

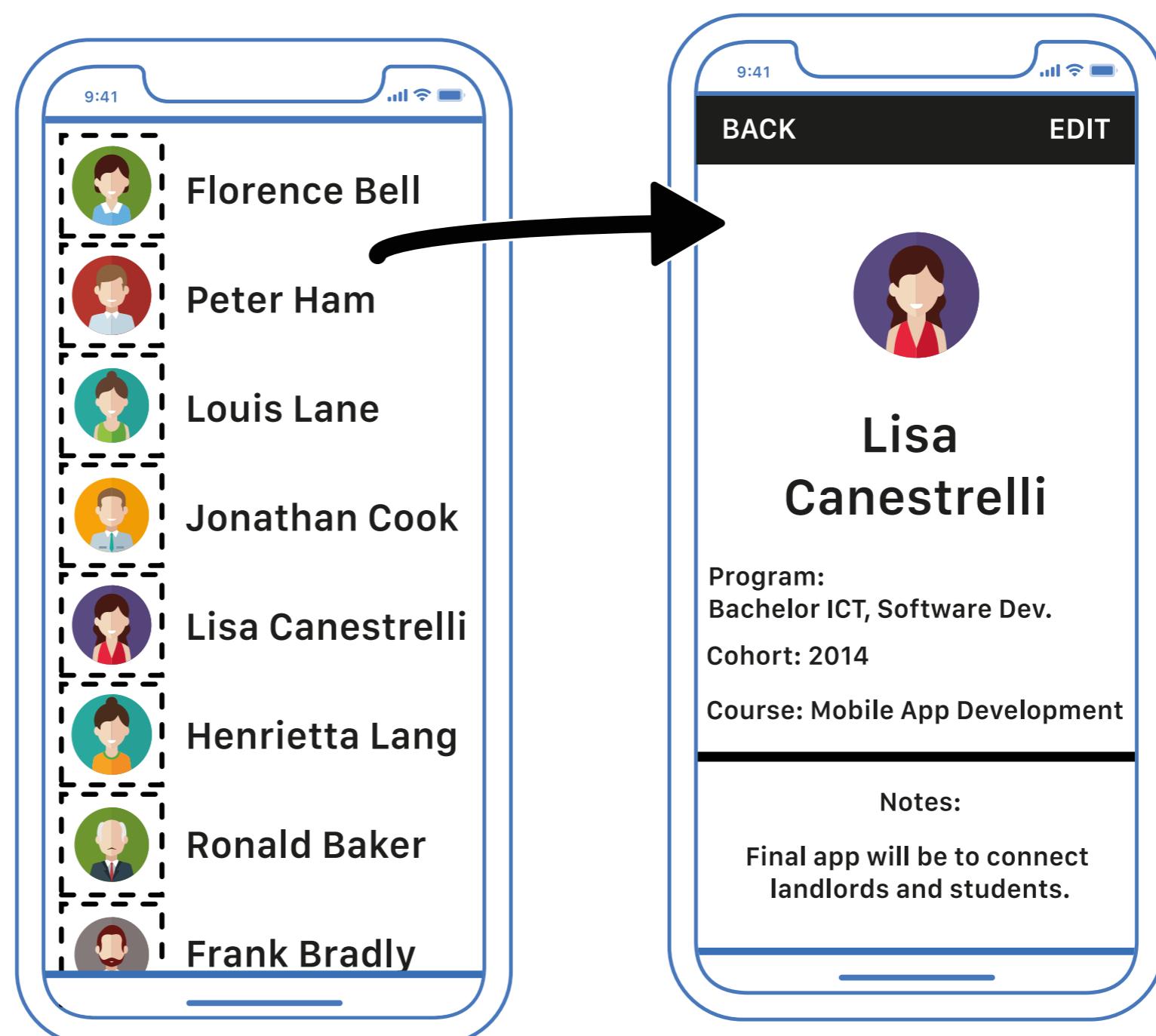
Workshop Accessibility

Spring 2018 (P4)

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► HAN

What will we be doing



Focus

Implementation

- Implementing the basic app
- Keep the app neat (avoid smells)
- Make the app accessible

HANICA / EveryoneCanCode

Available: [Code](#) [Issues 0](#) [Pull requests 0](#) [Projects 0](#) [Wiki](#)

Branch: master [EveryoneCanCode / Course / Accessibility /](#)

 jakorten	Updates ...
..	
 BasicApp	Initial commit rememberme app
 FinalApp	Updates
 Starter	Updates
 .DS_Store	Updates

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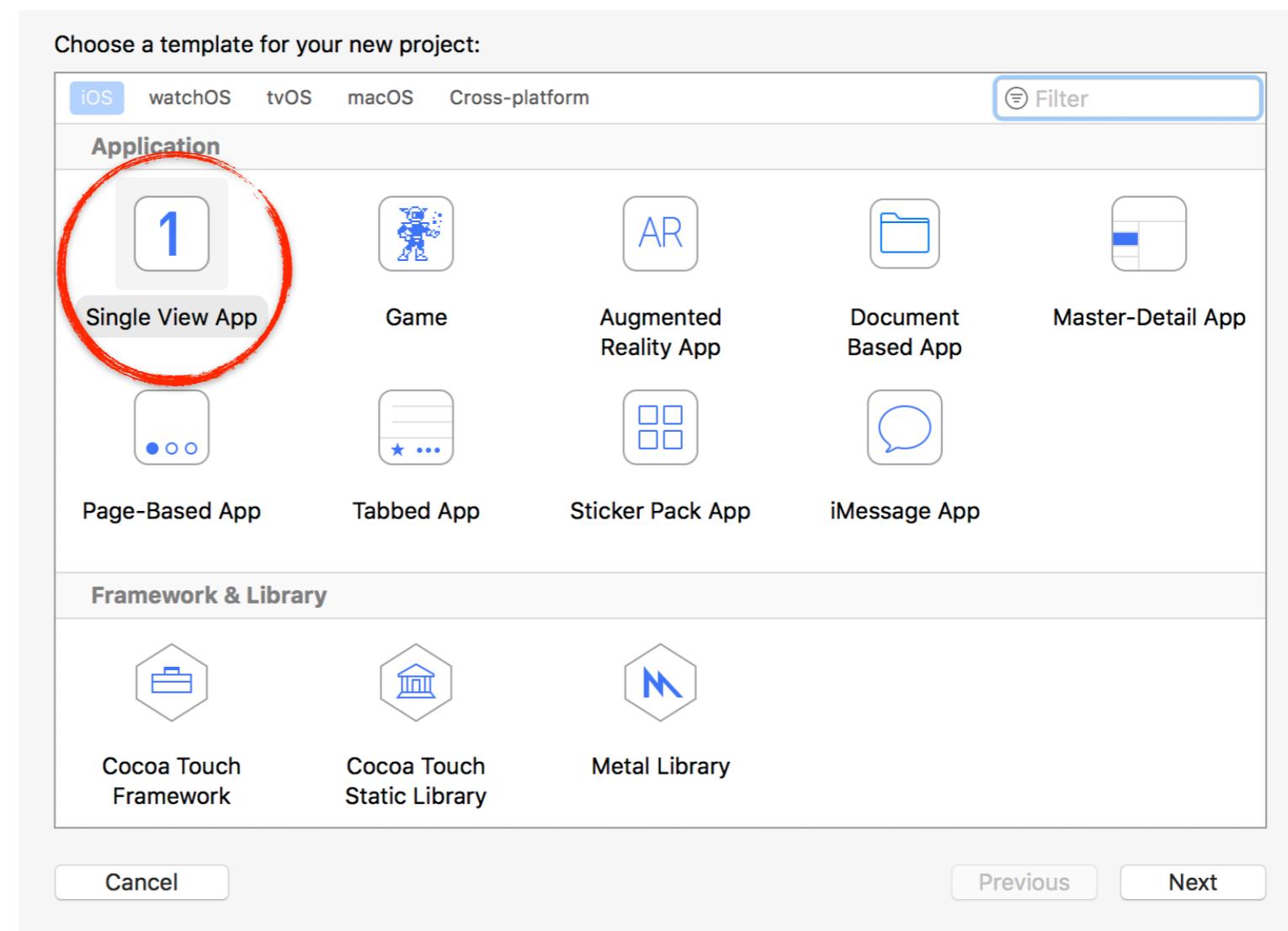
<https://github.com/HANICA/EveryoneCanCode/>

Requirements and Priorities

Basic Tableview for students / faculty with names and pictures.	M
Navigational structure to move back / forth	M
Basic Model for students / faculty with names and pictures.	M
Detail View to show persons' details.	M
Support Accessibility.	M
Avoiding code smells, refactor bad code.	S
Make sure the storyboard uses correct constraints (autolayout) also in landscape.	S
Edit notes for that person.	C
Get students / faculty from the school database system.	W

Must haves (M), Should haves (S), Could haves (C) and Would/Won't haves (W) ► H A N

New project / Single View



New project / Single View

Choose options for your new project:

Product Name: RememberMe

Team: Hogeschool van Arnhem en Nijmegen (ICA) 

Organization Name: HAN University of Applied Sciences

Organization Identifier: nl.han

Bundle Identifier: nl.han.RememberMe

Language: Swift 

Use Core Data

Include Unit Tests

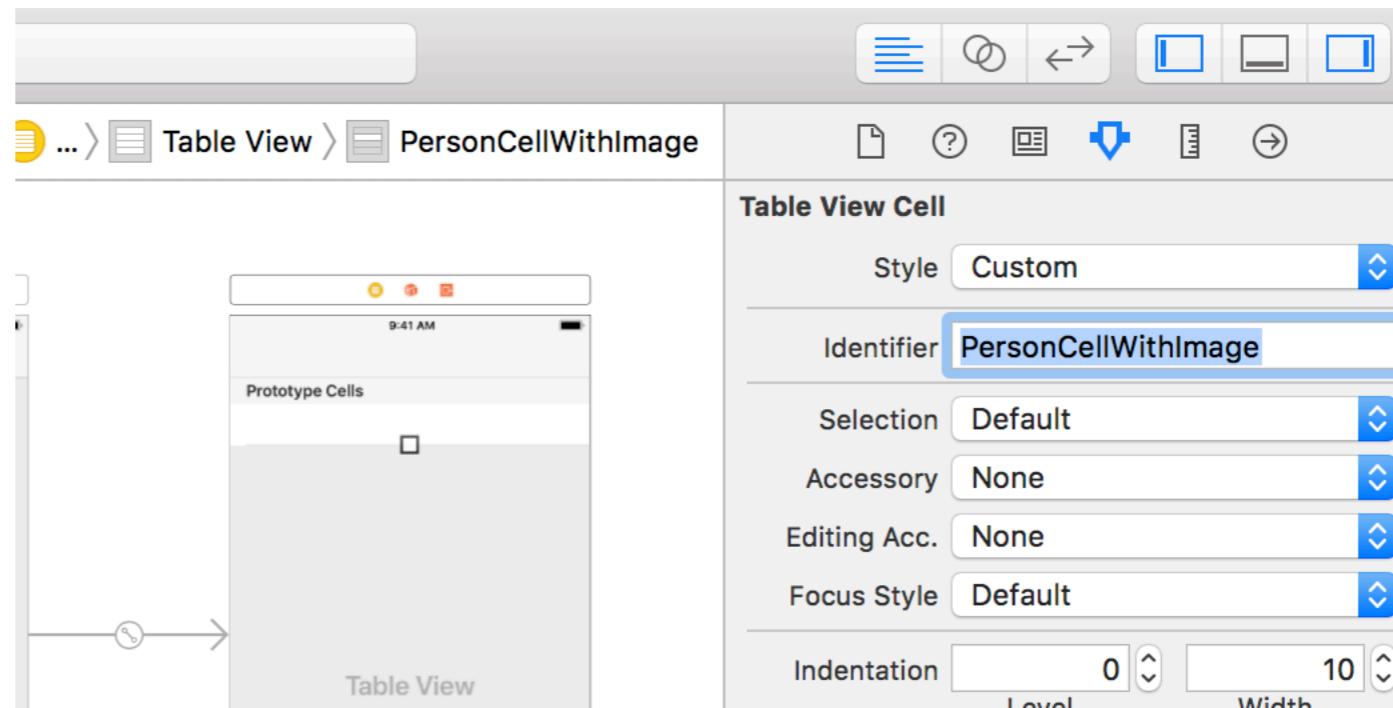
Include UI Tests

Next steps: Storyboard 1/4

1. Open storyboard
2. Remove ViewController
3. Add *TableViewController*
4. Editor / Embed In / Nav Controller
5. Select Navigation Controller
6. Attributes Inspector / Check:
Is Initial View Controller

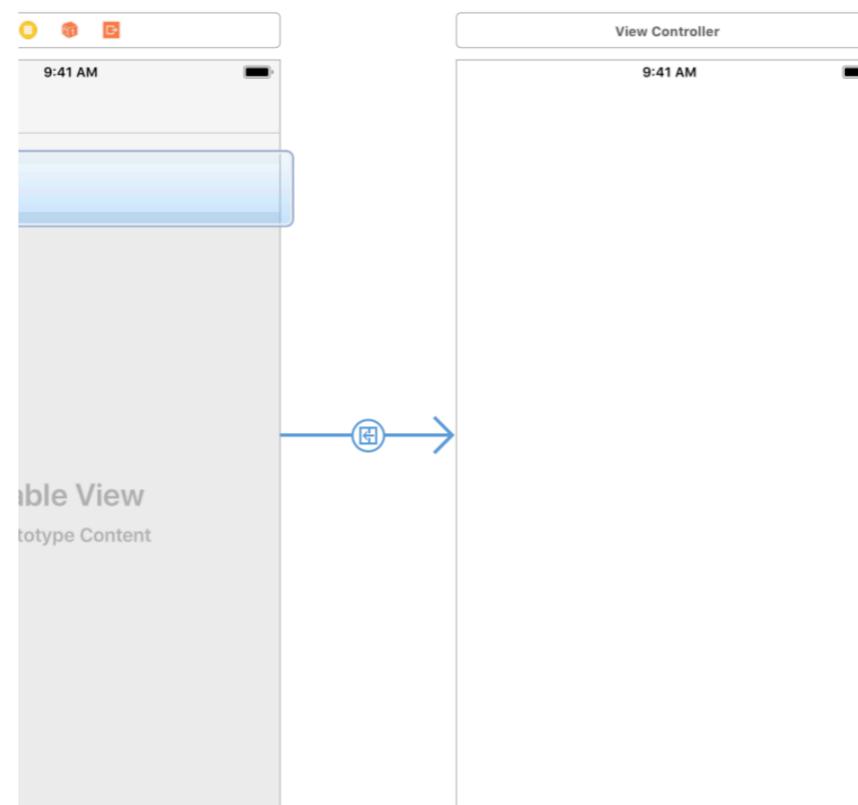
Next steps: Storyboard 2/4

Select the prototype Cell and set Reuse Identifier to “PersonCellWithImage”

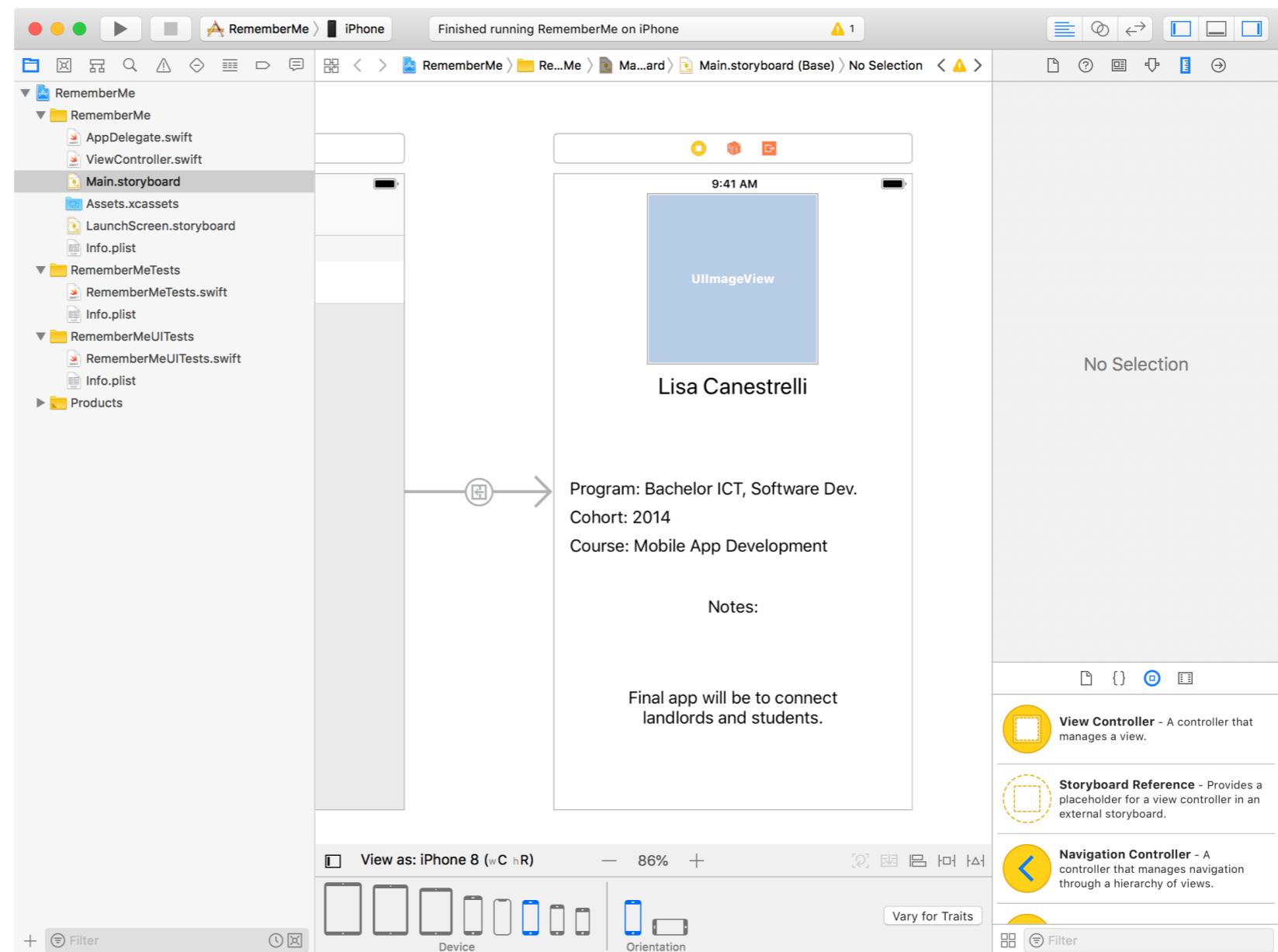


Next steps: Storyboard 3/4

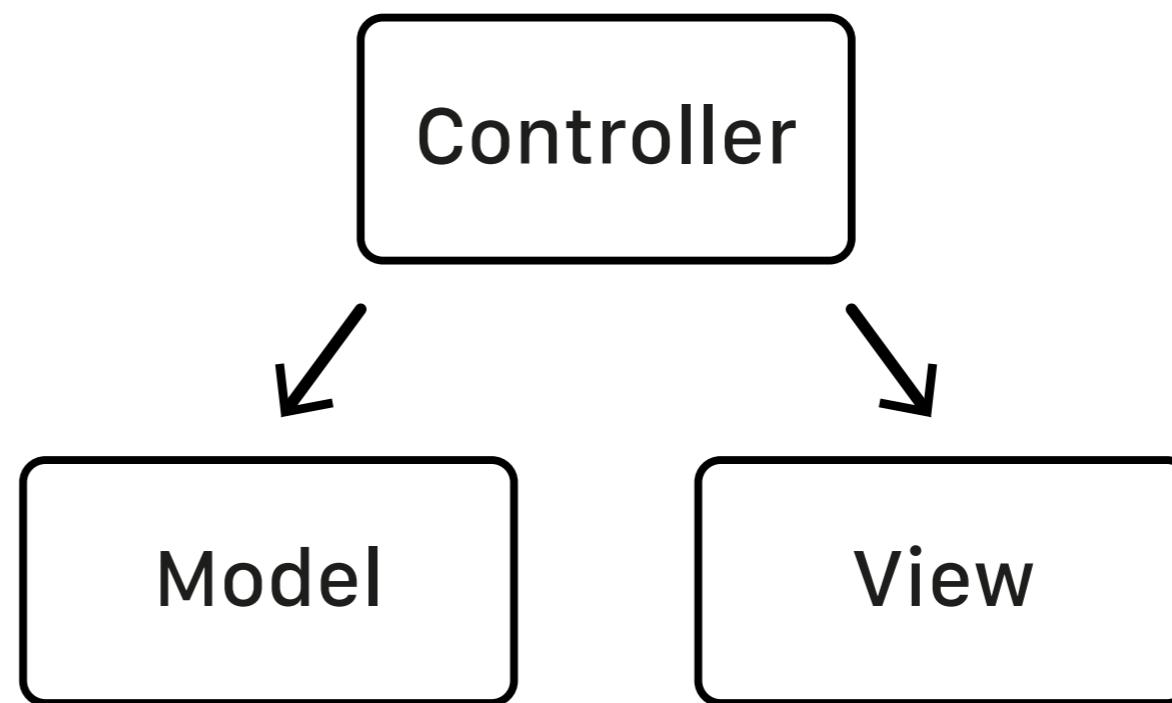
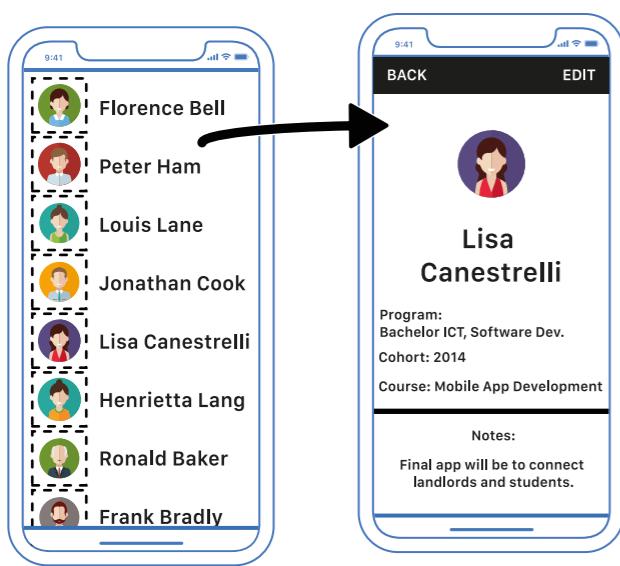
- Add a detail View
- Ctrl+Drag between Prototype cell and detail view



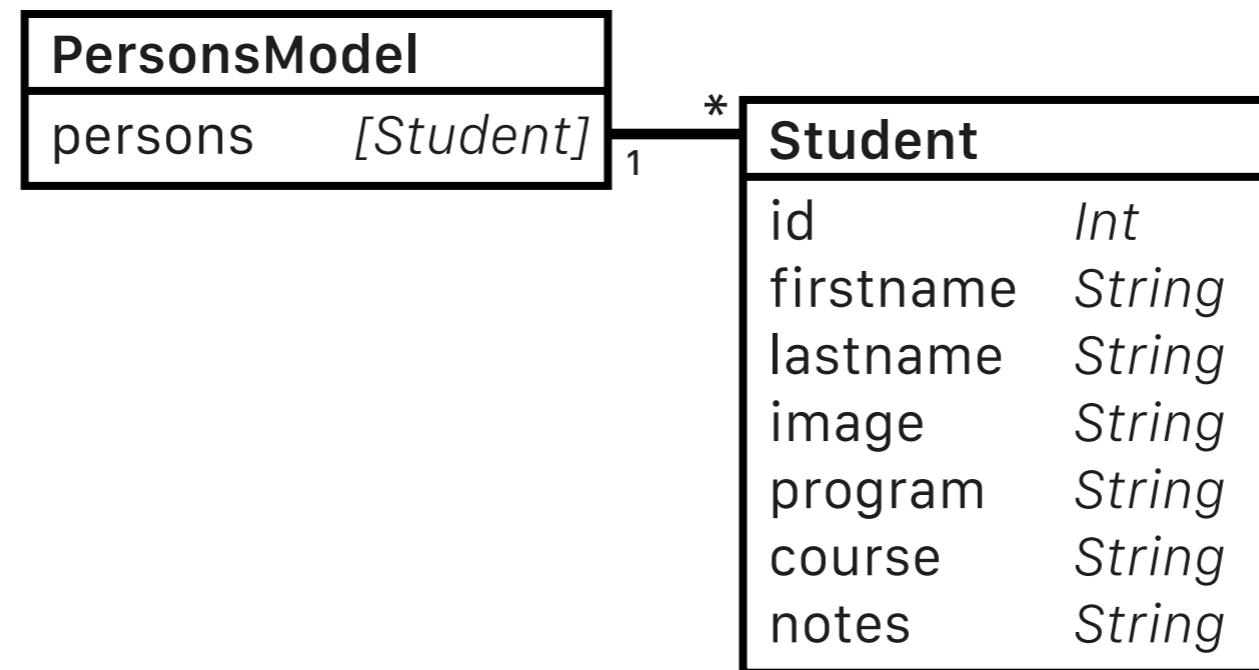
Finish Storyboard for Now 4/4

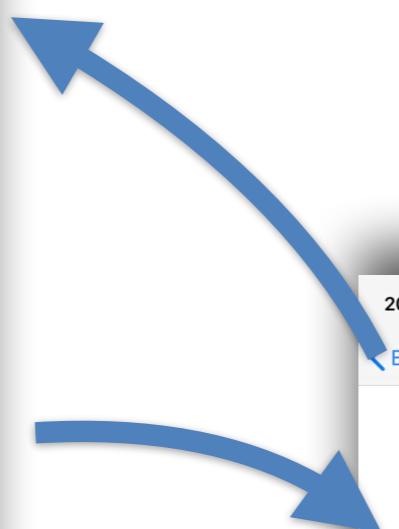
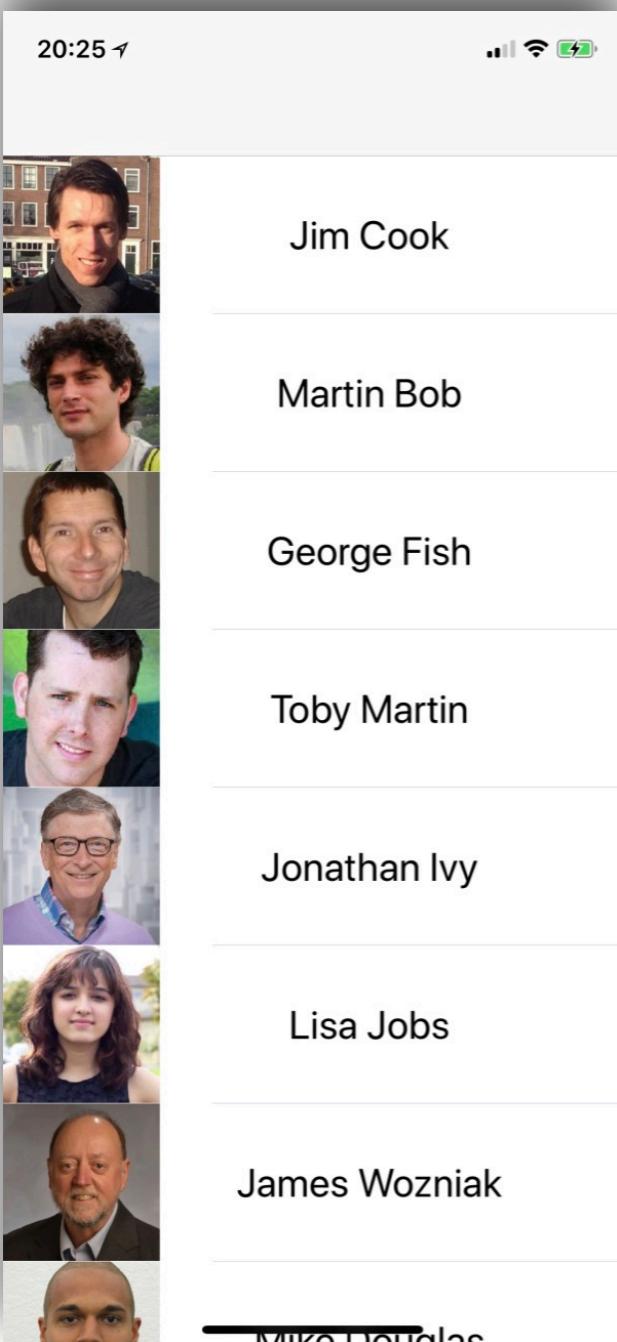


MVC (Architectural) Pattern



Model:

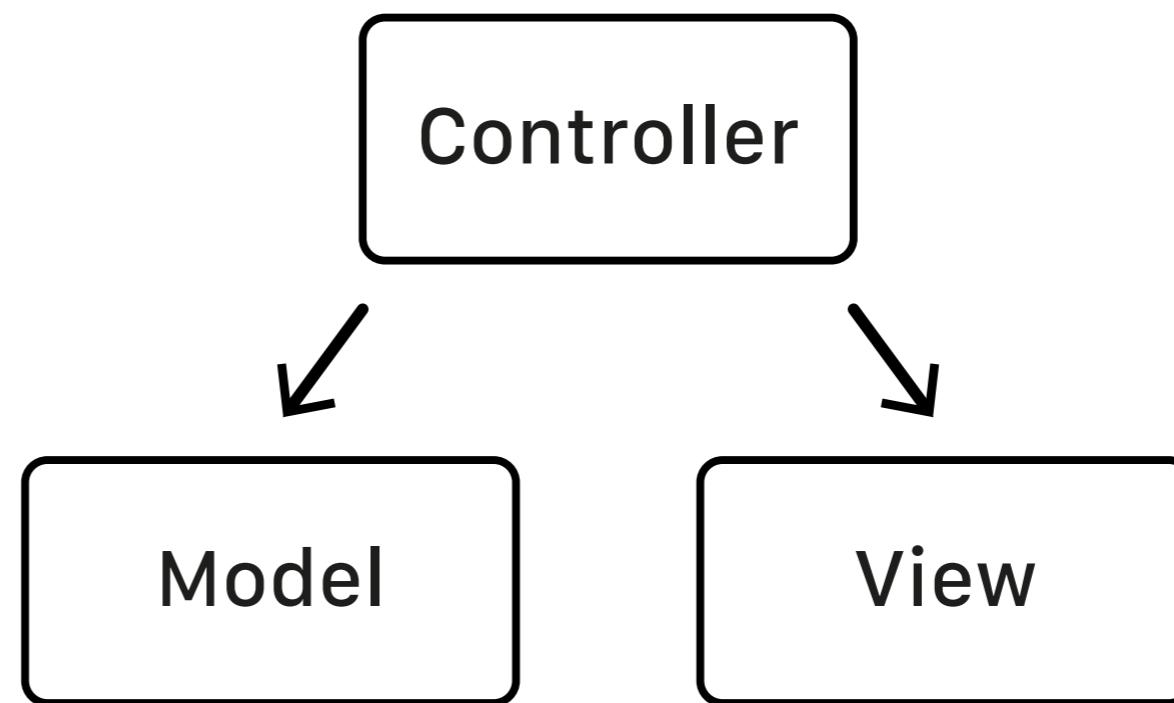
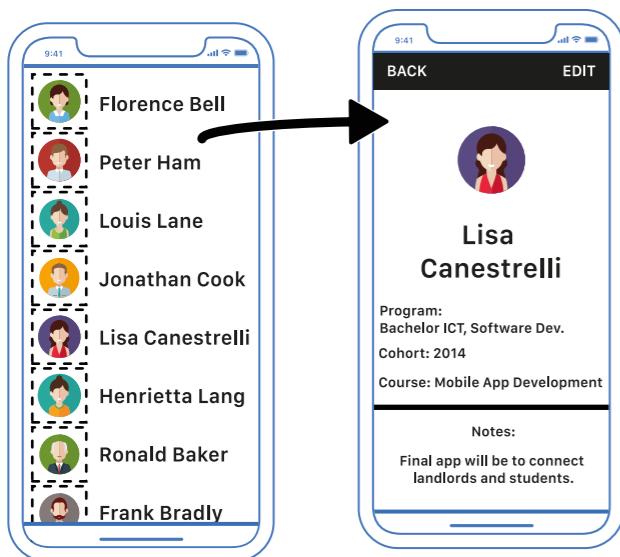




Implement the RememberMe app



Accessibility



Accessibility

To enable accessibility options:
press the switch of your iPhone 3x

Tip: if you get in too much trouble
remember that you can always ask Siri
to turn off your accessibility options.

VoiceOver

**Using accessibilityLabel or
accessibilityHint**

```
if (self.notesLabel.text?.isEmpty)! {  
  
    self.notesLabel.accessibilityHint =  
        "Notes are empty."  
  
    self.notesLabel.accessibilityLabel =  
        "Notes label"  
}
```

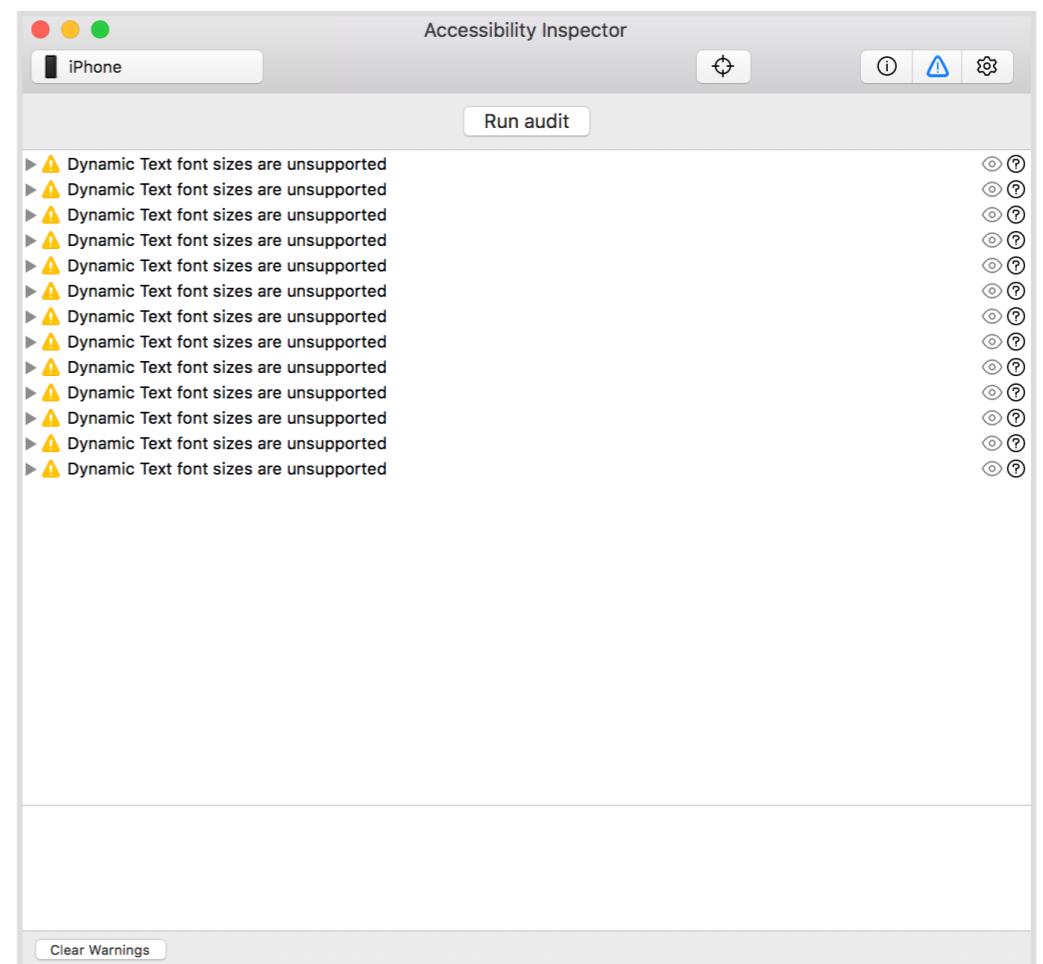
VoiceOver

**Using accessibilityLabel or
accessibilityHint**

```
self.personsImageView.accessibilityTraits  
= UIAccessibilityTraitImage //1  
  
self.personsImageView.accessibilityLabel  
= "Portrait of \  
  (currentStudent.firstname) \  
  (currentStudent.lastname)"//2
```

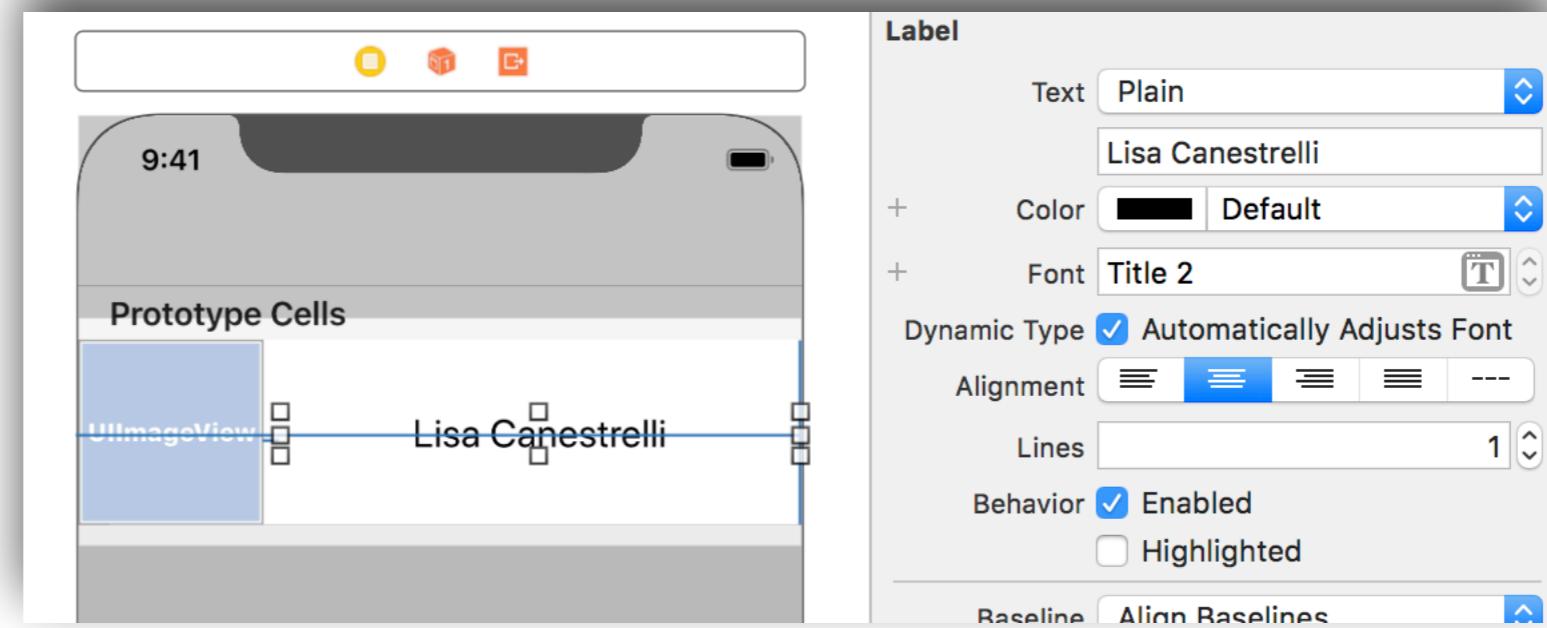
Accessibility Tools

Dynamic Text



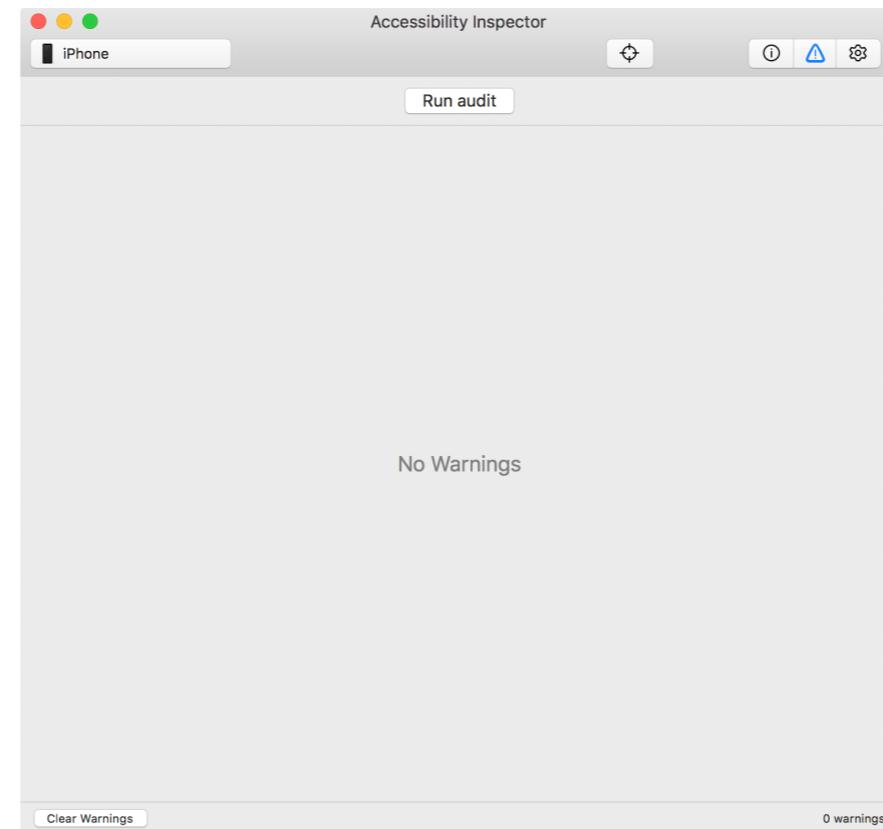
Solution

- Use Font Text styles instead of giving a specific Font Size
- Enable Automatically Adjust Fonts

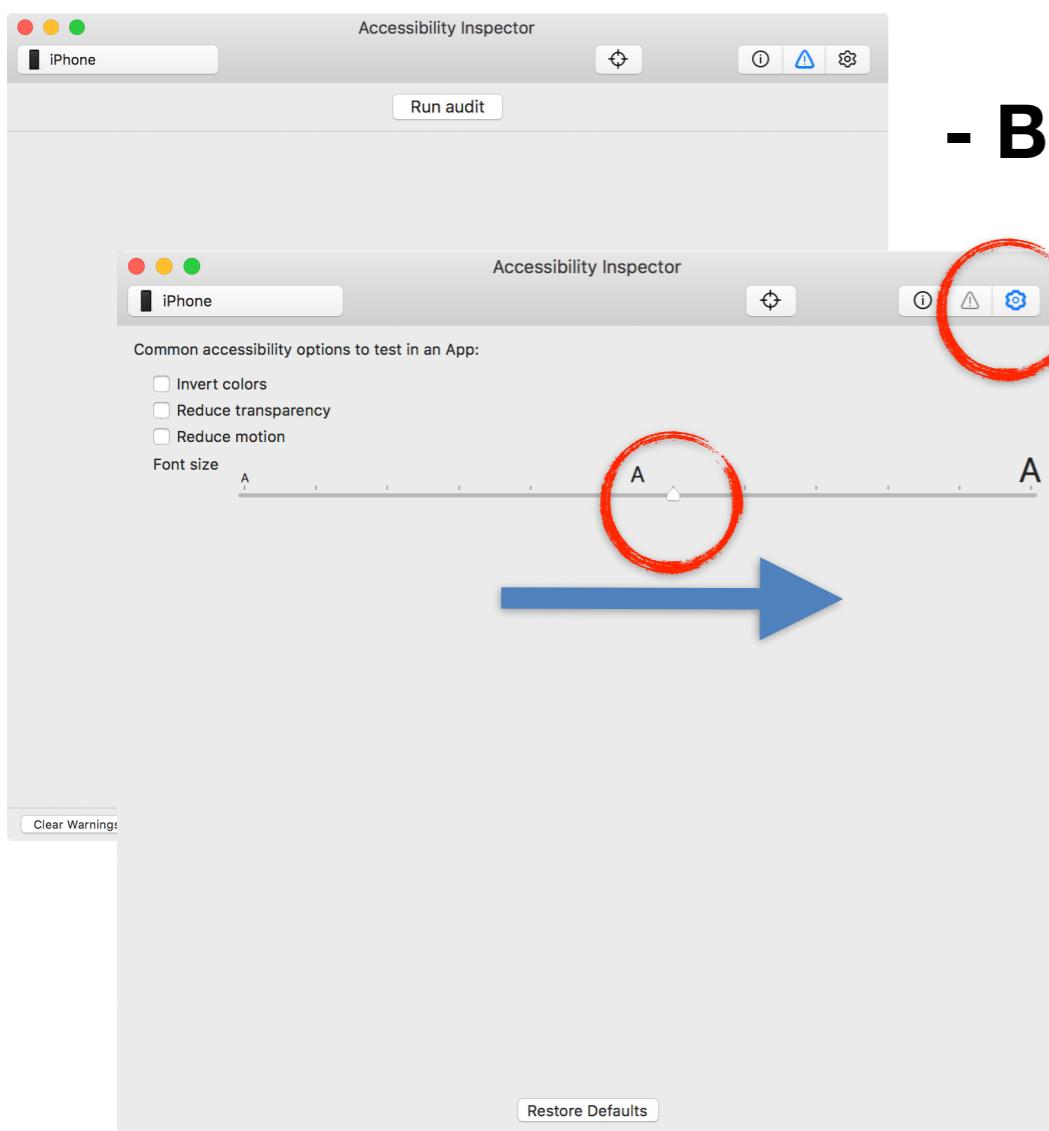


Solution

- Audit again...
- Whoohoo, No Warnings!



No warnings



- But...

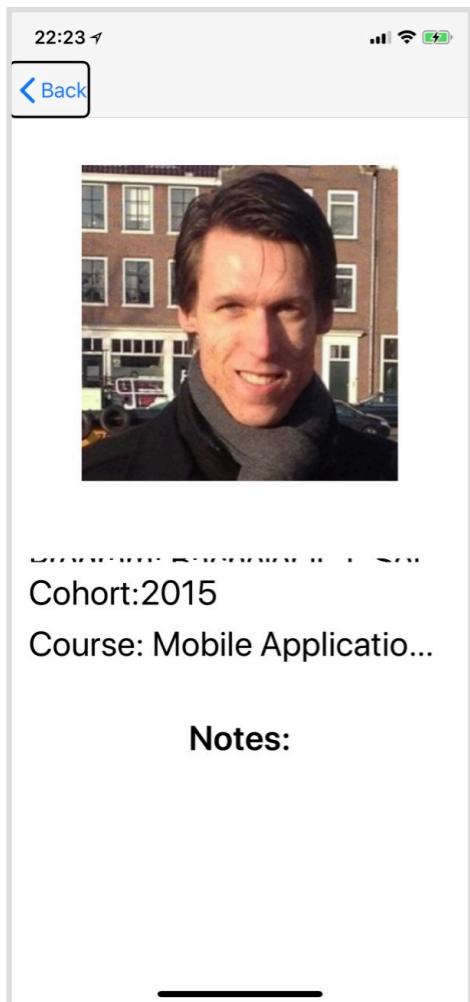


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Solution?

The issue is the constraints that we put on the labels using autolayout.

Note: this also means your app won't resize well on smaller devices, so maybe it is a good idea to *take the bull by its horns* anyway.



ScrollView

- Select all your UI elements of the StudentDetailsVC
- Select “Editor” | “Embed In” | “ScrollView”
- Remove the constraints of the view
- Add new constraints (for me, “Add missing constraints” to all views” worked fine!

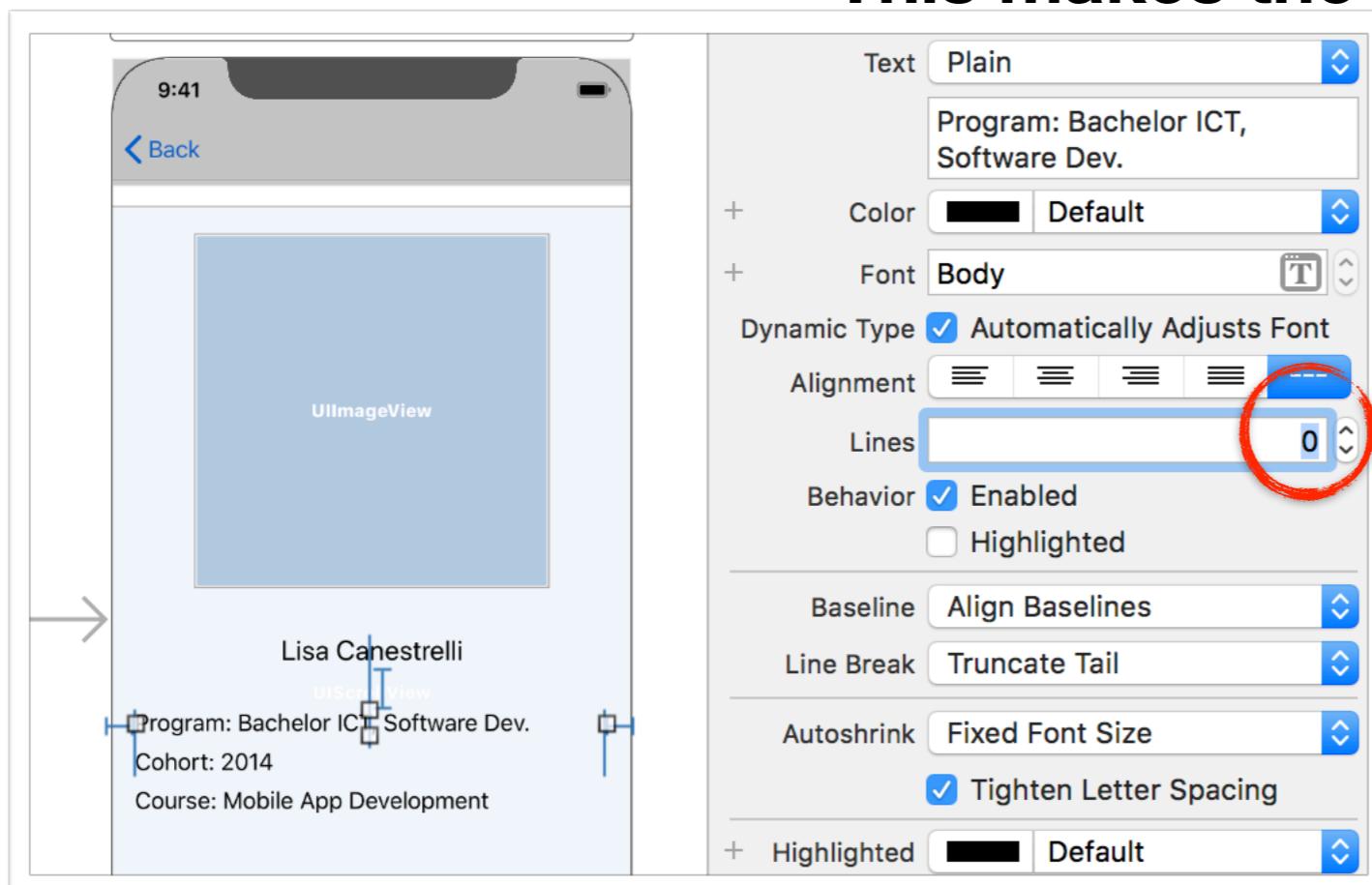


ScrollView

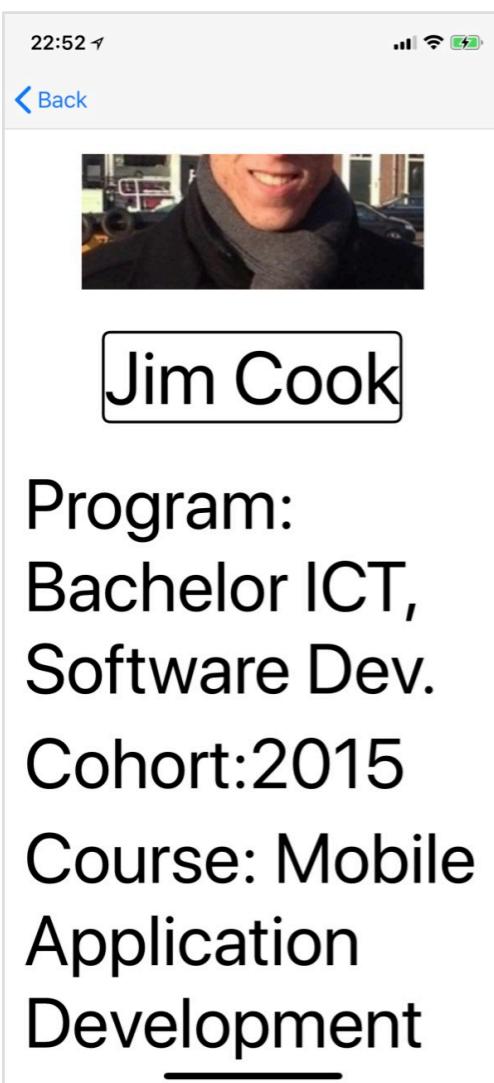
- Well that did most of the trick.
- The lines are abbreviated though by an ellipsis (...)
- VoiceOver will also shorten the pronunciation
- Solution for VoiceOver: explicitly also set the accessibilityLabel text to the content.
- But there is another solution

ScrollView

- Set “Lines” to 0 for all applicable labels
- This makes the label “multi line”



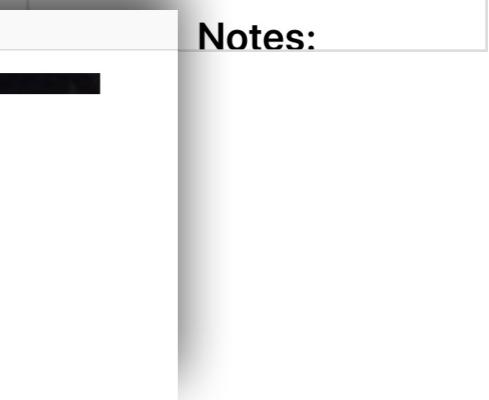
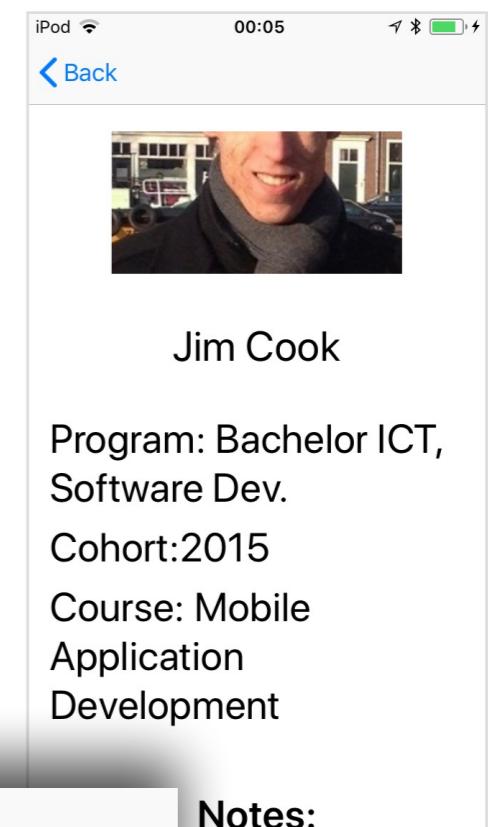
iPhone X



End result

And now even
landscape works!

iPod Touch



Links

Accessibility

<https://www.apple.com/lae/accessibility/iphone/vision/>

<https://developer.apple.com/documentation/uikit/accessibility>

<https://www.raywenderlich.com/142058/ios-accessibility-tutorial>

<https://developer.apple.com/documentation/foundation/nsnotification.name/2865862-uiaccessibilityvoiceoverstatusdi>

<https://developer.apple.com/videos/play/wwdc2017/215/>

<https://medium.com/@ericamillado/how-to-make-a-uilabel-accessible-swift-3-336b0839760d>

Links

See also:

<https://stackoverflow.com/questions/39118184/xcodes-accessibility-label-vs-hint-vs-id/43072371>

Paul Hegarty / Developing iOS 11 Apps with Swift - 9. View Controller Lifecycle and Scroll View:

https://www.youtube.com/watch?v=ktt_-JgtmHE

On patterns:

<https://cocoacasts.com/what-is-a-singleton-and-how-to-create-one-in-swift/>