

# Stanford CS193p

Developing Applications for iPhone 4, iPod Touch, & iPad  
Spring 2011



# Today

- ⌚ Localization
- ⌚ Settings Bundle

# Localization

- ⦿ Two steps to making international versions of your application
  - Internationalization (i18n)
  - Localization (l10n)
- ⦿ Resources are drawn from a “bundle” using the user’s locale
  - Inside a bundle, there will be “.lproj” directories (e.g. en.lproj, fr.lproj, etc.)
  - Inside these .lproj directories, there will be .xib files, .strings files, images, sounds, etc.
  - When you get a path to a file from a bundle, it tries top-level first, then searches .lprojs (depending on the language the user has chosen for his system in Settings app)
- ⦿ Bundles can be associated with a framework or an application
- ⦿ Using **NSBundle** API to get a resource (e.g. an image or sound)

```
NSBundle *bundle = [NSBundle bundleForClass:[self class]];
NSString *path = [bundle pathForResource:@"speedlimitsign50" ofType:@"jpg"];
```

`bundleForClass:` knows whether that class came from a framework or just with the application

# Localization

## ⌚ Localizing .xib files

Can either programmatically change the strings (sizing could be a problem)

Or just have a different .xib per language.

Use ibtool (command line program) to extract strings, translate them, then reinject.

Or translators can just edit the .xibs directly ...

Finished running LabelMover

No Issues

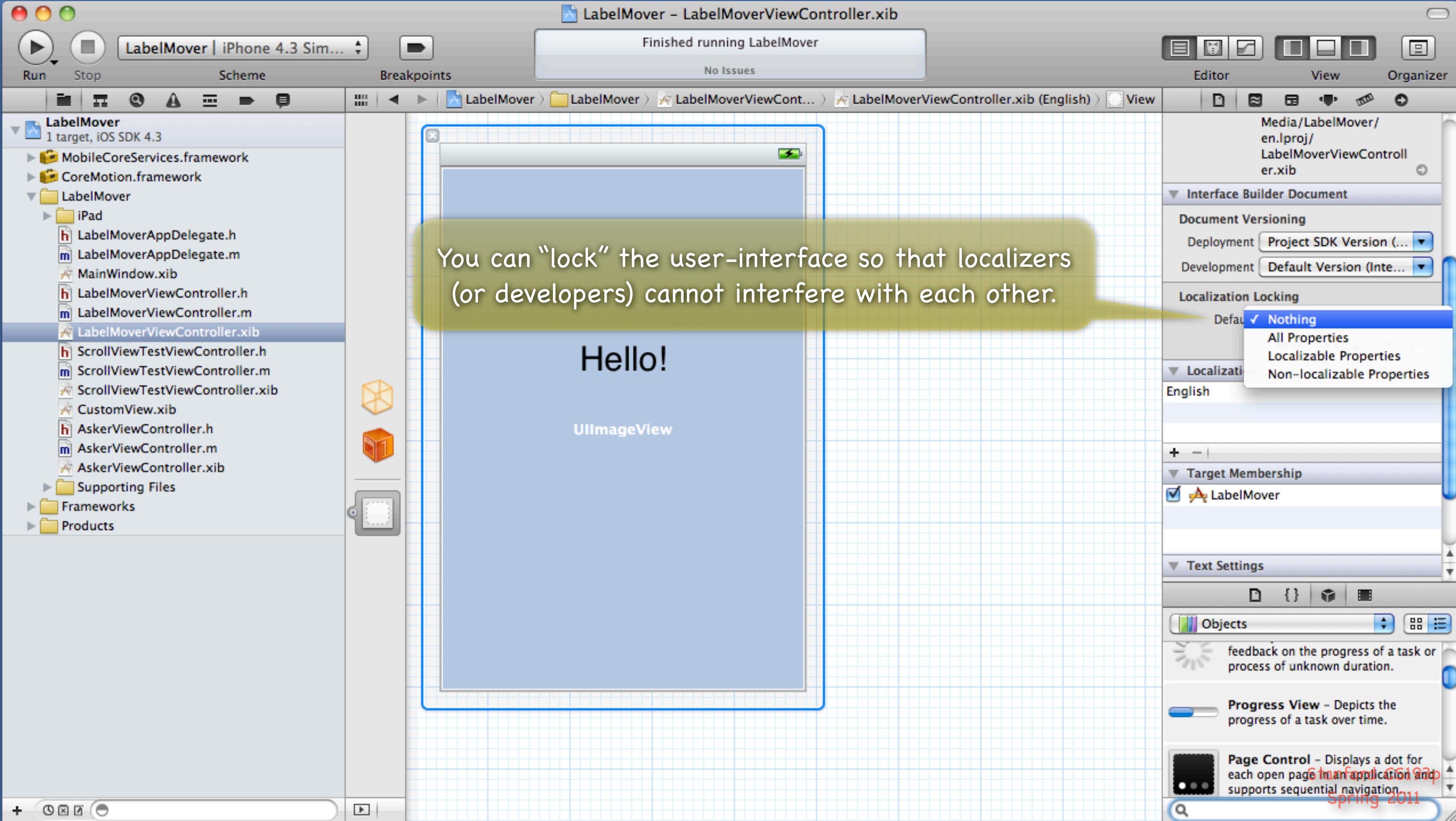
Editor View Organizer

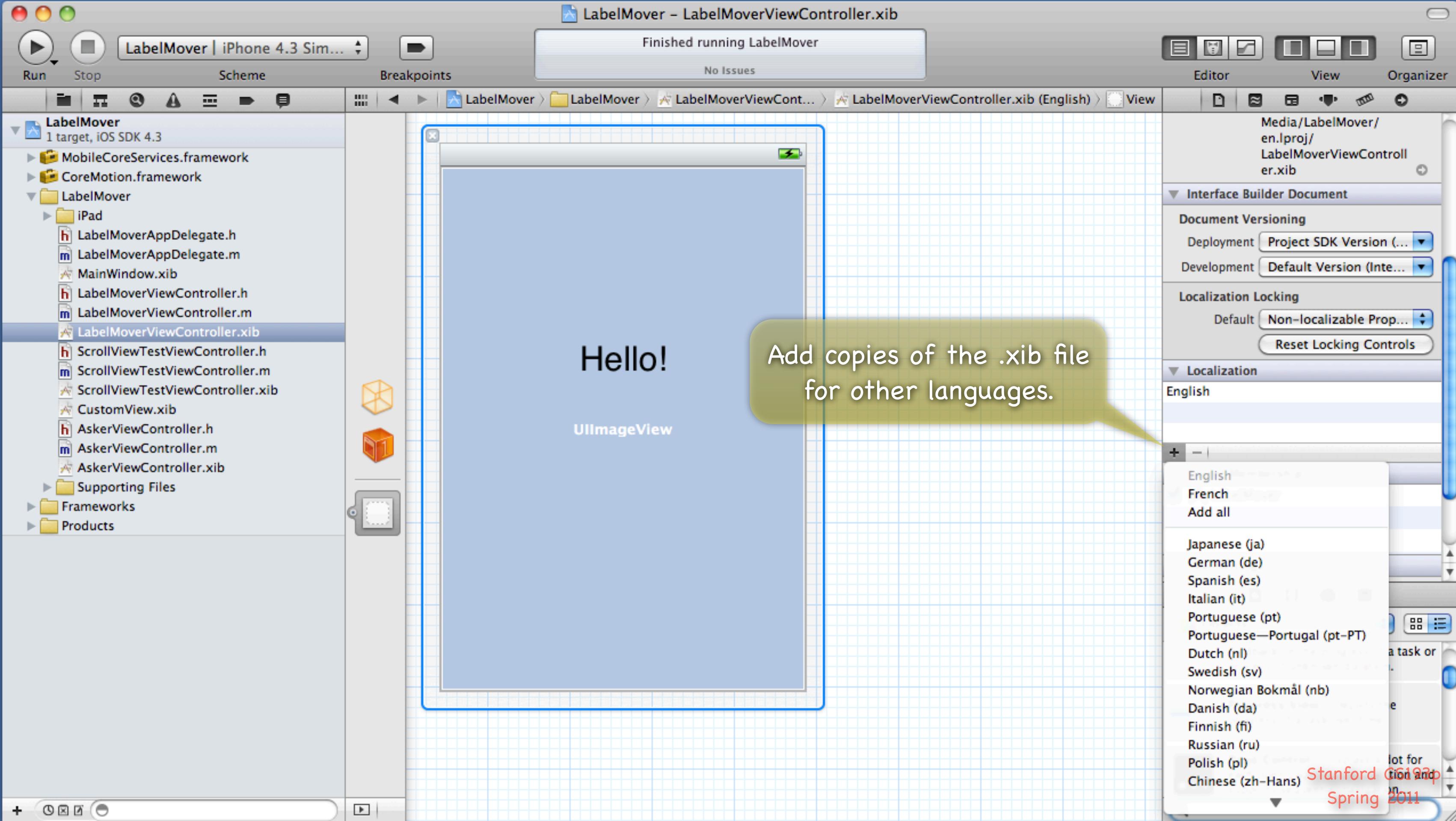
To create versions of the .xib file for other languages, go to the File Inspector while looking at a .xib file.

Scroll down.

The screenshot shows the Xcode interface with the following details:

- Project Navigator:** Shows the project structure with files like LabelMoverAppDelegate.h, LabelMoverAppDelegate.m, MainWindow.xib, LabelMoverViewController.h, LabelMoverViewController.m, and LabelMoverViewController.xib selected.
- Main View:** Displays the XIB file content, which includes a UIWebView with the text "Hello!" and a UIImageView.
- File Inspector (Visible on the right):**
  - Interface Builder Document:** Includes sections for Document Versioning (Deployment set to Project SDK Version), Development Default Version, Localization Locking (Default set to Nothing), and a Localization section for English.
  - Localization:** Shows the English localization entry.
  - Target Membership:** Shows the LabelMover target selected.
  - Text Settings:** Provides options for text styling.
- Callouts:** Two green callout bubbles point to the Localization section in the File Inspector. One bubble contains the text "To create versions of the .xib file for other languages, go to the File Inspector while looking at a .xib file." The other bubble contains the text "Scroll down."

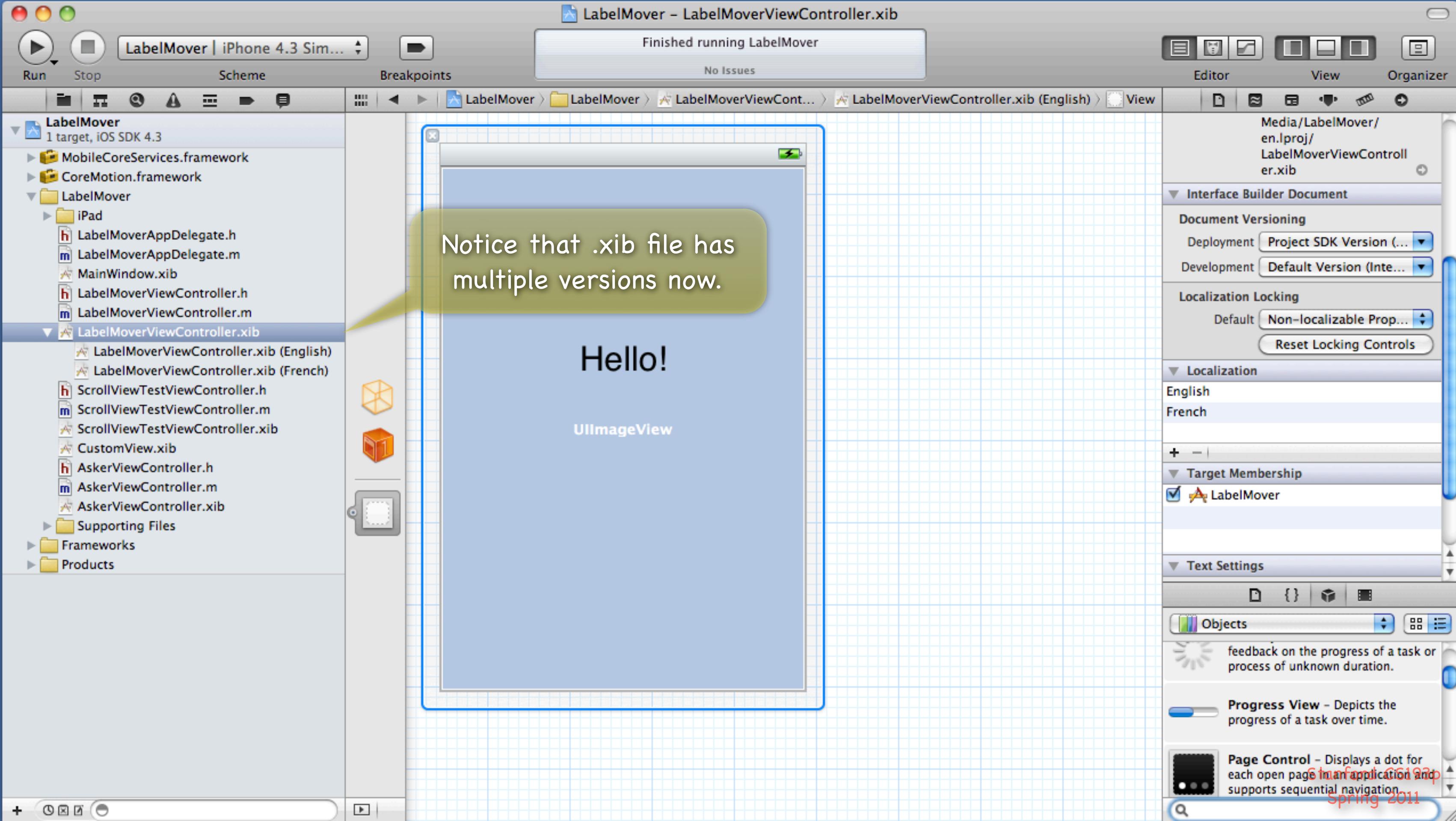


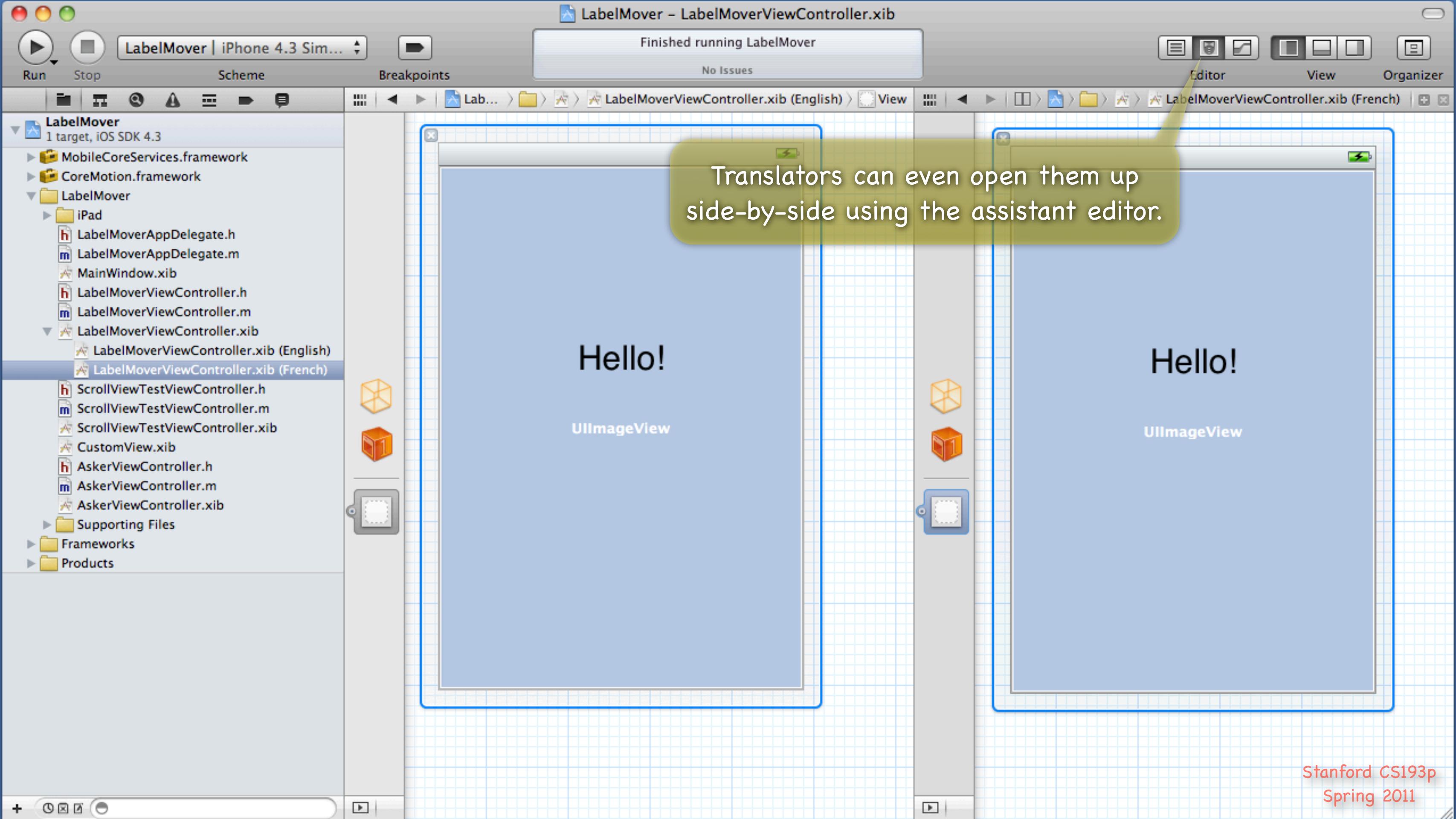


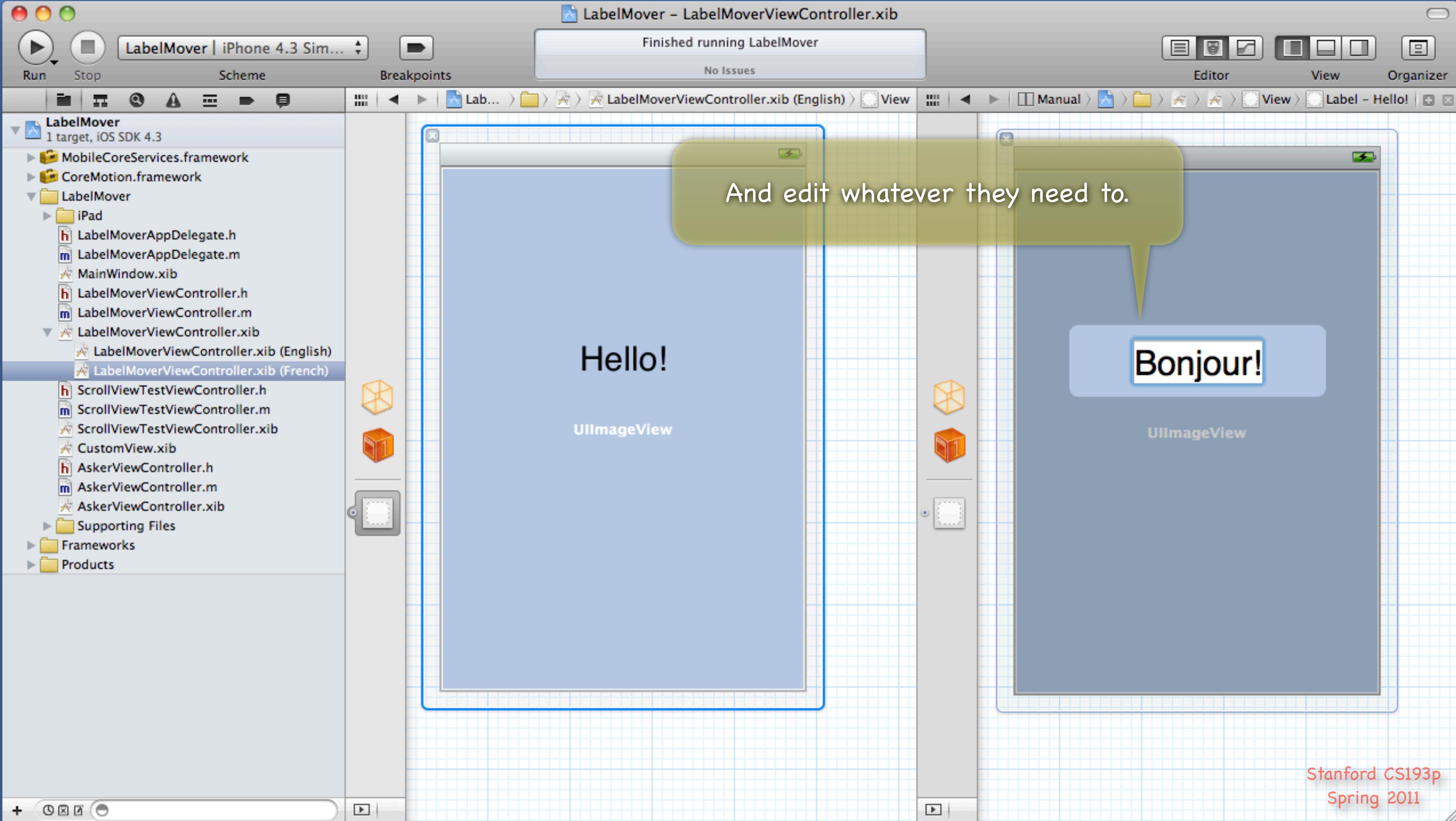
Add copies of the .xib file  
for other languages.

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# Localization

## ⌚ Localizing literal @“strings” in your application

Special NSBundle method for that.

```
- (NSString *)localizedStringForKey:(NSString *)key  
    value:(NSString *)defaultValue // if nil, will be key  
    table:(NSString *)tableName; // if nil: Localizable.strings
```

## ⌚ But there's a better way ...

```
NSString *NSLocalizedStringWithDefaultValue(NSString *key, NSString *table,  
                                         NSString *bundle, NSString *defaultValue,  
                                         NSString *comment); // to localizers!
```

Now use the command line utility genstrings to generate template .strings files from .m files!

Also NSLocalizedStringFromTableInBundle() (default value is the key)

and NSLocalizedStringFromTable() (default value is the key and uses main bundle).

## ⌚ Debugging

Set the NSUserDefaults NSShowNonLocalizedStrings to YES and a message will be logged to the console whenever this method cannot find a string.

LabelMover – LabelMoverViewController.m

LabelMover | iPad 4.3 Simulator

Run Stop Scheme Breakpoints No Issues Editor View Organizer

LabelMover 1 target, iOS SDK 4.3

MobileCoreServices.framework

CoreMotion.framework

LabelMover

- LabelMoverAppDelegate.h
- LabelMoverAppDelegate.m
- MainWindow.xib
- LabelMoverViewController.h
- LabelMoverViewController.m
- LabelMoverViewController.xib
- LabelMoverViewController.strings
- AskerViewController.h
- AskerViewController.m
- AskerViewController.xib

iPad

Supporting Files

Frameworks

- UIKit.framework
- Foundation.framework
- CoreGraphics.framework

Products

```
+ (NSString *)UI_STRING_Camera
{
    return NSLocalizedStringFromTable(@"Camera", @"LabelMoverViewController", @"The choice in the UI
for using the camera as the source of a background image for the LabelMover view");
}

+ (NSString *)UI_STRING_PhotoLibrary
{
    return NSLocalizedStringFromTable(@"Photo Library", @"LabelMoverViewController", @"The choice in
the UI for using the camera as the source of a background image for the LabelMover view");
}

// handles long presses by putting up the Photo library
// or, if a camera is available, by putting up an action sheet to ask the user
// whether they want to pick from the camera or from the library
- (void)press:(UILongPressGestureRecognizer *)gesture
{
    if (gesture.state == UIGestureRecognizerStateBegan)
    {
        CGRect gestureLocation = CGRectMakeZero;
        gestureLocation.origin = [gesture locationInView:self.view];
        self.imagePickerPopoverLocation = gestureLocation;

        if (YES) // [UIImagePickerController isSourceTypeAvailable:
                  UIImagePickerControllerSourceTypeCamera])
        {
            // no cancel button needed (or allowed) on iPad
            // (since it's in a popover, user can just click outside popover to cancel)
            NSString *cancelButtonTitle = NSLocalizedStringFromTable(@"Cancel",
@"LabelMoverViewController", @"Button to click to cancel picking a source from which
to choose an image to be the background of the LabelMover view");
            NSString *sourceChooserTitle = NSLocalizedStringFromTable(@"Choose Background Image
Source", @"LabelMoverViewController", @"Title of the action sheet which lets the
user choose which source to use to choose an image to be the background of the
LabelMover view");

            if (UI_USER_INTERFACE_IDIOM() == UIUserInterfaceIdiomPad) cancelButtonTitle = nil;

            UIActionSheet *actionSheet = [[UIActionSheet alloc] initWithTitle:sourceChooserTitle
                                                               delegate:self
                                                               cancelButtonTitle:cancelButtonTitle
                                                               destructiveButtonTitle:nil
                                                               otherButtonTitles:[[self class]
UI_STRING_Camera], [[self class]
UI_STRING_PhotoLibrary], nil];
        }
    }
}
```

If you change your code to look like this ...

... and this ...

No Matches

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LabelMover - LabelMoverViewController.strings

Finished running LabelMover  
No Issues

Run Stop Scheme Breakpoints Editor View Organizer

LabelMover | iPad 4.3 Simulator

LabelMover > LabelMover > LabelMoverViewController.strings (English) > No Selection

/\* The choice in the UI for using the camera as the source of a background image for the LabelMover view \*/  
"Camera" = "Camera";  
  
/\* Button to click to cancel picking a source from which to choose an image to be the background of the LabelMover view \*/  
"Cancel" = "Cancel";  
  
/\* Title of the action sheet which lets the user choose which source to use to choose an image to be the background of the LabelMover view \*/  
"Choose Background Image Source" = "Choose Background Image Source";  
  
/\* The choice in the UI for using the camera as the source of a background image for the LabelMover view \*/  
"Photo Library" = "Photo Library";

Identity and Type  
Localization  
English  
Target Membership  
Text Settings

... the genstrings tool will generate a .strings file like this.

Whatever you name the .strings file (in this case LabelMoverViewController.strings) is the name of the “table” you use in the code.

No Matches

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LabelMover – LabelMoverViewController.strings

LabelMover | iPad 4.3 Simulator

Run Stop Scheme Breakpoints

Finished running LabelMover

No Issues

Editor View Organizer

LabelMover

1 target, iOS SDK 4.3

MobileCoreServices.framework

CoreMotion.framework

LabelMover

LabelMoverAppDelegate.h

LabelMoverAppDelegate.m

MainWindow.xib

LabelMoverViewController.h

LabelMoverViewController.m

LabelMoverViewController.xib

LabelMoverViewController.strings

AskerViewController.h

AskerViewController.m

AskerViewController.xib

iPad

Supporting Files

Frameworks

UIKit.framework

Foundation.framework

CoreGraphics.framework

Products

LabelMover > LabelMover > LabelMoverViewController.strings (English) > No Selection

```
/* The choice in the UI for using the camera as the source of a background image for the LabelMover view */
"Camera" = "Camera";

/* Button to click to cancel picking a source from which to choose an image to be the background of the LabelMover view */
"Cancel" = "Cancel";

/* Title of the action sheet which lets the user choose which source to use to choose an image to be the background of the LabelMover view */
"Choose Background Image Source" = "Choose Background Image Source";

/* The choice in the UI for using the camera as the source of a background image for the LabelMover view */
"Photo Library" = "Photo Library";
```

Identity and Type

Localization

English

+ -

English

French

Add all

Japanese (ja)

German (de)

Spanish (es)

Italian (it)

Portuguese (pt)

Portuguese—Portugal (pt-PT)

Dutch (nl)

Swedish (sv)

Norwegian Bokmål (nb)

Danish (da)

Finnish (fi)

Russian (ru)

Polish (pl)

Chinese (zh-Hans)

Chinese (zh-Hant)

Korean (ko)

Other

You can then create localized versions.

No Matches

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LabelMover – LabelMoverViewController.strings

Run Stop Scheme Breakpoints Editor View Organizer

LabelMover | iPad 4.3 Simulator

Finished running LabelMover  
No Issues

LabelMover > LabelMover > LabelMoverViewController.strings (French) > No Selection

/\* The choice in the UI for using the camera as the source of a background image for the LabelMover view \*/  
"Camera" = "Caméra";  
  
/\* Button to click to cancel picking a source from which to choose an image to be the background of the LabelMover view \*/  
"Cancel" = "Annuler";  
  
/\* Title of the action sheet which lets the user choose which source to use to choose an image to be the background of the LabelMover view \*/  
"Choose Background Image Source" = "Choisir la source ...";  
  
/\* The choice in the UI for using the camera as the source of a background image for the LabelMover view \*/  
"Photo Library" = "Phototthèque";

Identity Localization English French Target Membership Text Settings

LabelMoverAppDelegate.h LabelMoverAppDelegate.m MainWindow.xib LabelMoverViewController.h LabelMoverViewController.m LabelMoverViewController.xib LabelMoverViewController.strings LabelMoverView.strings (English) LabelMoverView.strings (French) AskerViewController.h AskerViewController.m AskerViewController.xib iPad Supporting Files Frameworks UIKit.framework Foundation.framework CoreGraphics.framework Products

No Matches

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Here's a French version, for example.

# Localization

## ⌚ Warning

When you change a file (e.g. LabelMoverViewController.strings) to be localized, you should probably Build Clean (sometimes the old, non-localized version will get installed at the top level and then your localized versions will not get used).

# Settings

- A little bit of UI for your application in the Settings application

You should use this sparingly (if at all).

It's appropriate only for very rarely used settings or default behavior.

You don't want to make your users ever have to go here for normal use of your application.

The settings appear in your application via NSUserDefaults.

You specify the UI and the associated default in a property list file ...



LabelMover - Root.plist

Running LabelMover on iPad Simulator

No Issues

Editor View Organizer

LabelMover | iPad 4.3 Simulator Scheme Breakpoints

LabelMover > LabelMover > Settings.bundle > Root.plist > No Selection

| Key                              | Type       | Value              |
|----------------------------------|------------|--------------------|
| Preference Items                 | Array      | (4 items)          |
| Item 0 (Group - Group)           | Diction... | (2 items)          |
| Title                            | String     | Group              |
| Type                             | String     | Group              |
| Item 1 (Text Field - Name)       | Diction... | (8 items)          |
| Autocapitalization Style         | String     | None               |
| Autocorrection Style             | String     | No Autocorrection  |
| Default Value                    | String     |                    |
| Text Field Is Secure             | Boolean    | NO                 |
| Identifier                       | String     | name_preference    |
| Keyboard Type                    | String     | Alphabet           |
| Title                            | String     | Name               |
| Type                             | String     | Text Field         |
| Item 2 (Toggle Switch - Enabled) | Diction... | (4 items)          |
| Default Value                    | Boolean    | YES                |
| Identifier                       | String     | enabled_preference |
| Title                            | String     | Enabled            |
| Type                             | String     | Toggle Switch      |
| Item 3 (Slider)                  | Diction... | (7 items)          |
| Default Value                    | Number     | 0.5                |
| Identifier                       | String     | slider_preference  |
| Maximum Value                    | Number     | 1                  |
| Max Value Image Filename         | String     |                    |
| Minimum Value                    | Number     | 0                  |
| Min Value Image Filename         | String     |                    |
| Type                             | String     | Slider             |
| Strings Filename                 | String     | Root               |

A sort of “example” settings bundle will be created for you. You can edit it from here. Check the documentation for all the possibilities.

It is possible to have multiple “pages” of settings. See documentation for details.

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LabelMover - Root.plist

Running LabelMover on iPad Simulator

No Issues

Editor View Organizer

LabelMover | iPad 4.3 Simulator Scheme Breakpoints

LabelMover > LabelMover > Settings.bundle > Root.plist > No Selection

| Key                              | Type       | Value              |
|----------------------------------|------------|--------------------|
| Preference Items                 | Array      | (4 items)          |
| Item 0 (Group - Group)           | Diction... | (2 items)          |
| Title                            | String     | Group              |
| Type                             | String     | Group              |
| Item 1 (Text Field - Name)       | Diction... | (8 items)          |
| Autocapitalization Style         | String     | None               |
| Autocorrection Style             | String     | No Autocorrection  |
| Default Value                    | String     |                    |
| Text Field Is Secure             | Boolean    | NO                 |
| Identifier                       | String     | name_preference    |
| Keyboard Type                    | String     | Alphabet           |
| Title                            | String     | Name               |
| Type                             | String     | Text Field         |
| Item 2 (Toggle Switch - Enabled) | Diction... | (4 items)          |
| Default Value                    | Boolean    | YES                |
| Identifier                       | String     | enabled_preference |
| Title                            | String     | Enabled            |
| Type                             | String     | Toggle Switch      |
| Item 3 (Slider)                  | Diction... | (7 items)          |
| Default Value                    | Number     | 0.5                |
| Identifier                       | String     | slider_preference  |
| Maximum Value                    | Number     | 1                  |
| Max Value Image Filename         | String     |                    |
| Minimum Value                    | Number     | 0                  |
| Min Value Image Filename         | String     |                    |
| Type                             | String     | Slider             |
| Strings Filename                 | String     | Root               |

Note the en.lproj.  
Yes, settings are localizable, but it's  
not very well supported in Xcode.

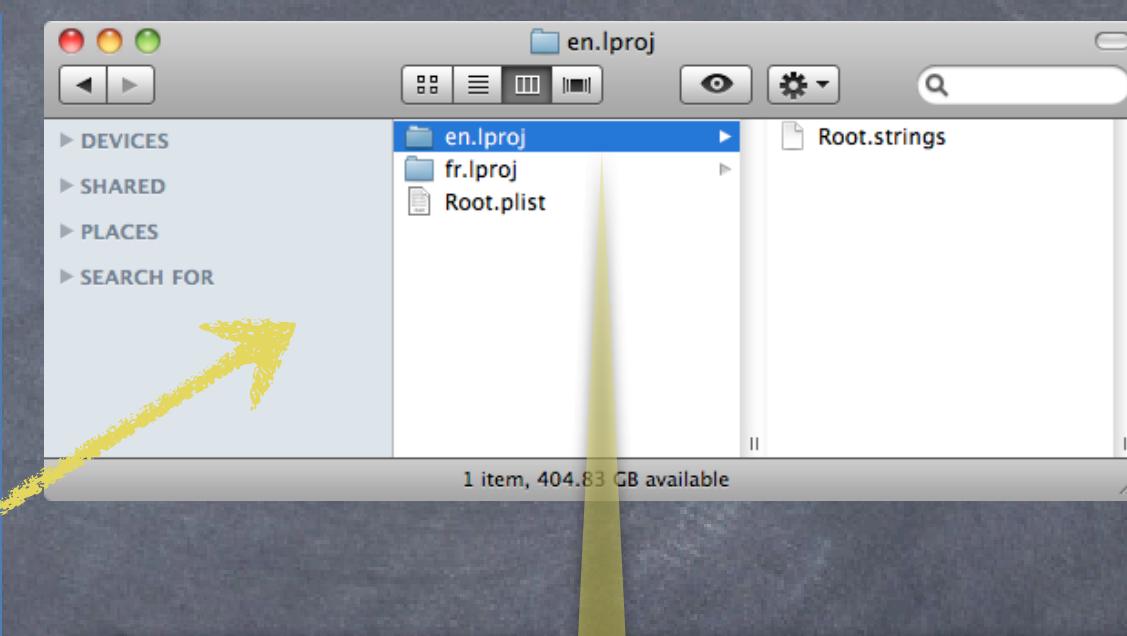
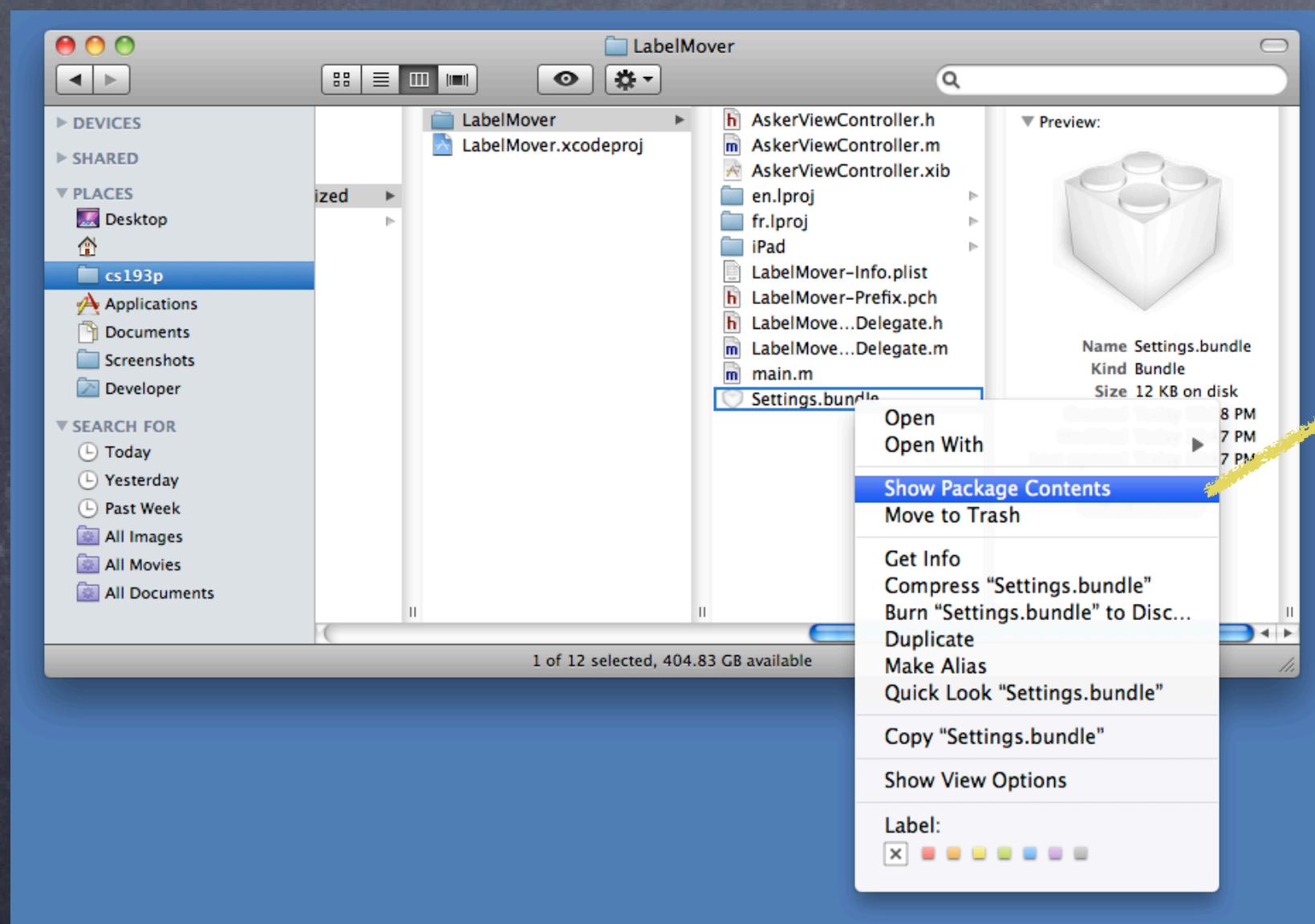
Also, note Strings Filename  
(Root.strings) here. This is the  
name of the .strings file to  
localize this page of the settings.

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# Settings

☞ Unfortunately, localization of settings is a bit of a pain

You have to find the Settings.bundle in your Finder and create .lproj directories yourself.  
Each .lproj directory should contain a .strings file for each screen in your settings.



Copy and paste en.lproj to other languages  
(like fr.lproj), then edit the Root.strings  
(or other .strings files) inside for each language.