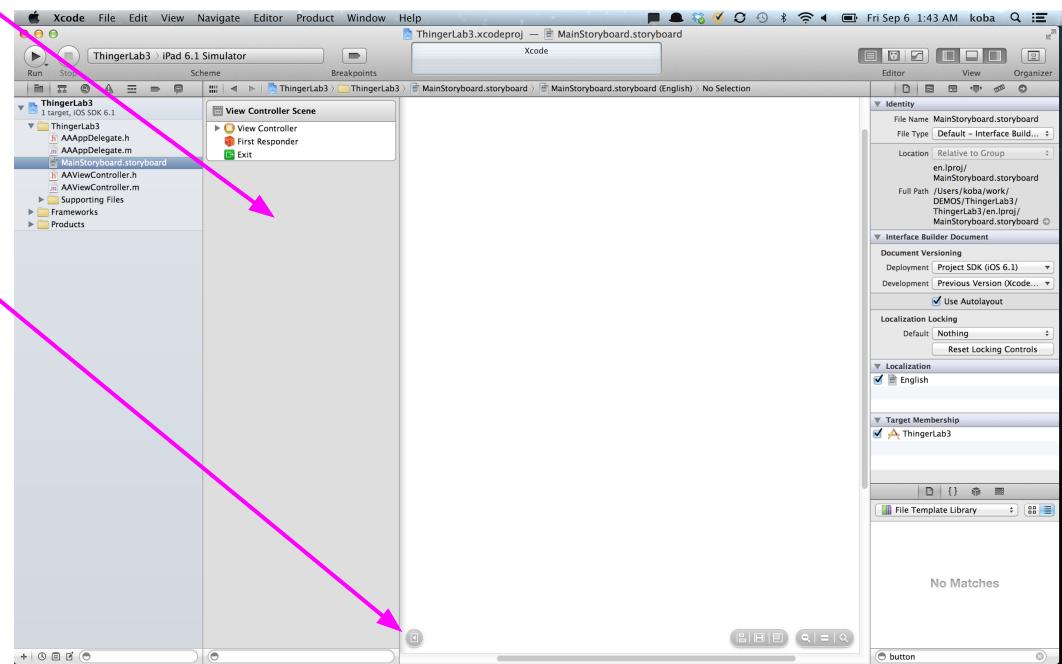
See this giant gray column?

That's the Document Outline. It's super useful.
But you don't need it right now.

Press this little button right here to move it aside.

This frees up a little bit of space. Press the button again to get the Document Outline back again.

Make sure you move it aside for now. Also, remember that it's there, because it will be useful in the coming days.



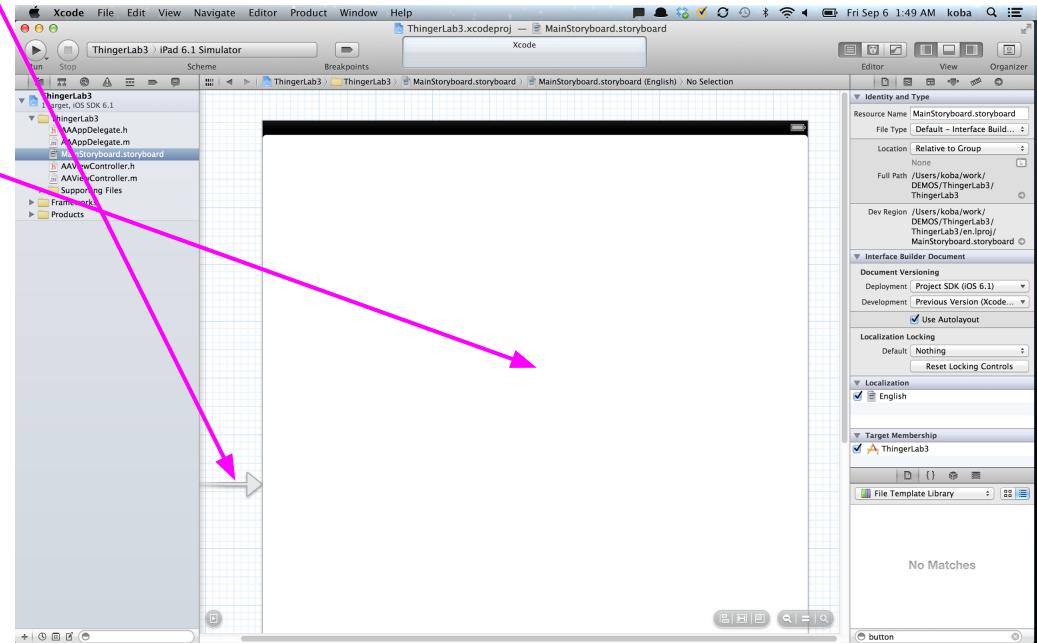
A little more space.

Your Storyboard should now look something like this.

Allow me to show you around. This little arrow thingy here tell Xcode where you want your app to “start” from. This is the first View Controller that you will see when the app launches.

This big white thing with the black bar on top. That’s your single View Controller. This template just gives you one.

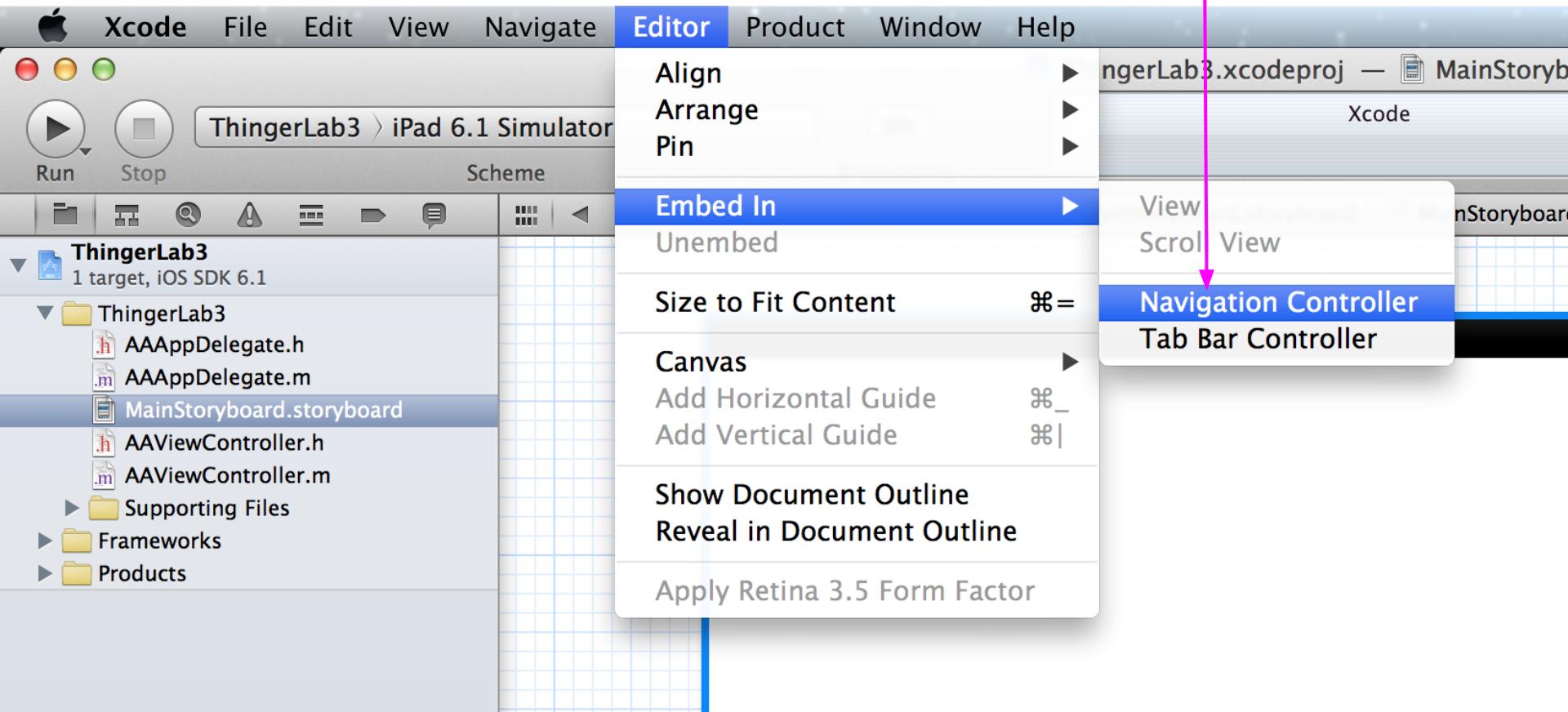
Now about that Navigation Controller...



Embed in a Navigation Controller

Tap on the View Controller one time to select it. If you tap on the black bar, the entire View Controller will get a blue outline. Either way, if you tap on anywhere in the View Controller you're set.

Then go to the top menu bar and select the **Editor > Embed In > Navigation Controller** option.

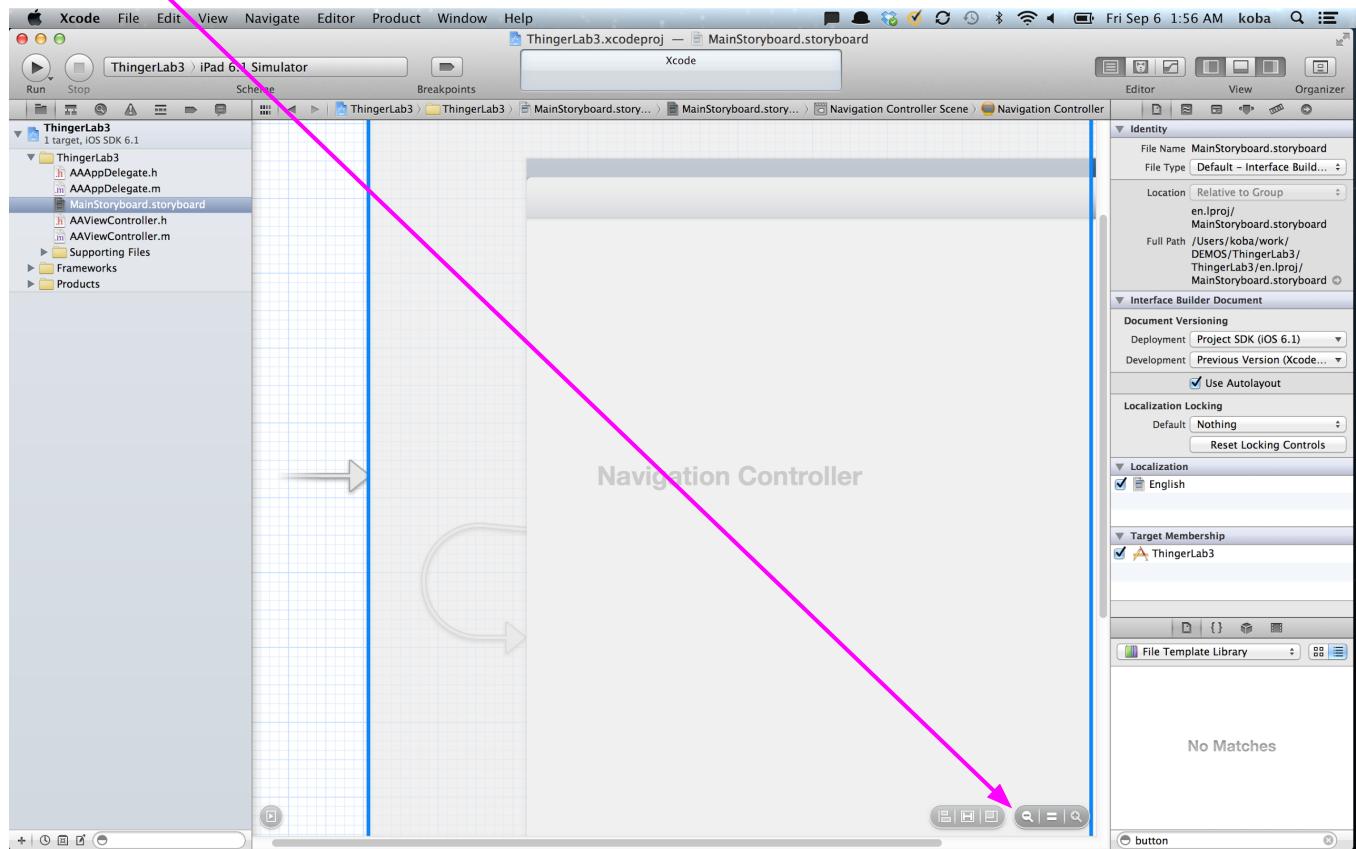


OMG What is this?

You're right to be confused right now. The problem is, our screen is too small to deal with these massive iPad screens. You're beginning to see why programmers spend thousands of dollars on large monitors.

Don't worry, help is on the way.

Tap on the “minus” magnifying glass twice. This will zoom you out a bit.

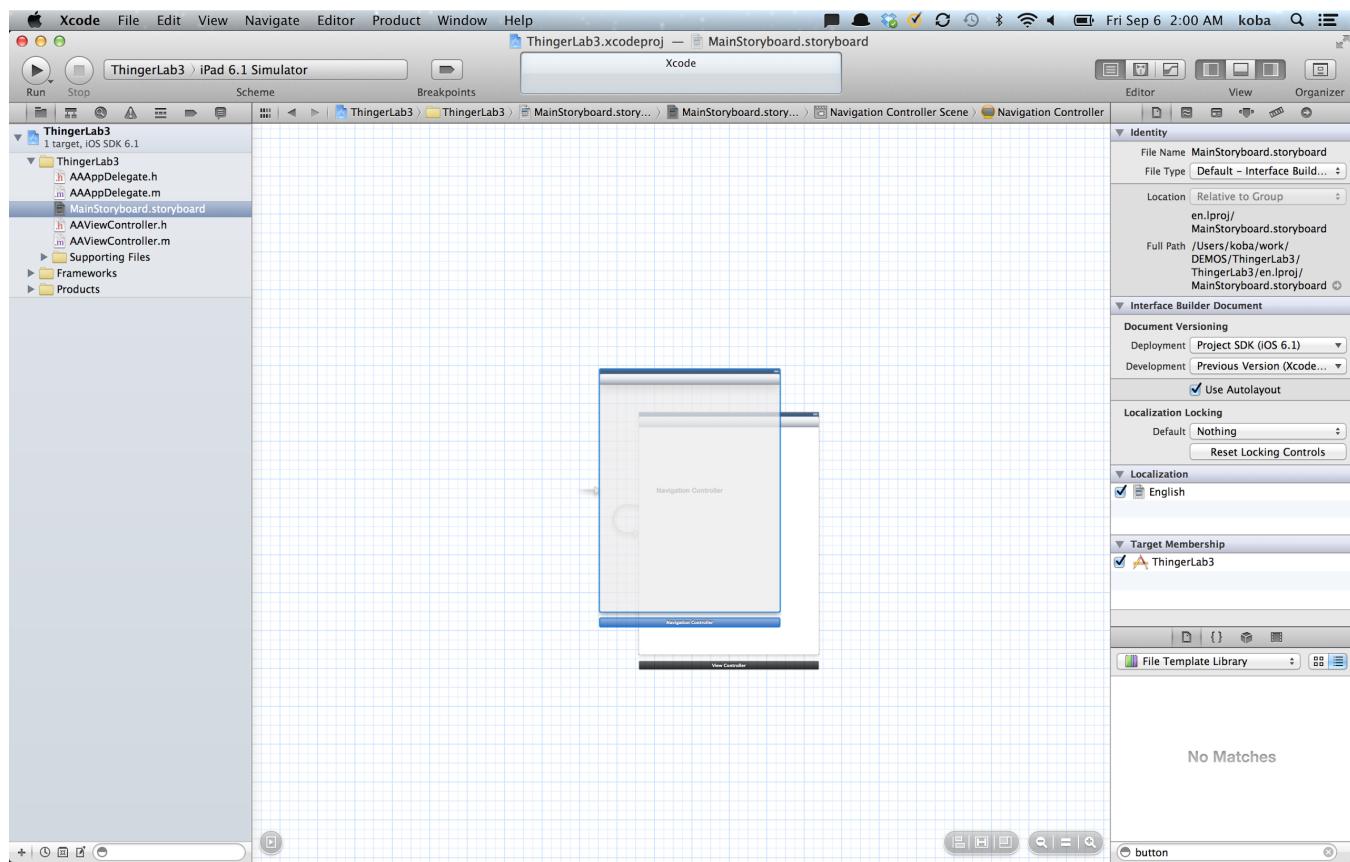


Zoomed Out

You can now see all the screens, along with ample breathing room on the top, bottom, and sides.

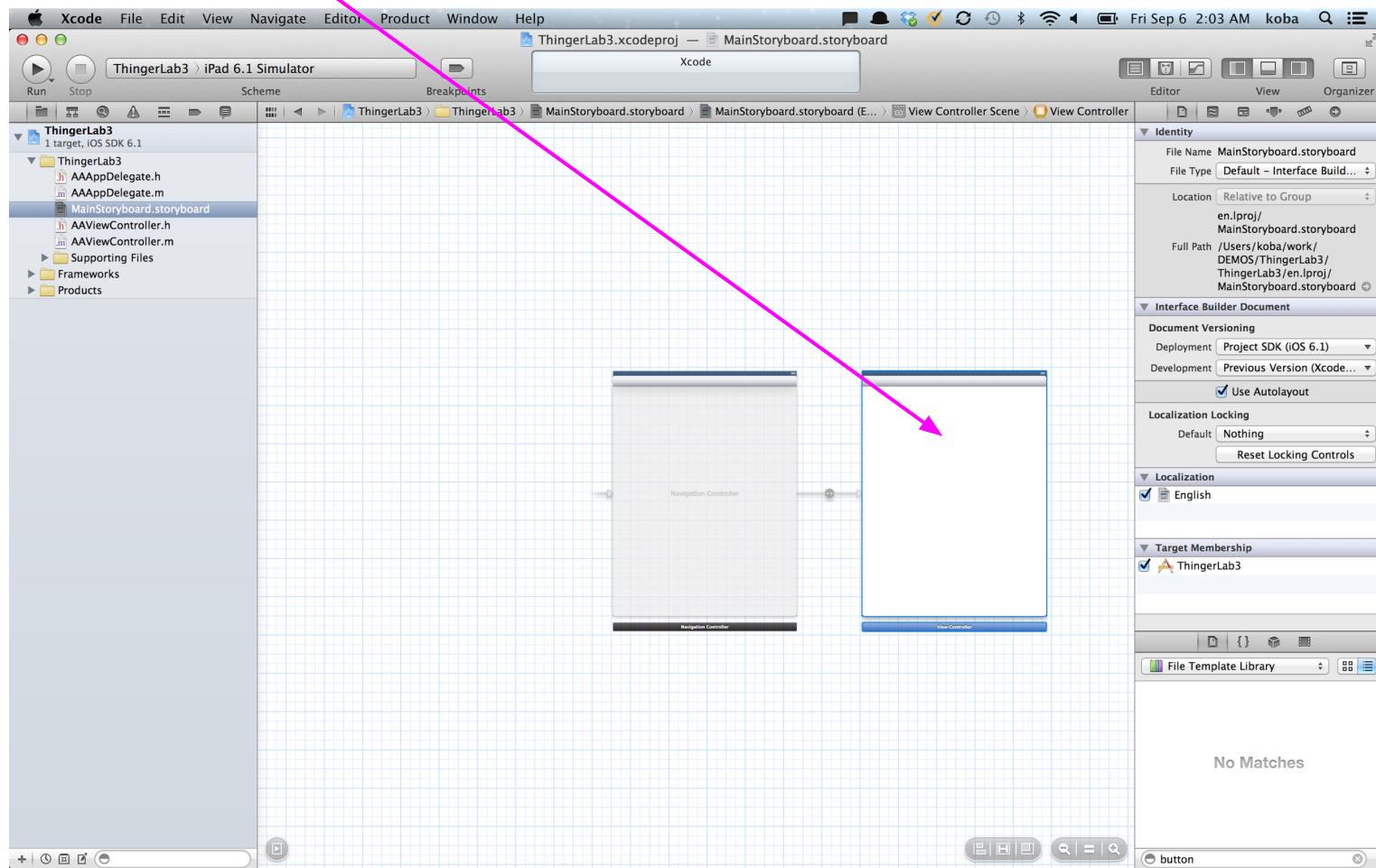
The good news is that this makes moving things around easier. The bad news is that you can't do everything when zoomed out.

For now, let's just move the View Controllers around...



Lay them out straight

Click and drag the white View Controller, so that it is aligned nicely to the right of the gray Navigation Controller.



Adding things

Now you'd like to add somethings. Like, for example a button. Let's add a button.

To do this make sure you have the Object library selected.

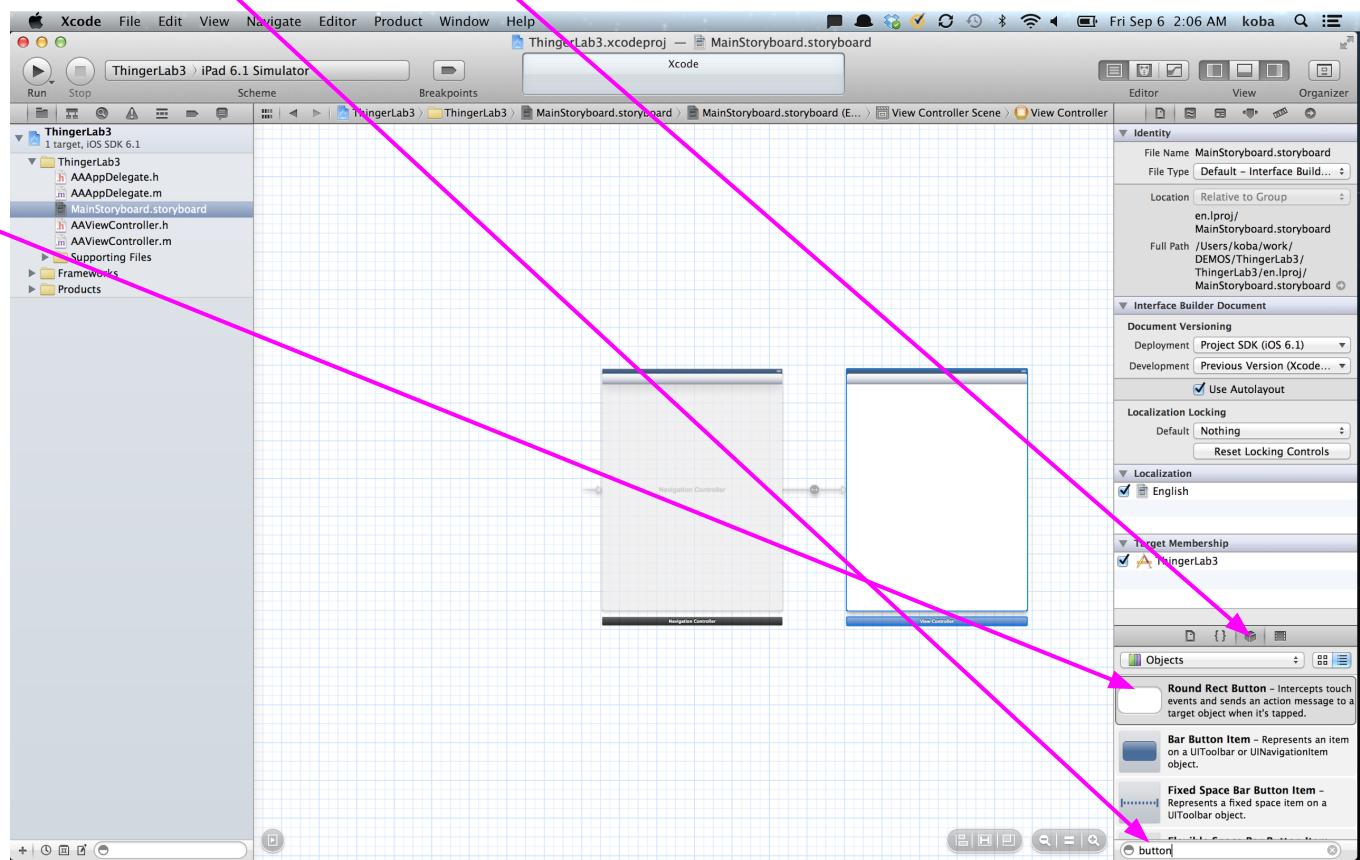
Then, in the tiny, bottom right-hand search box, type the word "button" in.

You should now see the **Button** object in the search results.

Try to drag and drop this Button onto your white View Controller.

WARNING: It won't let you.

It turns out, this is one of the things you can't do while zoomed out. You can't add objects to your View Controllers at this zoom level.



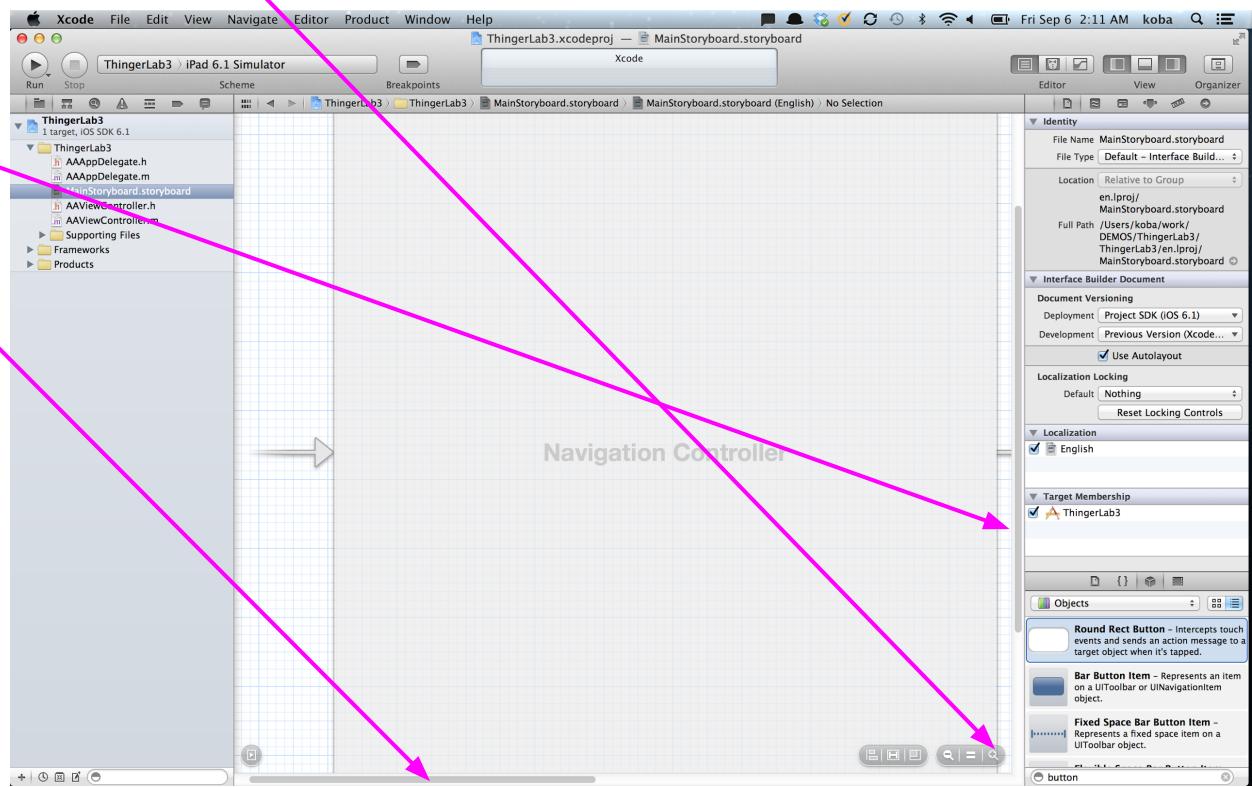
Zoom back in

Press the “+” magnifying glass button twice to zoom back in.

Again, it's difficult to see exactly what's going on here.

Use the scroll bars

or, scroll with your trackpad to find the white View Controller again.

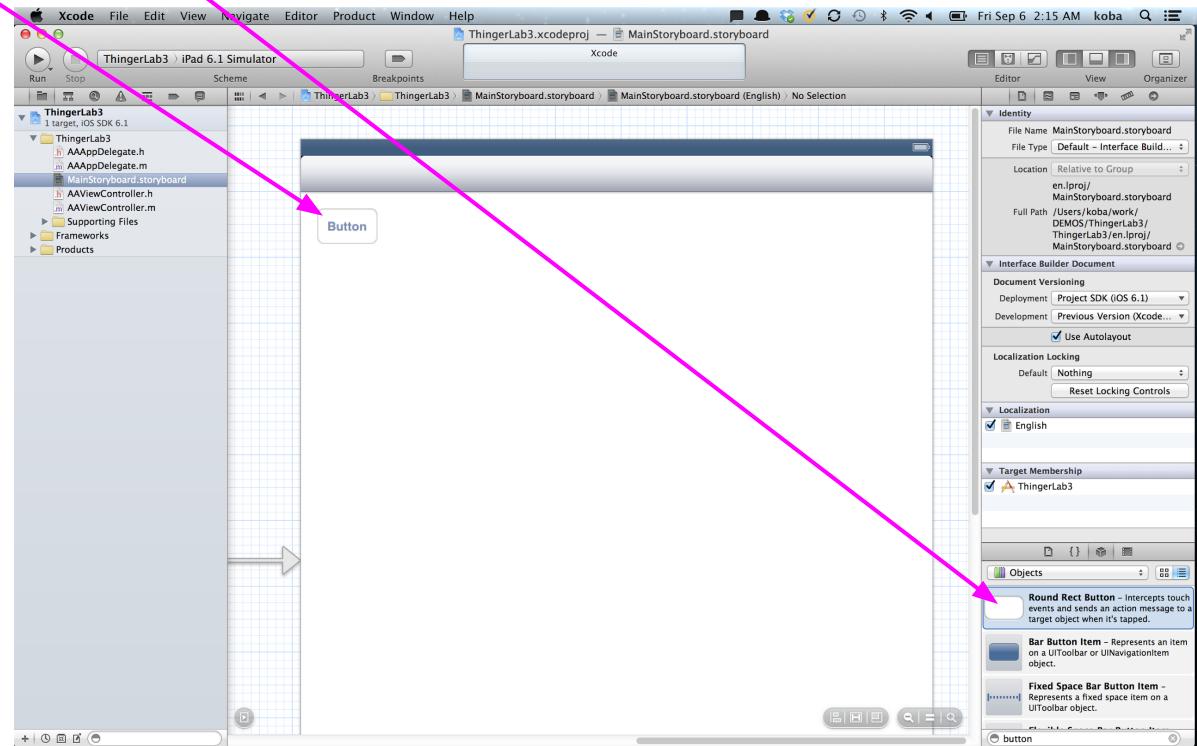


Add a button

Try to drag and drop the **Button** onto the white View Controller again.

This time it should work.

You should see a button with the title of “Button” sitting wherever you dropped it..



Add another View Controller

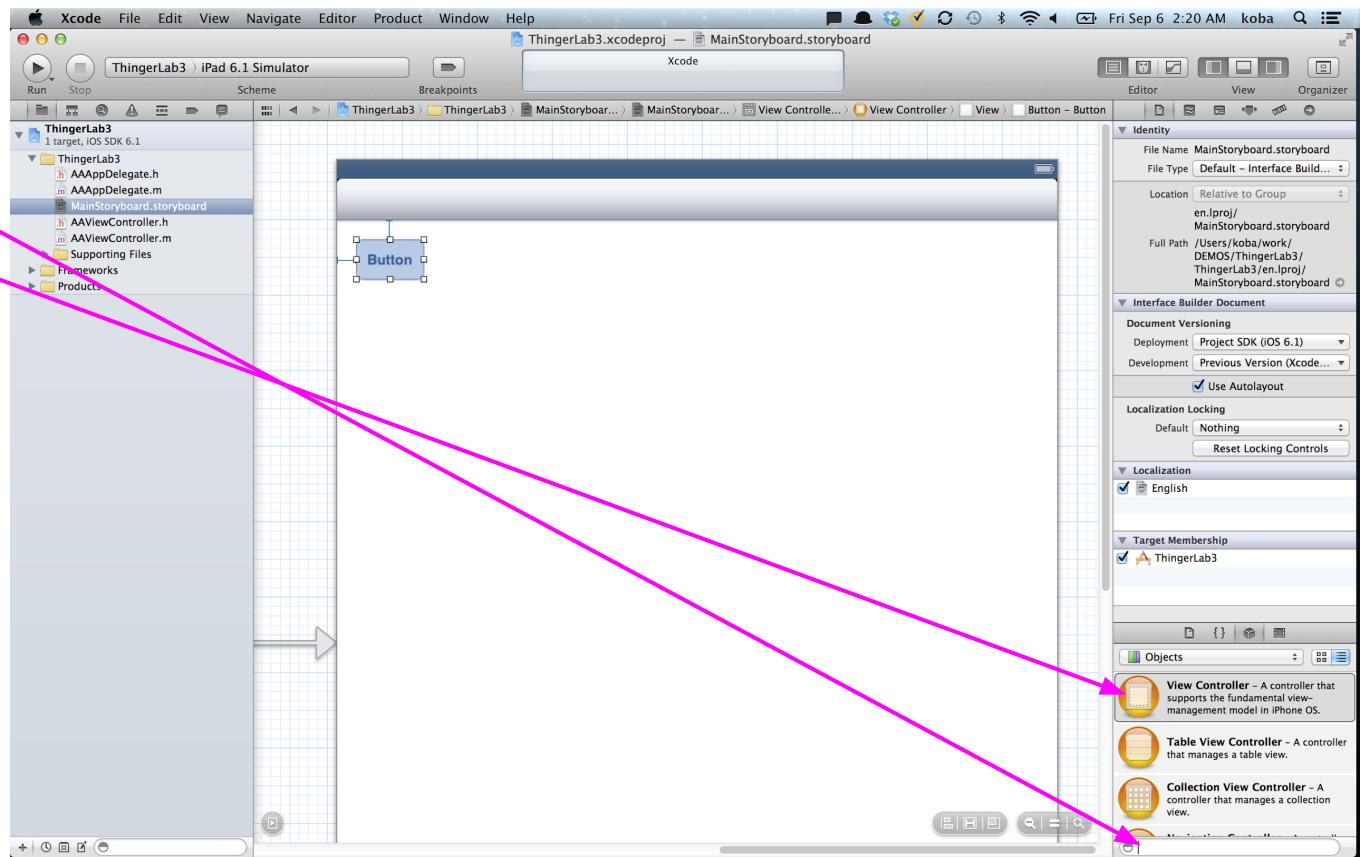
Of course, the entire purpose of adding using a Navigation Controller is to have multiple View Controllers embedded in it. And, of course, the entire purpose for having a button, is so that you can press it and make something happen.

Let's use this button to "push" a new View Controller onto the screen. Adding it to the stack of View Controllers contained in your Navigation Controller.

Clear the **Object library's** search bar.

Find the **View Controller** object in the list of objects.

Next you'll drag this onto the Storyboard, but before you do that read this... (next slide)



Pro Tip: Zoom out first

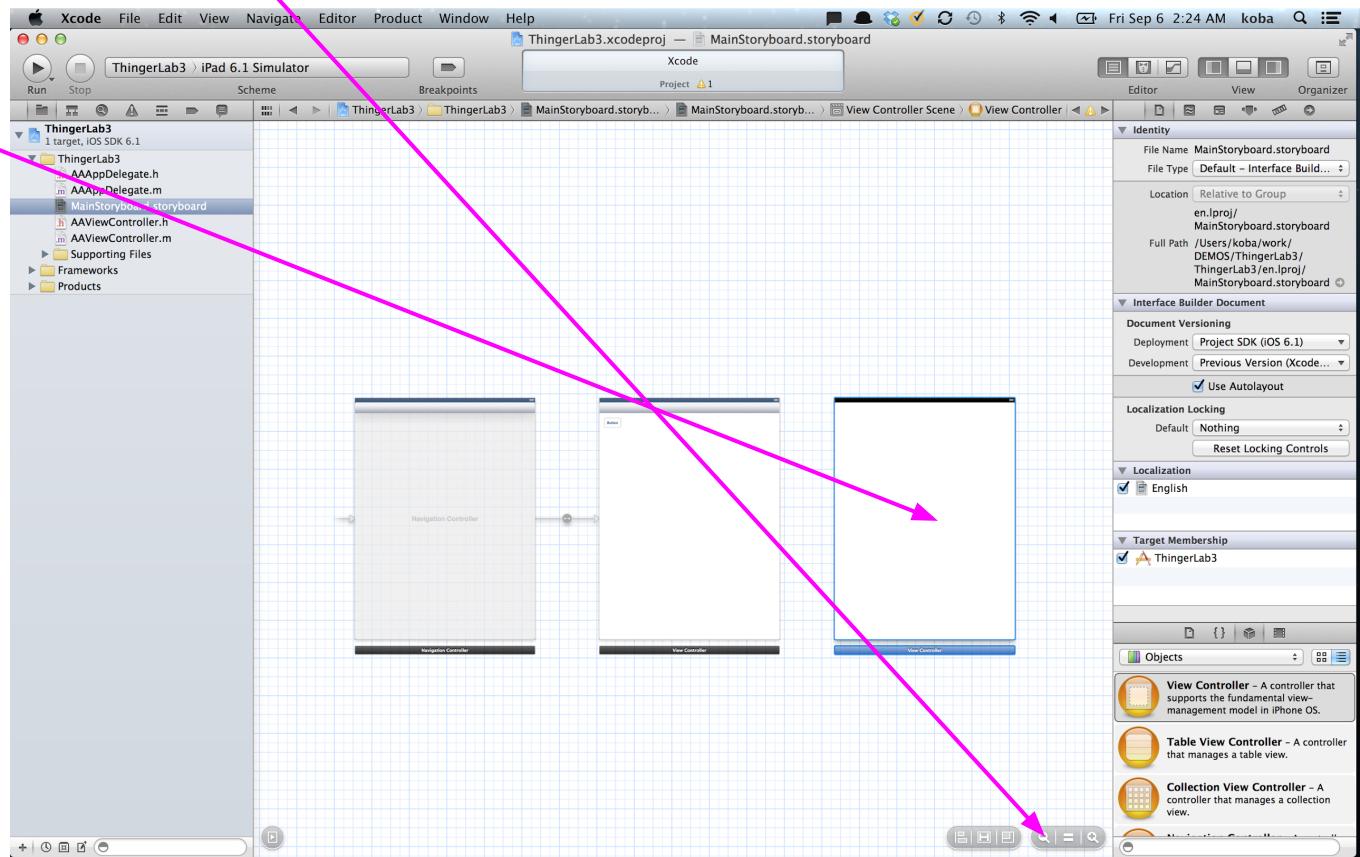
Press the “-” magnifying glass button twice. This will zoom you out again.

Drag the **View Controller** from the **Object library**'s list.

Drop it onto your Storyboard.

Position it to the left of your original white View Controller.

I know I told you you couldn't add objects to your View Controllers at this zoom level. But, you ***can*** add View Controllers to your Storyboard.

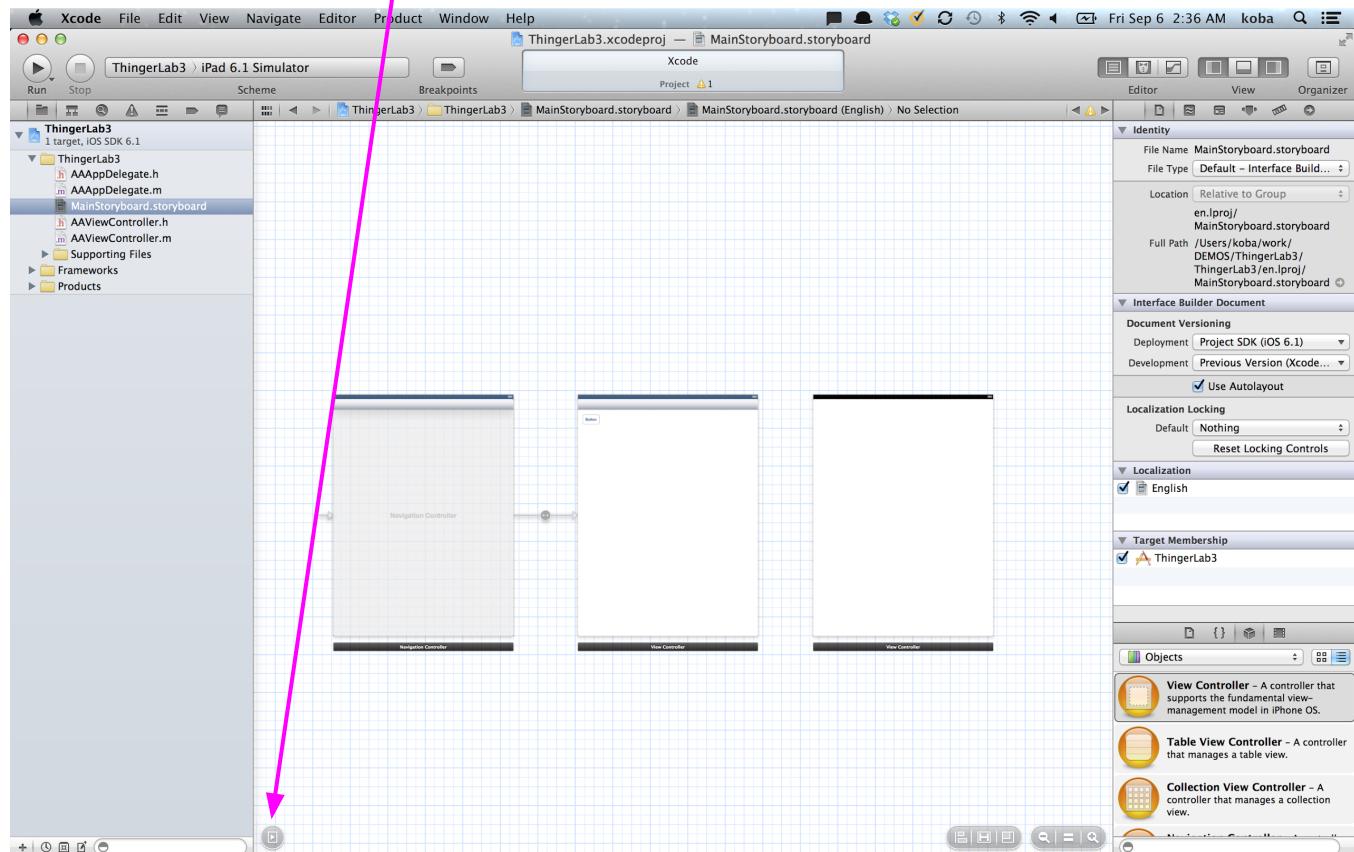


Let's connect the button

Now we'll set about the task of connecting that button, such that it causes the second View Controller to "push" over the first one.

Remember when I said not to forget about the little arrow button (the Show Document Outline button).

Press it now to reveal the Document Outline.



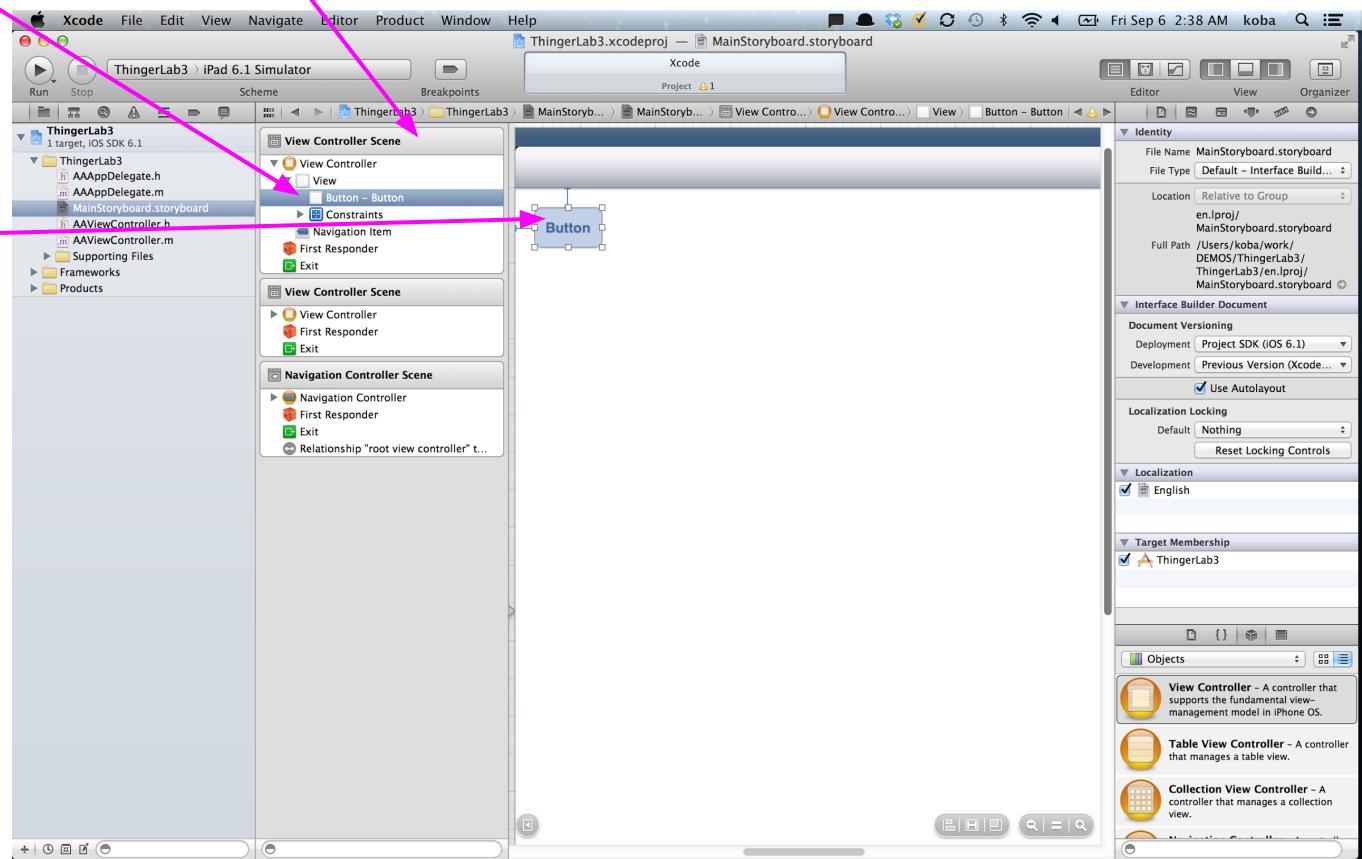
Seriously, the button

Now that you can see the Document Outline...

Select the **Button - Button** item from the list of objects.

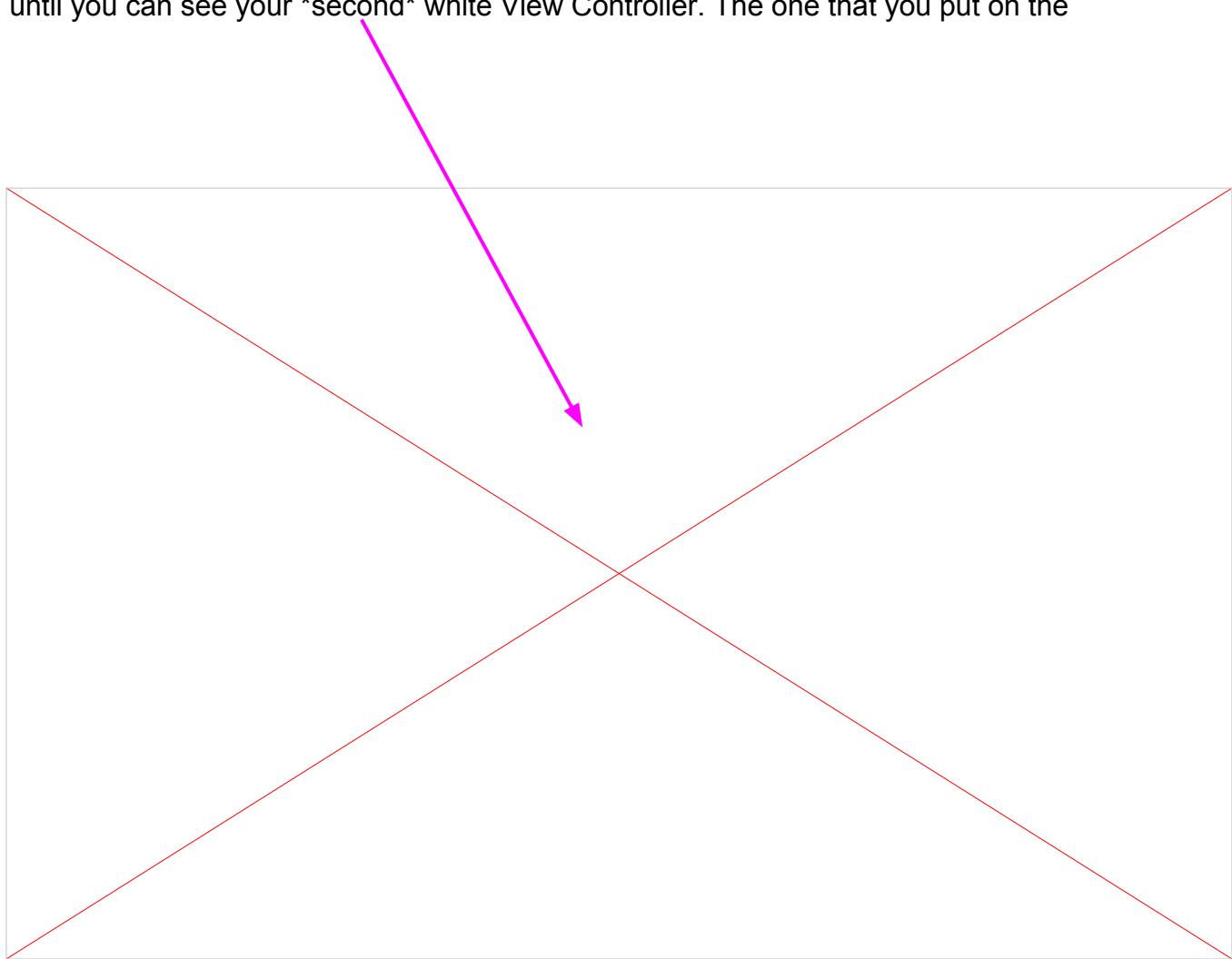
You'll notice that once you click on the button in the Document Outline, your zoom is reset and the Storyboard viewport focuses on your button (placing it in the top left corner).

At least that's what my Xcode did. Works on my machine.



Get ready...

Scroll around on the Storyboard until you can see your **second** white View Controller. The one that you put on the far right.



Introducing the segue

Segue is pronounced like, “Segway.” It’s an Italian word. Get used to it. Don’t say, “segoo” or something weird like that. It will make me look bad.

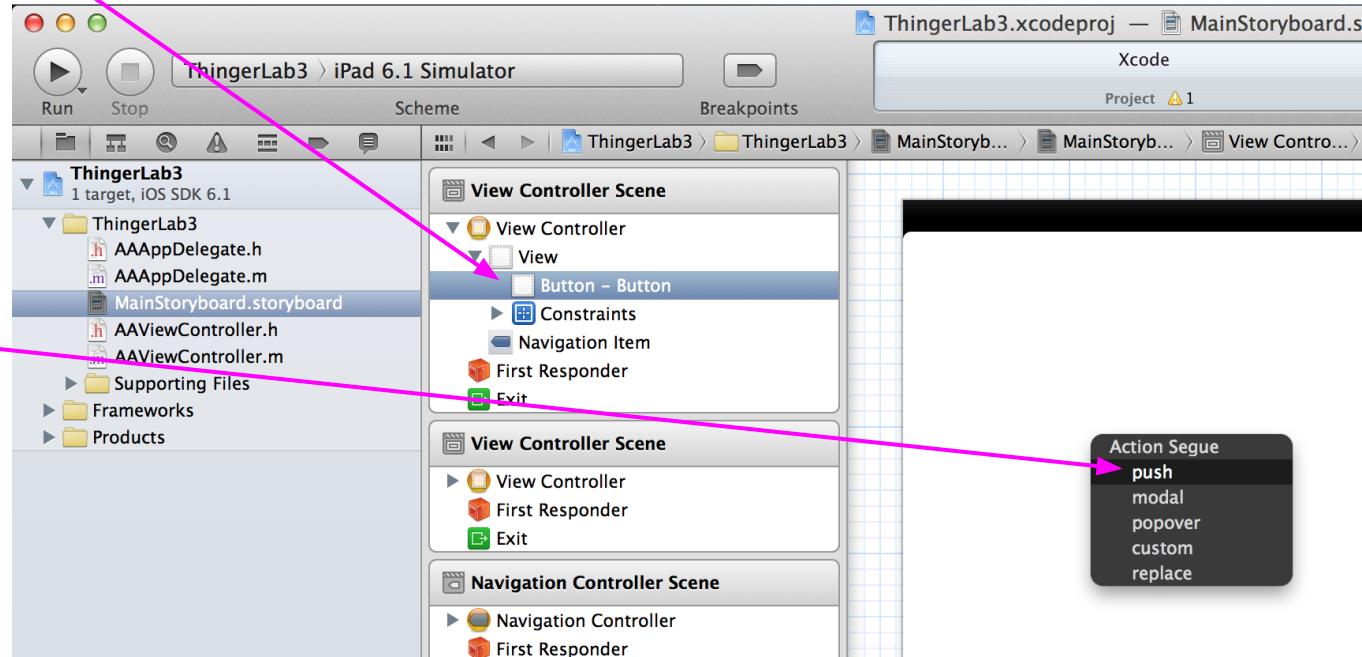
Now this is where things get exciting (seriously).

While holding down the **control** key, and click and drag from the **Button - Button** item to your second View Controller (the one you just carefully positioned on-screen).

Release your trackpad when your mouse is over the second View Controller.

You should see the **Action Segue** menu pop up.

Click on the **push** option.



Spice up your second View Controller

While you're here, you might as well add some flavor to your second View Controller.

Find a **Label** in the **Object library** and drag it into your second View Controller.

Double click on the label and change the text. Personalize a message to your self. Make it interesting.

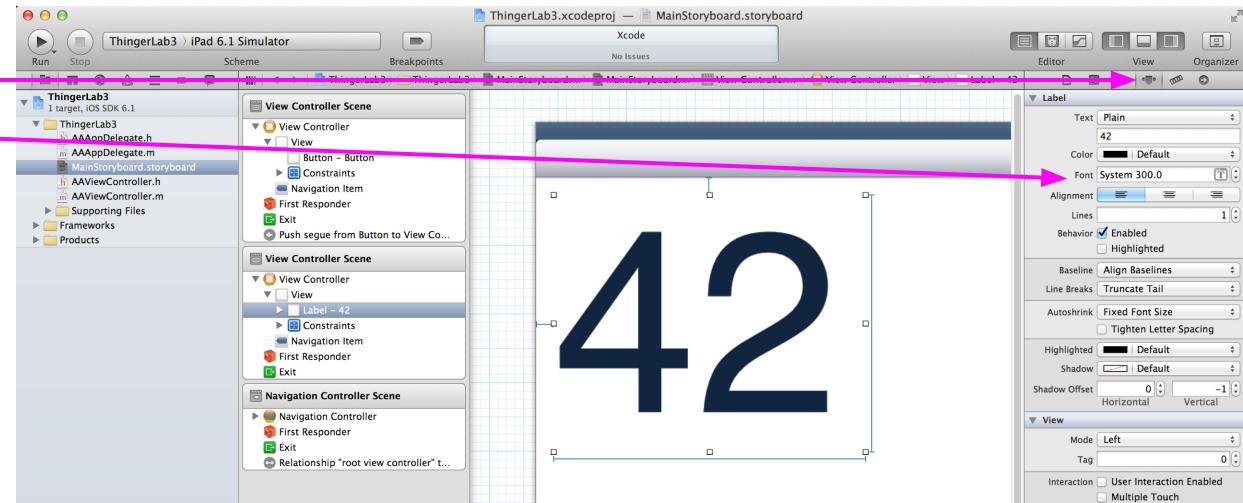
Clearly, you do not have to do what I did. You can type your own message.

But, in case you're wondering.
Here's how I made my changes.

Double clicked label and changed text to, "42."

Selected Attributes inspector.

Increased font size to 300.



Zoom out again

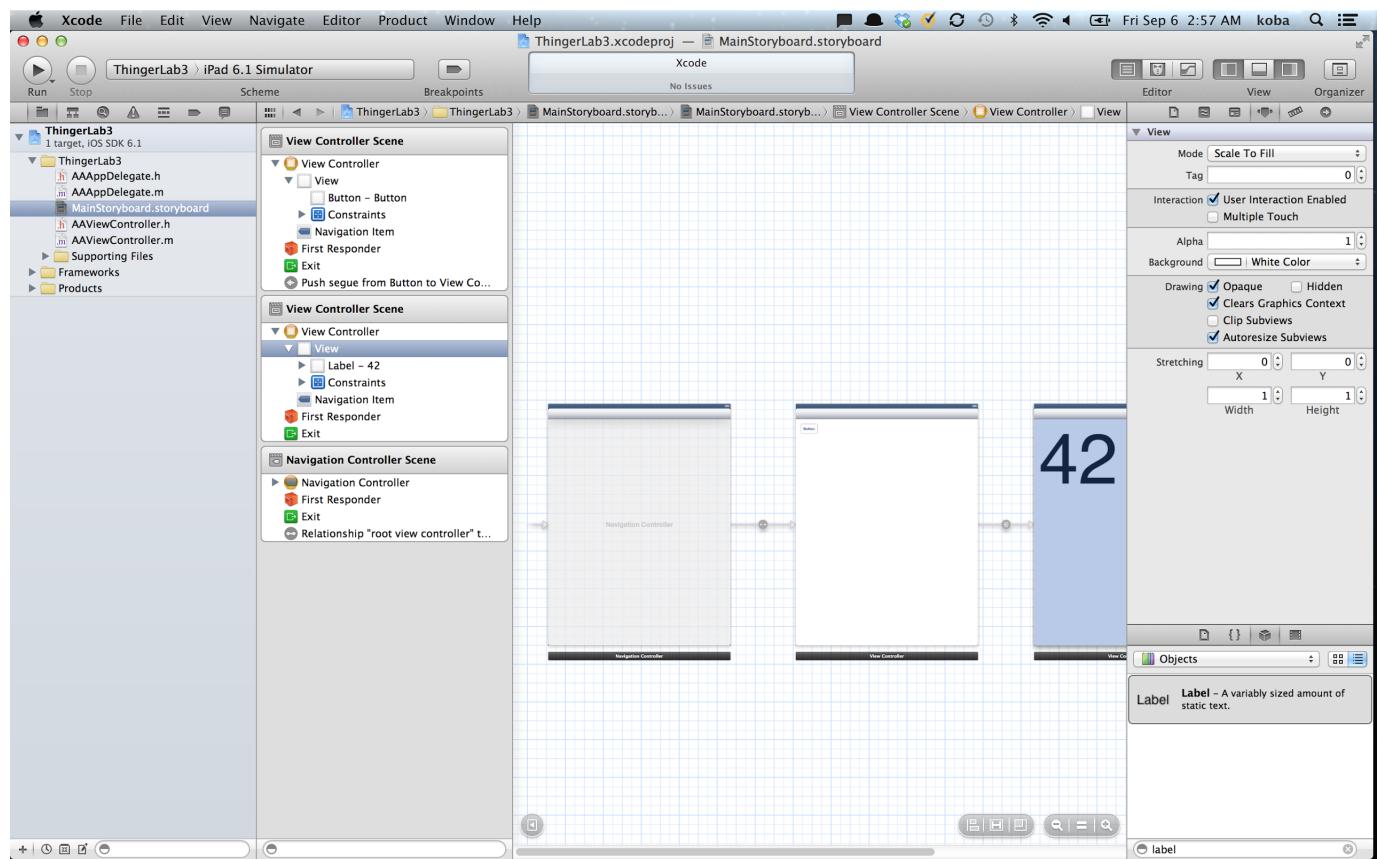
I'd like you to zoom out again, just so you can see how your Storyboard compares to mine.

See how the two View Controllers are “embedded” under the gray Navigation Controller?

Also, notice how there's a gray arrow linking the first View Controller to the second one. That's the segue you created.

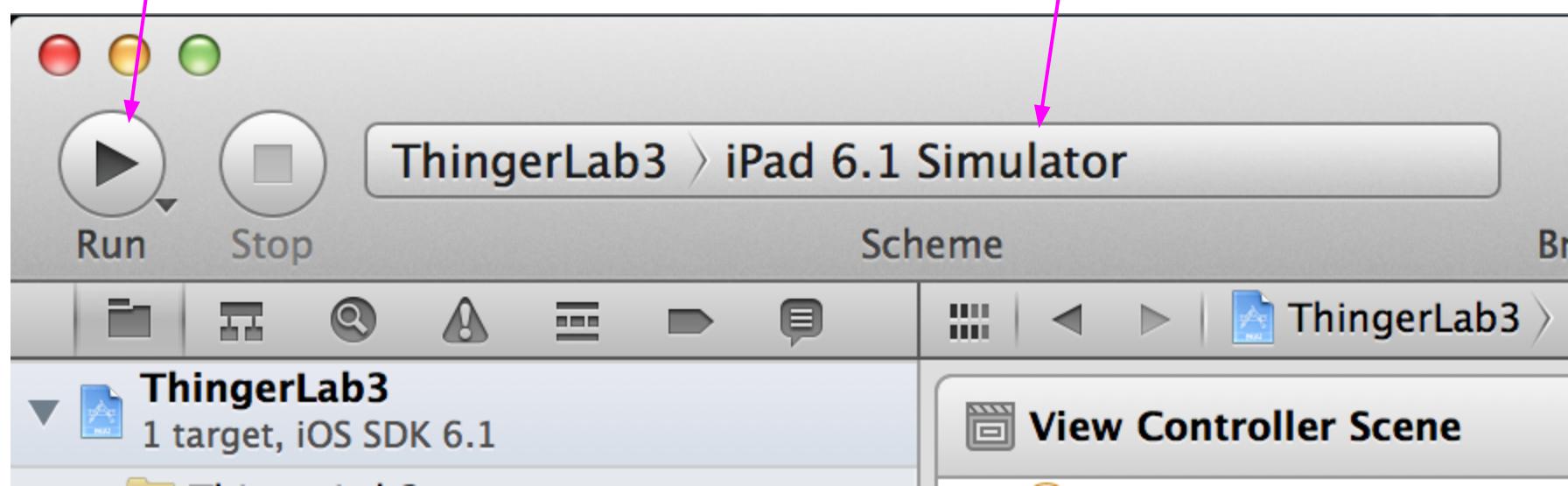
The gray area linking the Navigation Controller to the first View Controller is a “relationship” which specifies that the first View Controller is the root View Controller of the Navigation Controller.

Ugh.



Run it!

Go ahead and run your project. You can run it on your iPad if you want. I just ran it on the Simulator.



Pro Tip: Simulator Scale

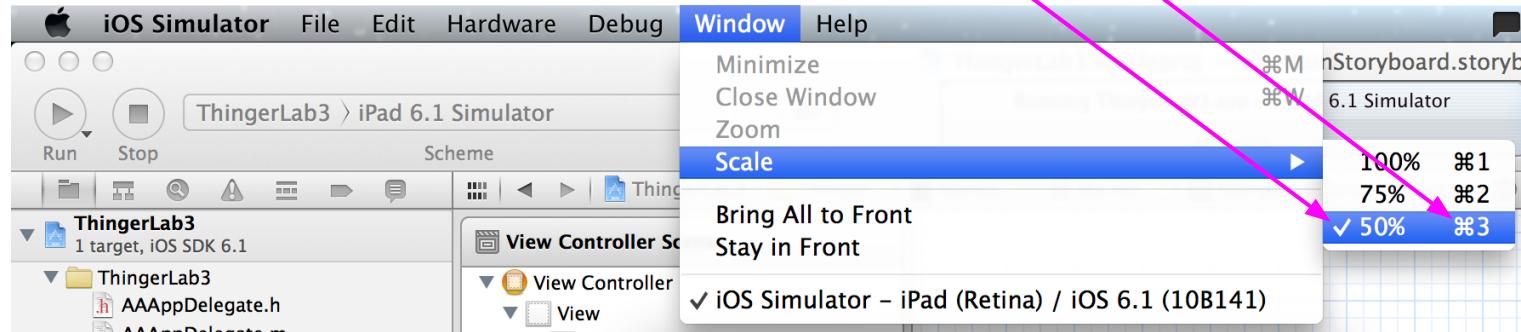
The iPad Simulator is pretty big. This has to do with the physical size of the iPad screen, as well as pixel density. More on this later.

Sometimes you just want to see the whole iPad.

This is one of those times. Use the **Window > Scale > 50%** menu item to shrink your iPad Simulator screen.

You'll notice that you can use the keyboard shortcuts **⌘3** and **⌘1** to toggle back and forth between scales.

I love keyboard shortcuts. In time, you may too.



It works!

It's not a pretty app. But it works. And, you got to try out segues.

Tap the "Button" button.

You should see a "push" transition to the second View Controller.

Don't forget to try the "Back" button. You might guess what it does.

