Developing Applications for iOS

Lab 10:
Nearby Deals (6 of 6)

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Task 1

Task: Save the favorite deals on the device. Add local storage for this using Core Data.

1. Launch Xcode and go to “File > Open” and select the Xcode project (.xcodeproj) inside the “NearbyDeals(5of6)” folder.

2. Run the application in iOS Simulator and take a look over the application to remember what was done last time.

3. Stop running the application.

4. We want to save the “favorite” deals of the user locally on the device. If the user taps on a deal to view details about it, we add it to the list of favorite deals. This list will be presented in another View Controller that can be accessed from the Tab Bar.

The list of favorite deals is going to be editable (the user can delete deals from this list).

Look over the next slide to see a mock-up of this View Controller.

Favorite Deals

Task 1

Task: Save the favorite deals on the device. Add local storage for this using Core Data.

5. The first thing to do is to add the Core Data framework to our project.

Open Project Navigator and click on the Project itself.

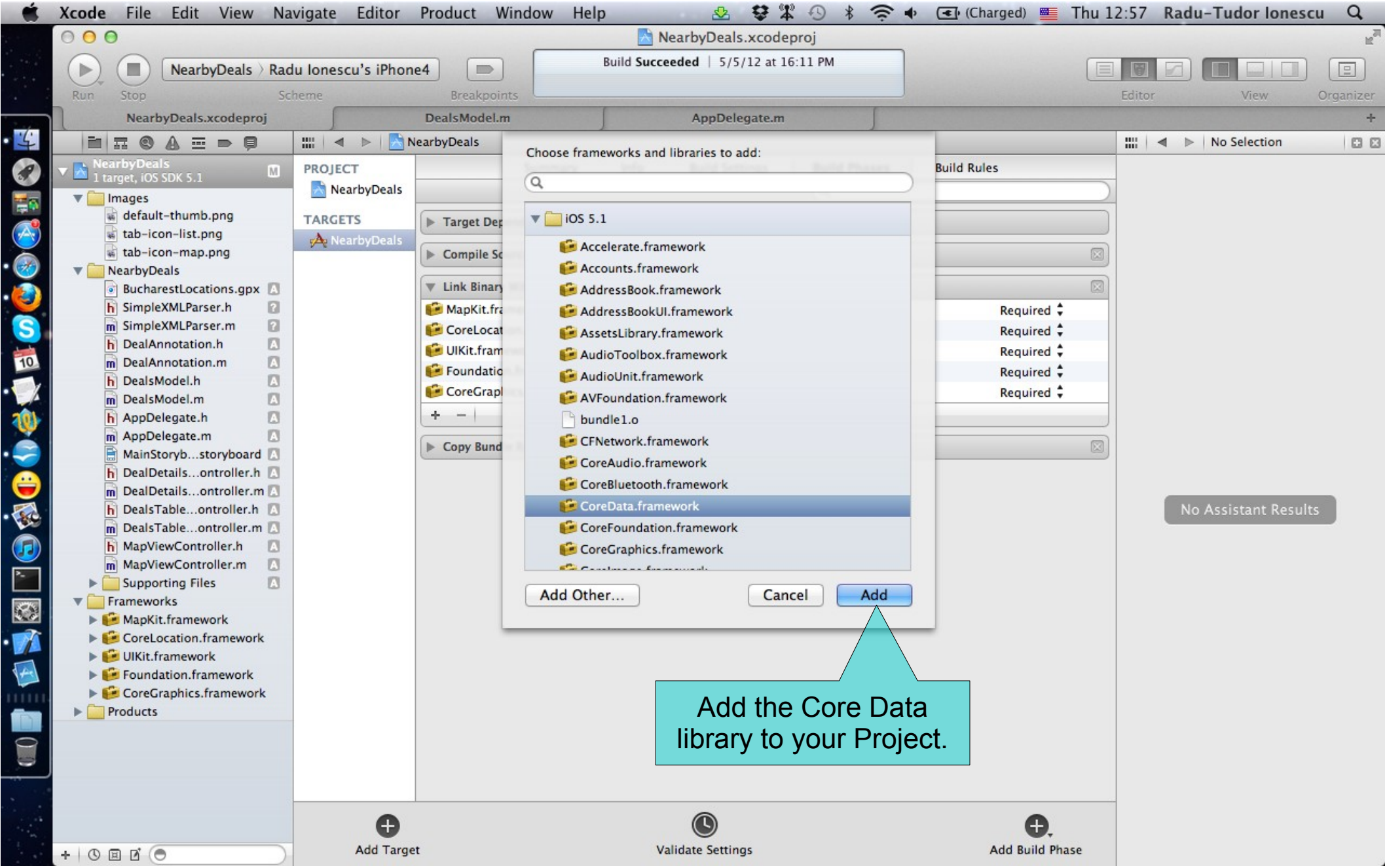
6. Select NearbyDeals under Targets, then go on the “Build Phases” tab.

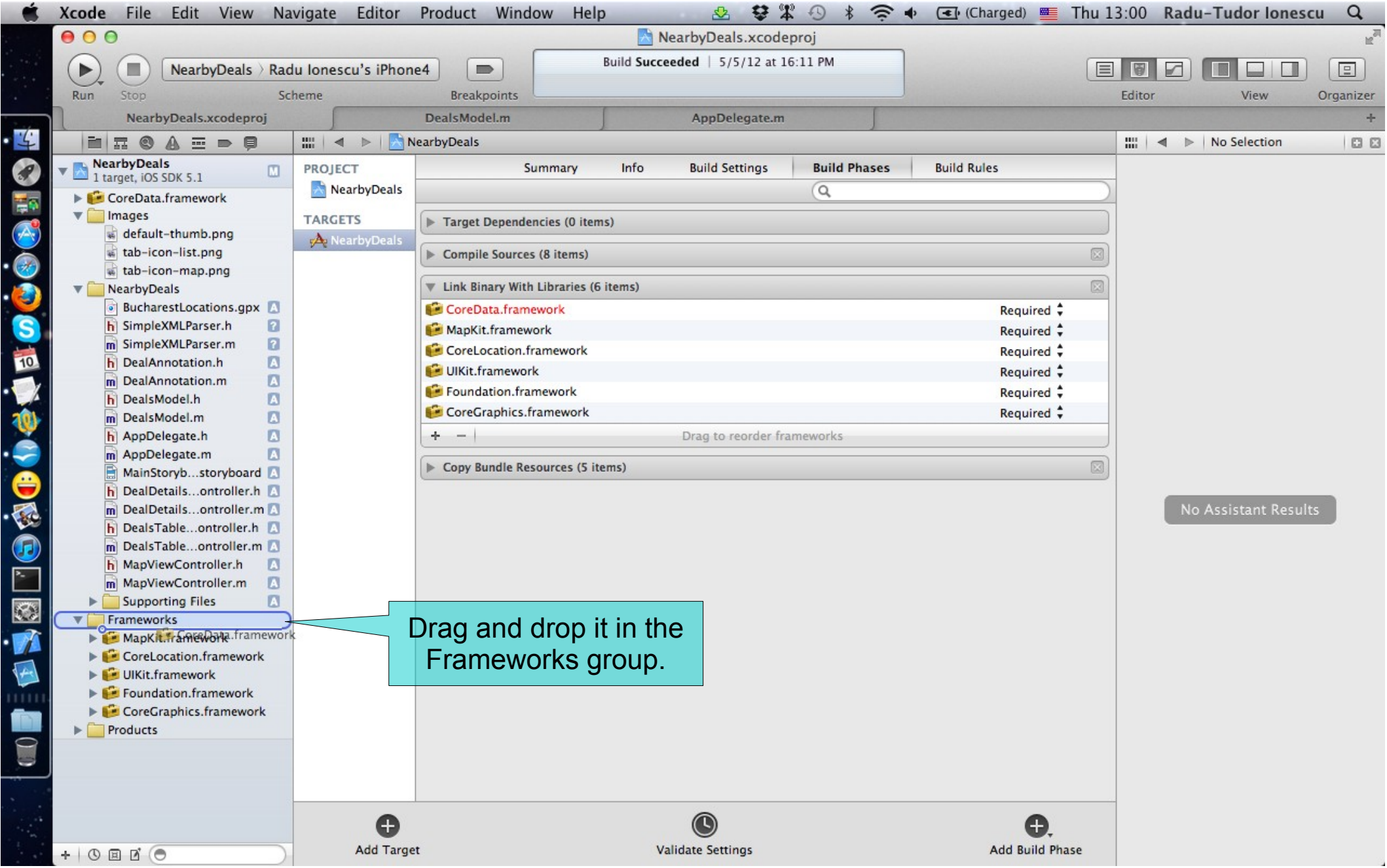
7. Expand “Link Binary with Libraries” and click on the “+” button to add a new framework.

8. Select the CoreData.framework from the pop-up window and click Add to add it to your Project.

9. Drag the CoreData.framework in Project Navigator and drop it under the Frameworks group.

See the next slides for hints.


Xcode File Edit View Navigate Editor Product Window Help
Thu 12:57 Radu-Tudor Ionescu
NearbyDeals.xcodeproj
Build Succeeded | 5/5/12 at 16:11 PM
NearbyDeals 〉 Radu Ionescu's iPhone4
Run Stop Scheme Breakpoints Editor View Organizer
NearbyDeals.xcodeproj DealsModel.m AppDelegate.m
NearbyDeals
1 target, iOS SDK 5.1
Images
default-thumb.png
tab-icon-list.png
tab-icon-map.png
NearbyDeals
BucharestLocations.gpx
SimpleXMLParser.h
SimpleXMLParser.m
DealAnnotation.h
DealAnnotation.m
DealsModel.h
DealsModel.m
AppDelegate.h
AppDelegate.m
MainStoryb...storyboard
DealDetails...ontroller.h
DealDetails...ontroller.m
DealsTable...ontroller.h
DealsTable...ontroller.m
MapViewController.h
MapViewController.m
Supporting Files
Frameworks
MapKit.framework
CoreLocation.framework
UIKit.framework
Foundation.framework
CoreGraphics.framework
Products
PROJECT
NearbyDeals
TARGETS
NearbyDeals
Target Dep
Compile So
Link Binary
MapKit.fra
CoreLocat
UIKit.fram
Foundatio
CoreGrapl
Copy Bund
Build Rules
Required
Required
Required
Required
Required
No Selection
No Assistant Results
Choose frameworks and libraries to add:
iOS 5.1
Accelerate.framework
Accounts.framework
AddressBook.framework
AddressBookUI.framework
AssetsLibrary.framework
AudioToolbox.framework
AudioUnit.framework
AVFoundation.framework
bundle1.o
CFNetwork.framework
CoreAudio.framework
CoreBluetooth.framework
CoreData.framework
CoreFoundation.framework
CoreGraphics.framework
Add Other...
Cancel
Add
Add the Core Data library to your Project.
Add Target
Validate Settings
Add Build Phase


Xcode File Edit View Navigate Editor Product Window Help
Thu 13:00 Radu-Tudor Ionescu
NearbyDeals.xcodeproj
Run Stop NearbyDeals Radu Ionescu's iPhone4 Scheme Breakpoints
Build Succeeded 5/5/12 at 16:11 PM
Editor View Organizer
NearbyDeals.xcodeproj DealsModel.m AppDelegate.m
NearbyDeals
No Selection
NearbyDeals
1 target, iOS SDK 5.1
CoreData.framework
Images
default-thumb.png
tab-icon-list.png
tab-icon-map.png
NearbyDeals
BucharestLocations.gpx
SimpleXMLParser.h
SimpleXMLParser.m
DealAnnotation.h
DealAnnotation.m
DealsModel.h
DealsModel.m
AppDelegate.h
AppDelegate.m
MainStoryb...storyboard
DealDetails...ontroller.h
DealDetails...ontroller.m
DealsTable...ontroller.h
DealsTable...ontroller.m
MapViewController.h
MapViewController.m
Supporting Files
Frameworks
MapKit.framework
CoreLocation.framework
UIKit.framework
Foundation.framework
CoreGraphics.framework
Products
PROJECT
NearbyDeals
TARGETS
NearbyDeals
Summary Info Build Settings Build Phases Build Rules
Target Dependencies (0 items)
Compile Sources (8 items)
Link Binary With Libraries (6 items)
CoreData.framework Required
MapKit.framework Required
CoreLocation.framework Required
UIKit.framework Required
Foundation.framework Required
CoreGraphics.framework Required
Drag to reorder frameworks
Copy Bundle Resources (5 items)
No Assistant Results
Drag and drop it in the Frameworks group.
Add Target
Validate Settings
Add Build Phase

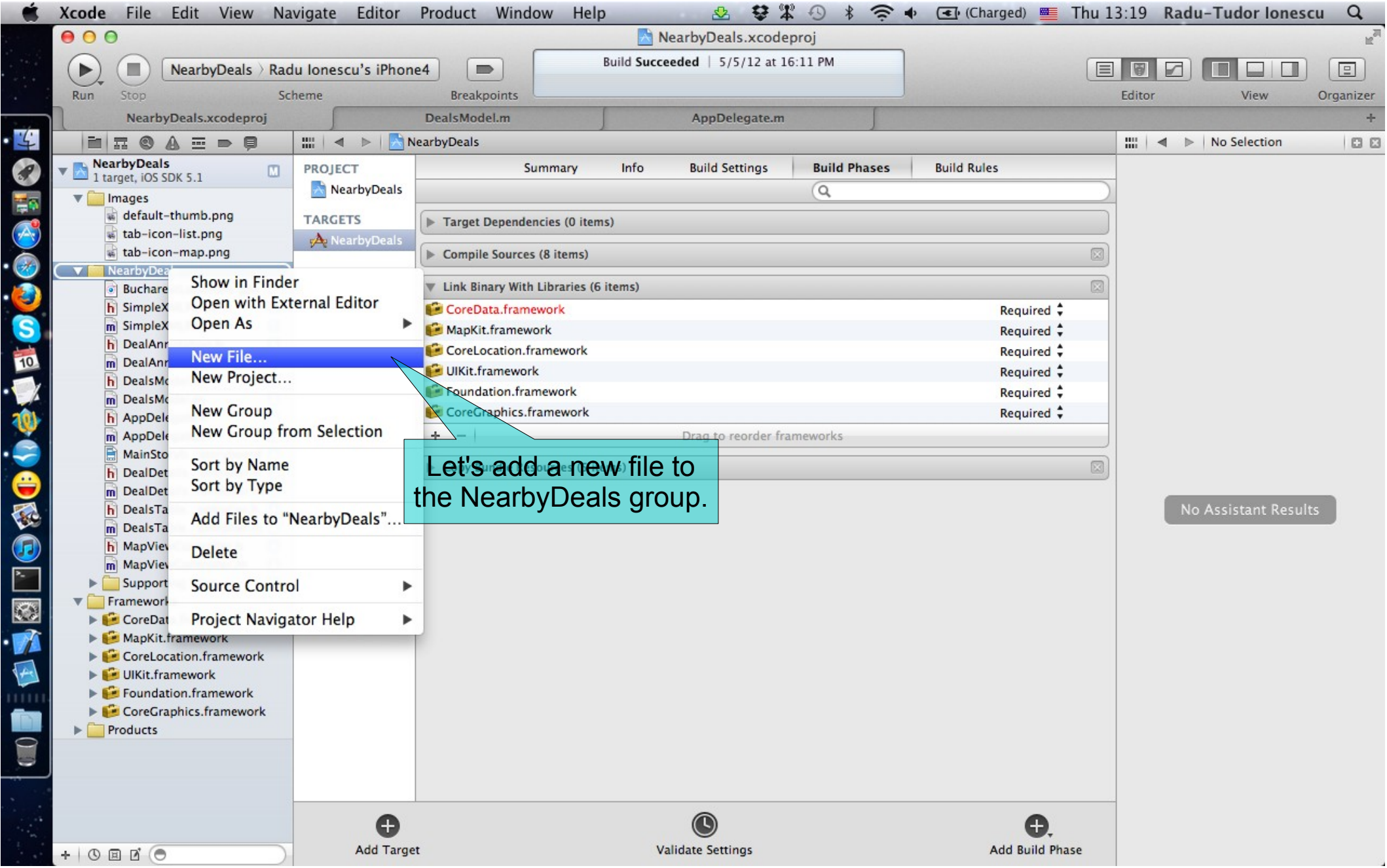
Task 1

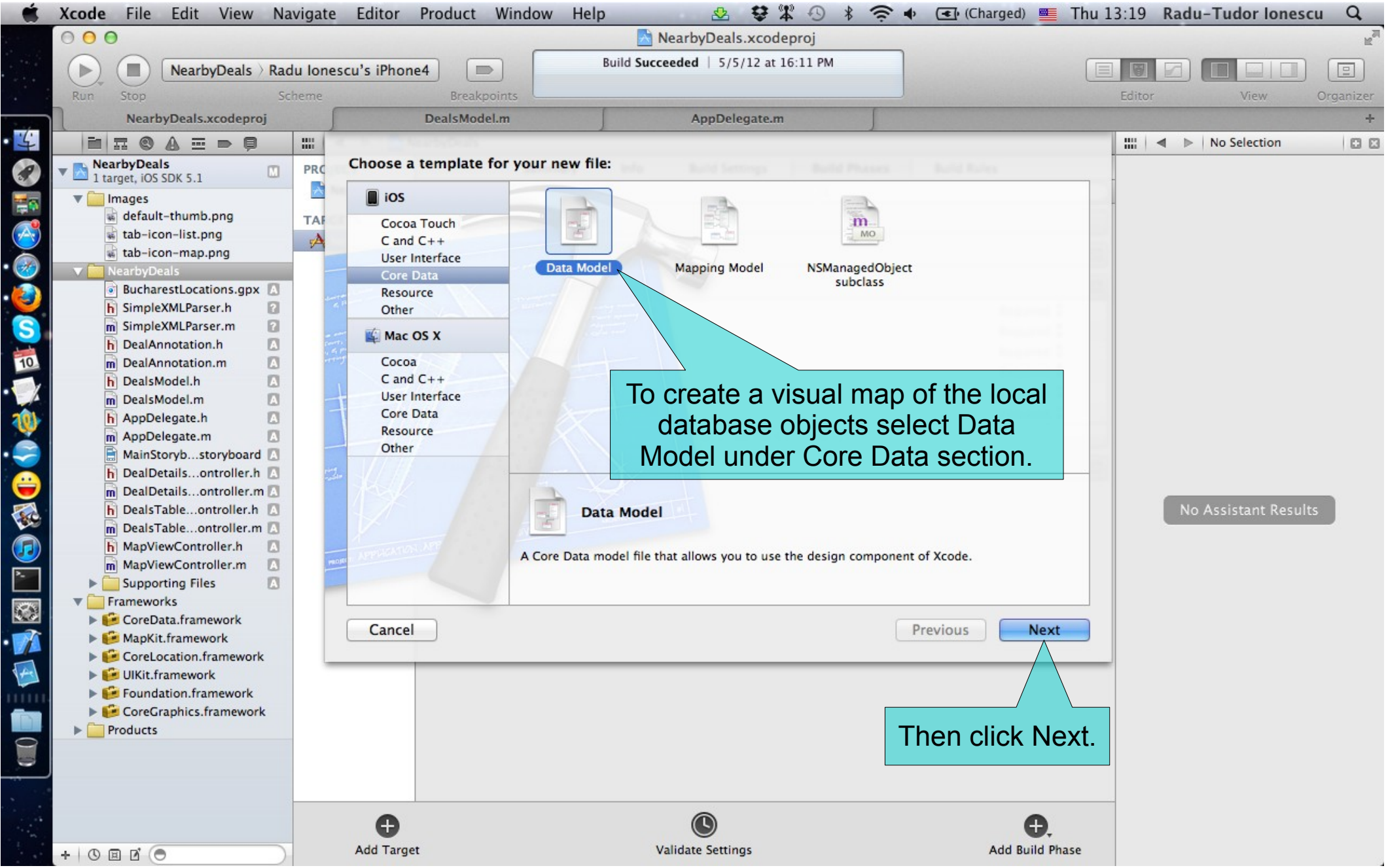
Task: Save the favorite deals on the device. Add local storage for this using Core Data.

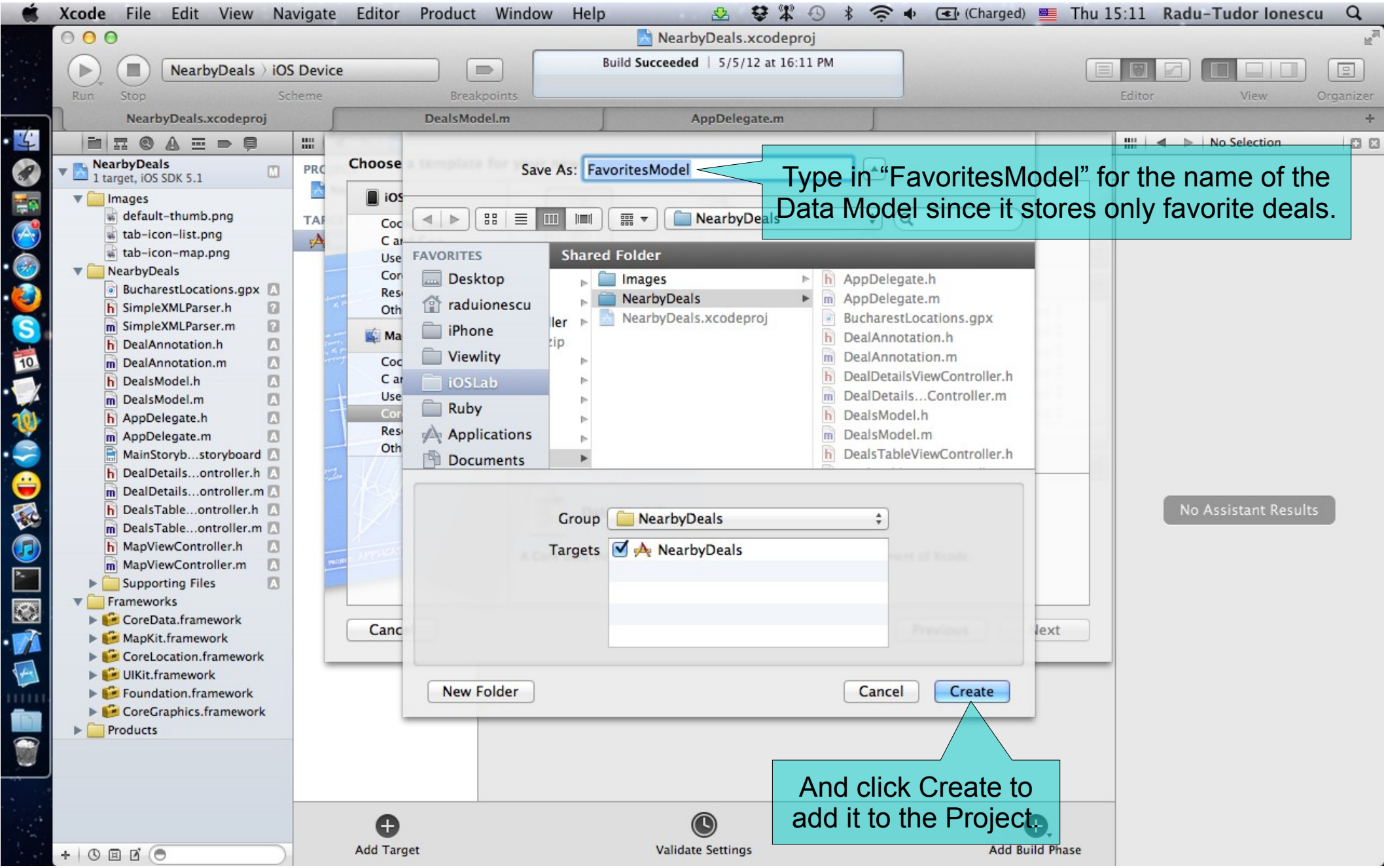
10. We are going to store the favorite deals using Core Data. Thus we add a Core Data Model to our Project and add the Deal Entity with the following Attributes: title (String), subtitle (String), latitude (Float), longitude (Float), thumbnail (Binary Data), url (String).

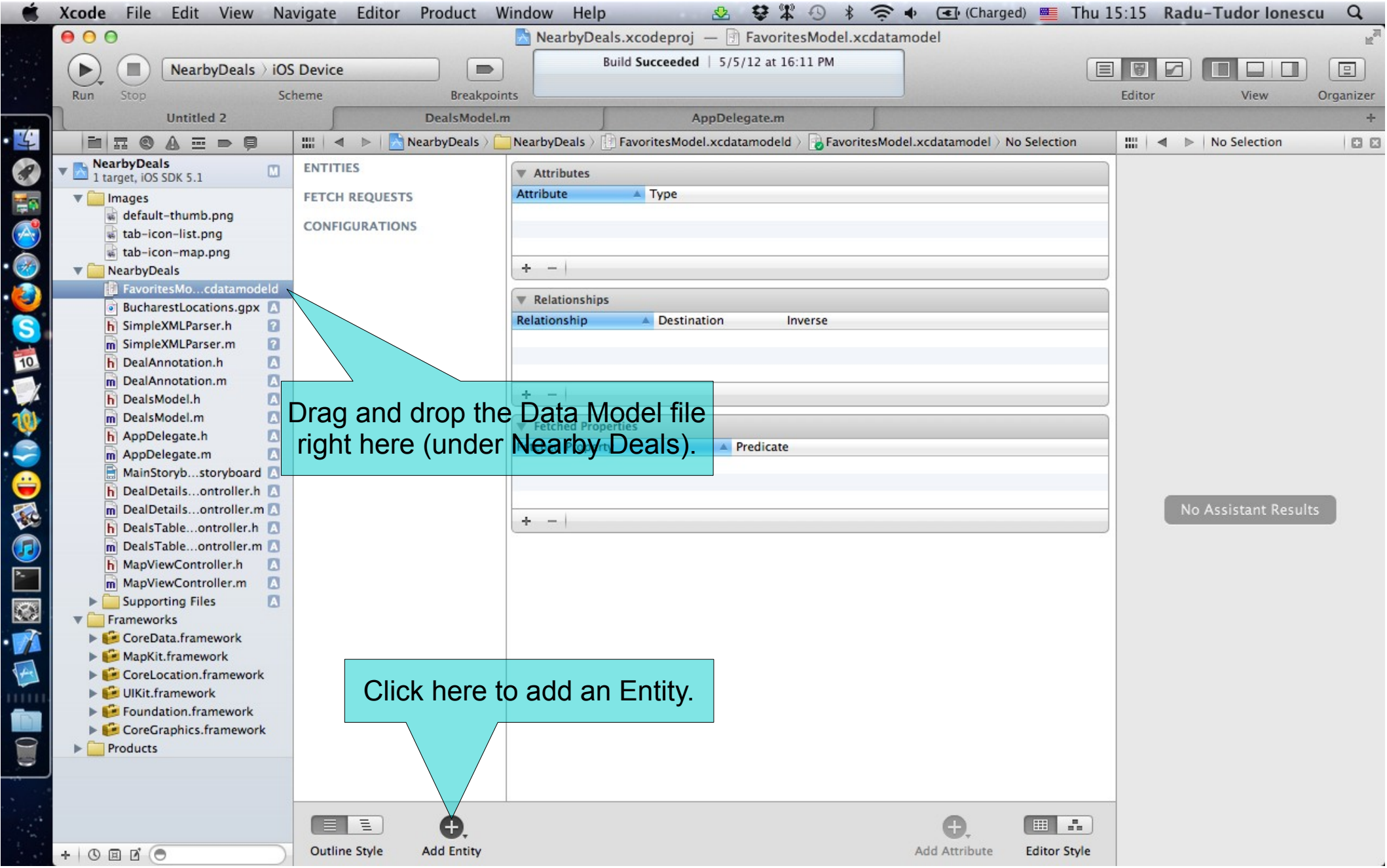
11. We will also automatically generate a class for this Entity.

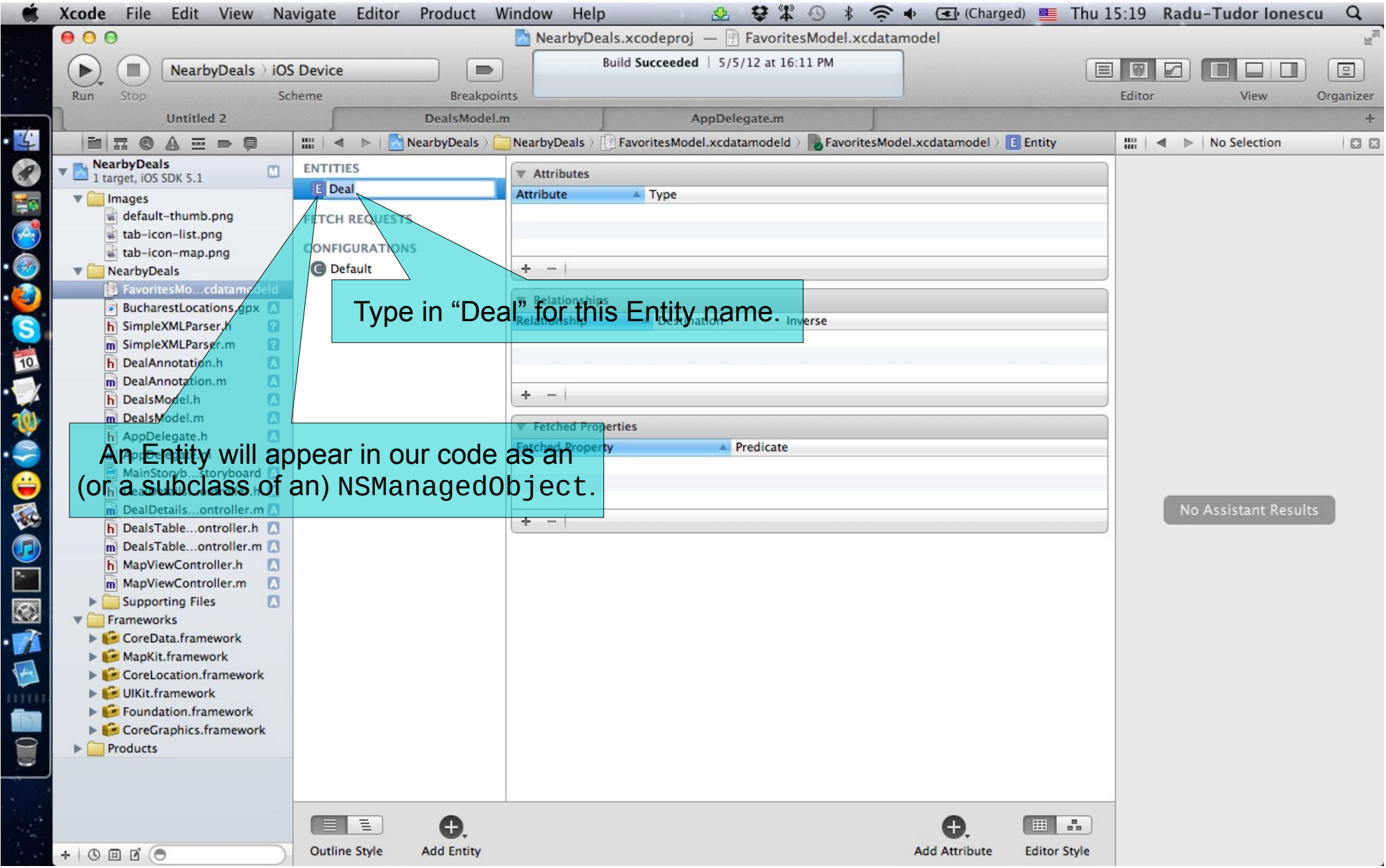
The next screenshots will help you in completing this task.

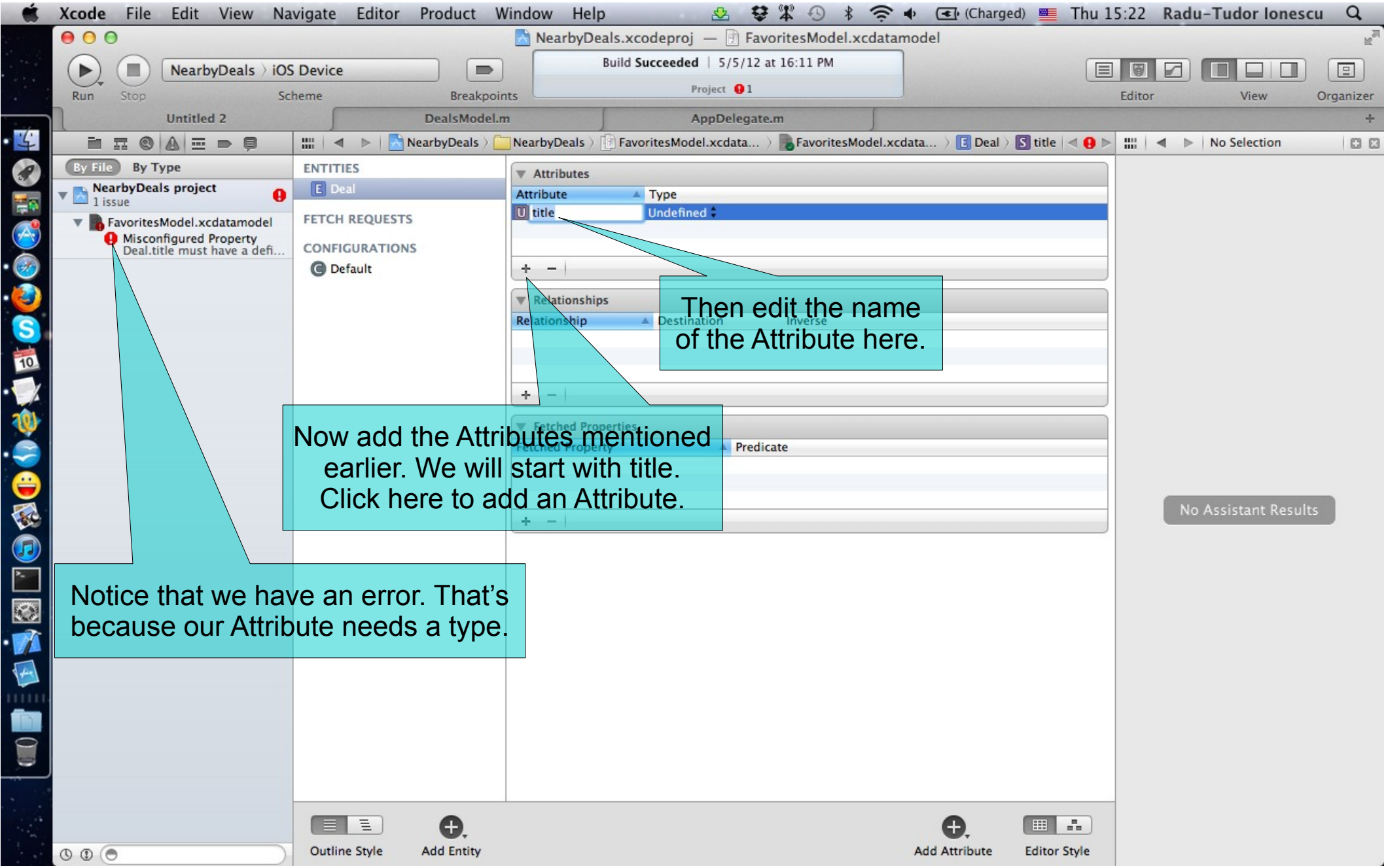

Xcode File Edit View Navigate Editor Product Window Help
Thu 13:19 Radu-Tudor Ionescu
NearbyDeals.xcodeproj
Build Succeeded | 5/5/12 at 16:11 PM
NearbyDeals › Radu Ionescu's iPhone4
Run Stop Scheme Breakpoints Editor View Organizer
NearbyDeals.xcodeproj DealsModel.m AppDelegate.m
NearbyDeals
No Selection
NearbyDeals
1 target, iOS SDK 5.1
Images
default-thumb.png
tab-icon-list.png
tab-icon-map.png
Show in Finder
Open with External Editor
Open As
New File...
New Project...
New Group
New Group from Selection
Sort by Name
Sort by Type
Add Files to "NearbyDeals"...
Delete
Source Control
Project Navigator Help
Let's add a new file to the NearbyDeals group.
PROJECT
NearbyDeals
TARGETS
NearbyDeals
Summary Info Build Settings Build Phases Build Rules
Target Dependencies (0 items)
Compile Sources (8 items)
Link Binary With Libraries (6 items)
CoreData.framework Required
MapKit.framework Required
CoreLocation.framework Required
UIKit.framework Required
Foundation.framework Required
CoreGraphics.framework Required
Drag to reorder frameworks
No Assistant Results
Add Target
Validate Settings
Add Build Phase

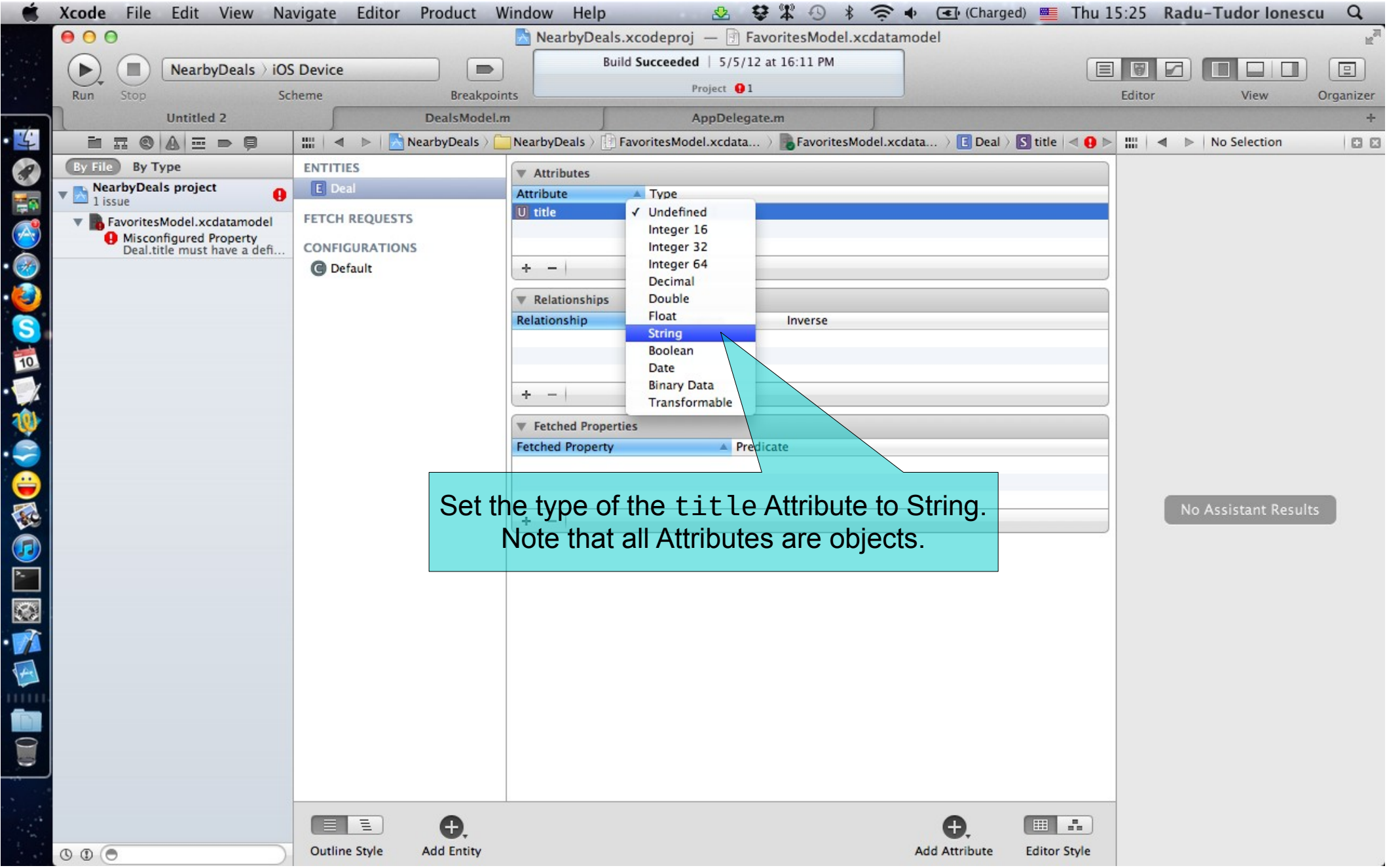

Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj
Build Succeeded | 5/5/12 at 16:11 PM
NearbyDeals
Choose a template for your new file:
iOS
Cocoa Touch
C and C++
User Interface
Core Data
Resource
Other
Mac OS X
Cocoa
C and C++
User Interface
Core Data
Resource
Other
Data Model
Mapping Model
NSManagedObject subclass
Data Model
A Core Data model file that allows you to use the design component of Xcode.
Cancel
Previous
Next
To create a visual map of the local database objects select Data Model under Core Data section.
Then click Next.
No Selection
No Assistant Results
Add Target
Validate Settings
Add Build Phase


Type in “FavoritesModel” for the name of the Data Model since it stores only favorite deals.
Save As: FavoritesModel
Shared Folder
Group NearbyDeals
Targets NearbyDeals
New Folder
Cancel
Create
And click Create to add it to the Project.
No Assistant Results
Add Target
Validate Settings
Add Build Phase

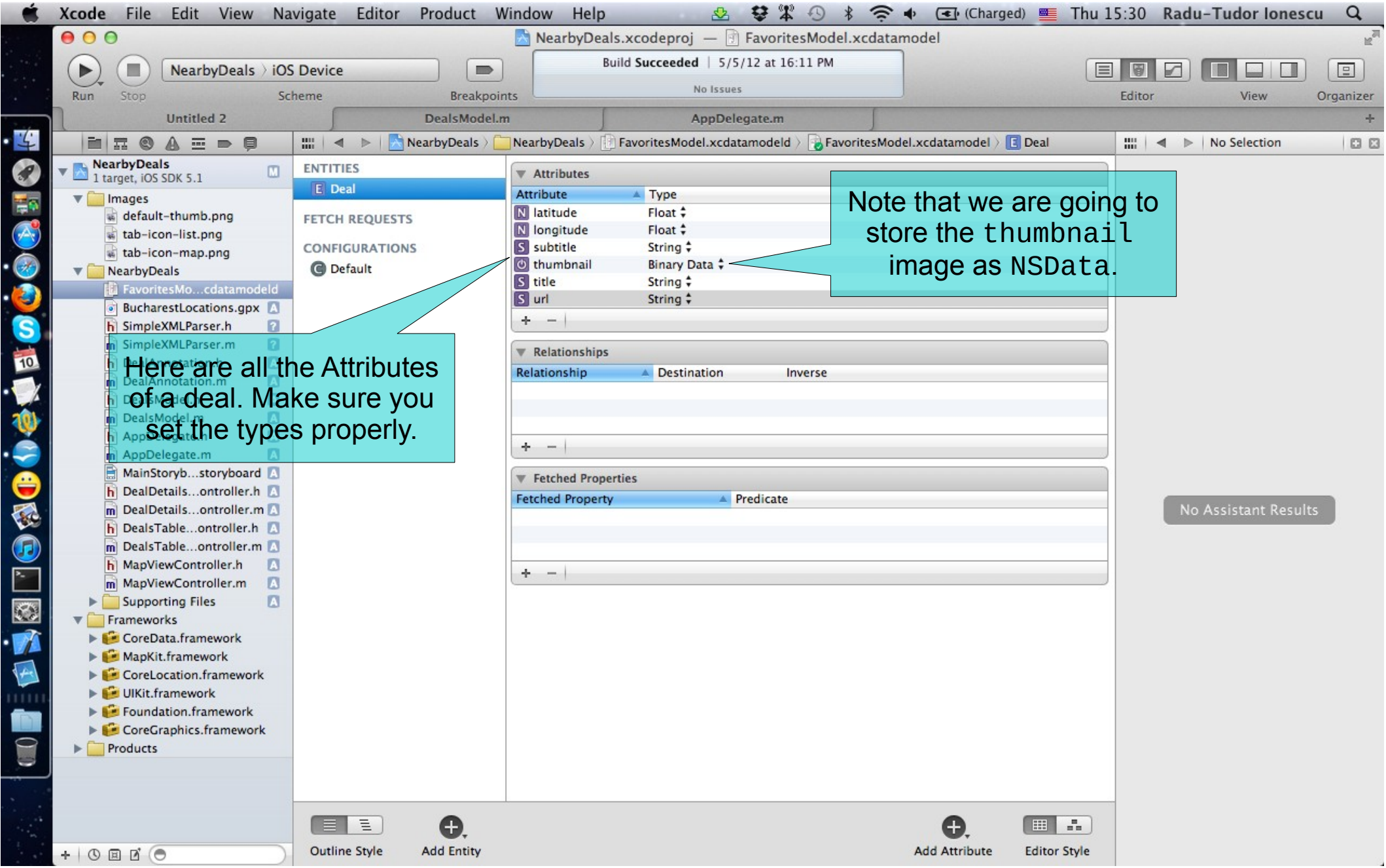

Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — FavoritesModel.xcdatamodel
Build Succeeded | 5/5/12 at 16:11 PM
Run Stop Scheme Breakpoints Editor View Organizer
Untitled 2 DealsModel.m AppDelegate.m
NearbyDeals
1 target, iOS SDK 5.1
Images
default-thumb.png
tab-icon-list.png
tab-icon-map.png
NearbyDeals
FavoritesMo...cdatamodeld
BucharestLocations.gpx
SimpleXMLParser.h
SimpleXMLParser.m
DealAnnotation.h
DealAnnotation.m
DealsModel.h
DealsModel.m
AppDelegate.h
AppDelegate.m
MainStoryb...storyboard
DealDetails...ontroller.h
DealDetails...ontroller.m
DealsTable...ontroller.h
DealsTable...ontroller.m
MapViewController.h
MapViewController.m
Supporting Files
Frameworks
CoreData.framework
MapKit.framework
CoreLocation.framework
UIKit.framework
Foundation.framework
CoreGraphics.framework
Products
ENTITIES
FETCH REQUESTS
CONFIGURATIONS
NearbyDeals › NearbyDeals › FavoritesModel.xcdatamodeld › FavoritesModel.xcdatamodel › No Selection
Attributes
Attribute Type
Relationships
Relationship Destination Inverse
Fetched Properties
Predicate
No Selection
No Assistant Results
Drag and drop the Data Model file right here (under Nearby Deals).
Click here to add an Entity.
Outline Style
Add Entity
Add Attribute
Editor Style

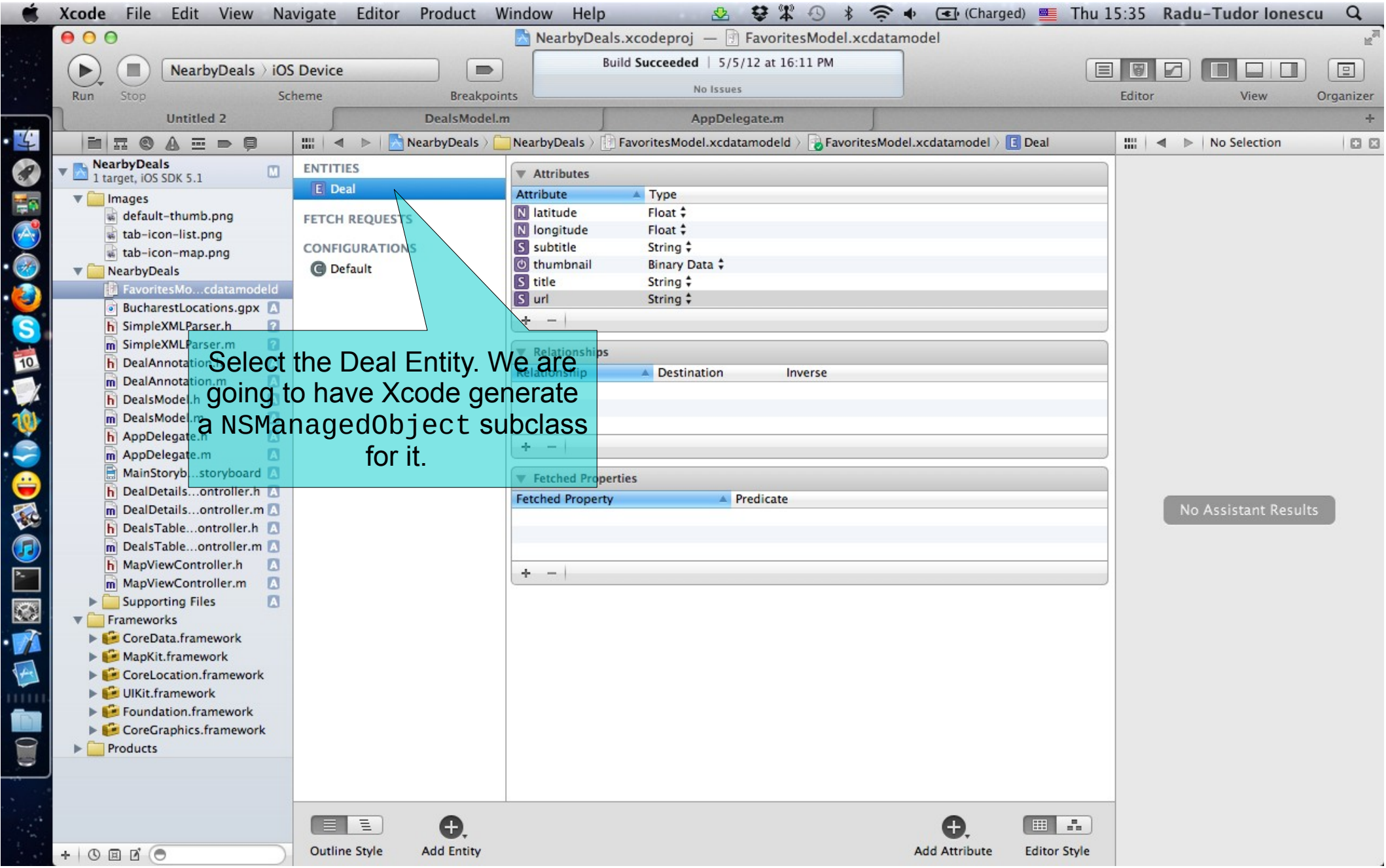

Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — FavoritesModel.xcdatamodel
Build Succeeded | 5/5/12 at 16:11 PM
Run Stop Scheme Breakpoints Editor View Organizer
Untitled 2 DealsModel.m AppDelegate.m
NearbyDeals
1 target, iOS SDK 5.1
Images
default-thumb.png
tab-icon-list.png
tab-icon-map.png
NearbyDeals
BucharestLocations.gpx
SimpleXMLParser.h
SimpleXMLParser.m
DealAnnotation.h
DealAnnotation.m
DealsModel.h
DealsModel.m
AppDelegate.h
DealDetails...ontroller.m
DealsTable...ontroller.h
DealsTable...ontroller.m
MapViewController.h
MapViewController.m
Supporting Files
Frameworks
CoreData.framework
MapKit.framework
CoreLocation.framework
UIKit.framework
Foundation.framework
CoreGraphics.framework
Products
ENTITIES
Deal
FETCH REQUESTS
CONFIGURATIONS
Default
Attributes
Attribute
Type
Relationships
Inverse
Fetched Properties
Predicate
Type in “Deal” for this Entity name.
An Entity will appear in our code as an (or a subclass of an) NSManagedObject.
No Selection
No Assistant Results
Outline Style
Add Entity
Add Attribute
Editor Style


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — FavoritesModel.xcdatamodel
Run Stop NearbyDeals iOS Device Scheme Breakpoints
Build Succeeded | 5/5/12 at 16:11 PM
Project 1
Editor View Organizer
Untitled 2 DealsModel.m AppDelegate.m
By File By Type
NearbyDeals project
1 issue
FavoritesModel.xcdatamodel
Misconfigured Property
Deal.title must have a defi...
ENTITIES
Deal
FETCH REQUESTS
CONFIGURATIONS
Default
Attributes
Attribute Type
title Undefined
Relationships
Relationship Destination Inverse
Fetched Properties
Fetched Property Predicate
No Selection
No Assistant Results
Outline Style
Add Entity
Add Attribute
Editor Style
Then edit the name of the Attribute here.
Now add the Attributes mentioned earlier. We will start with title. Click here to add an Attribute.
Notice that we have an error. That's because our Attribute needs a type.

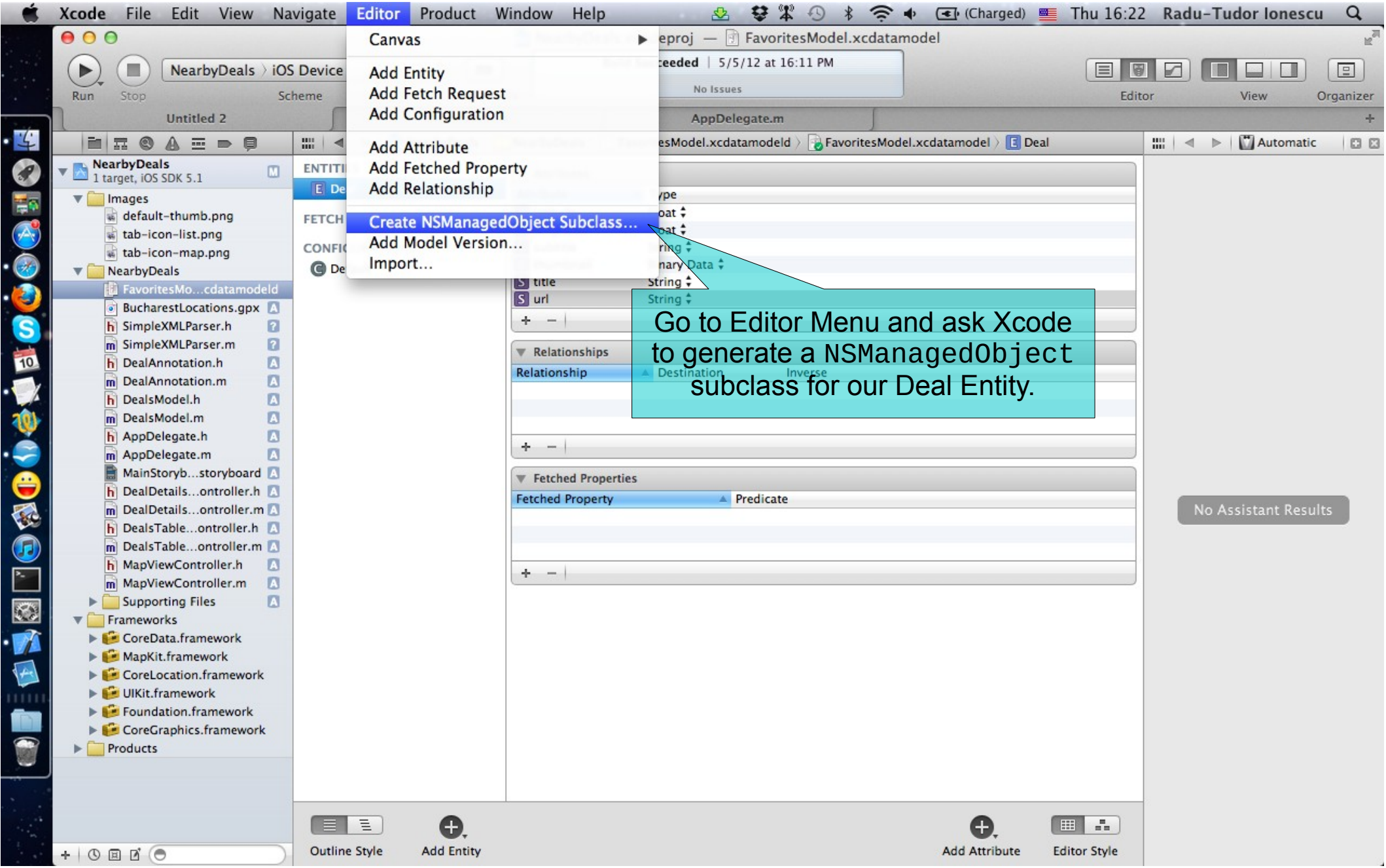


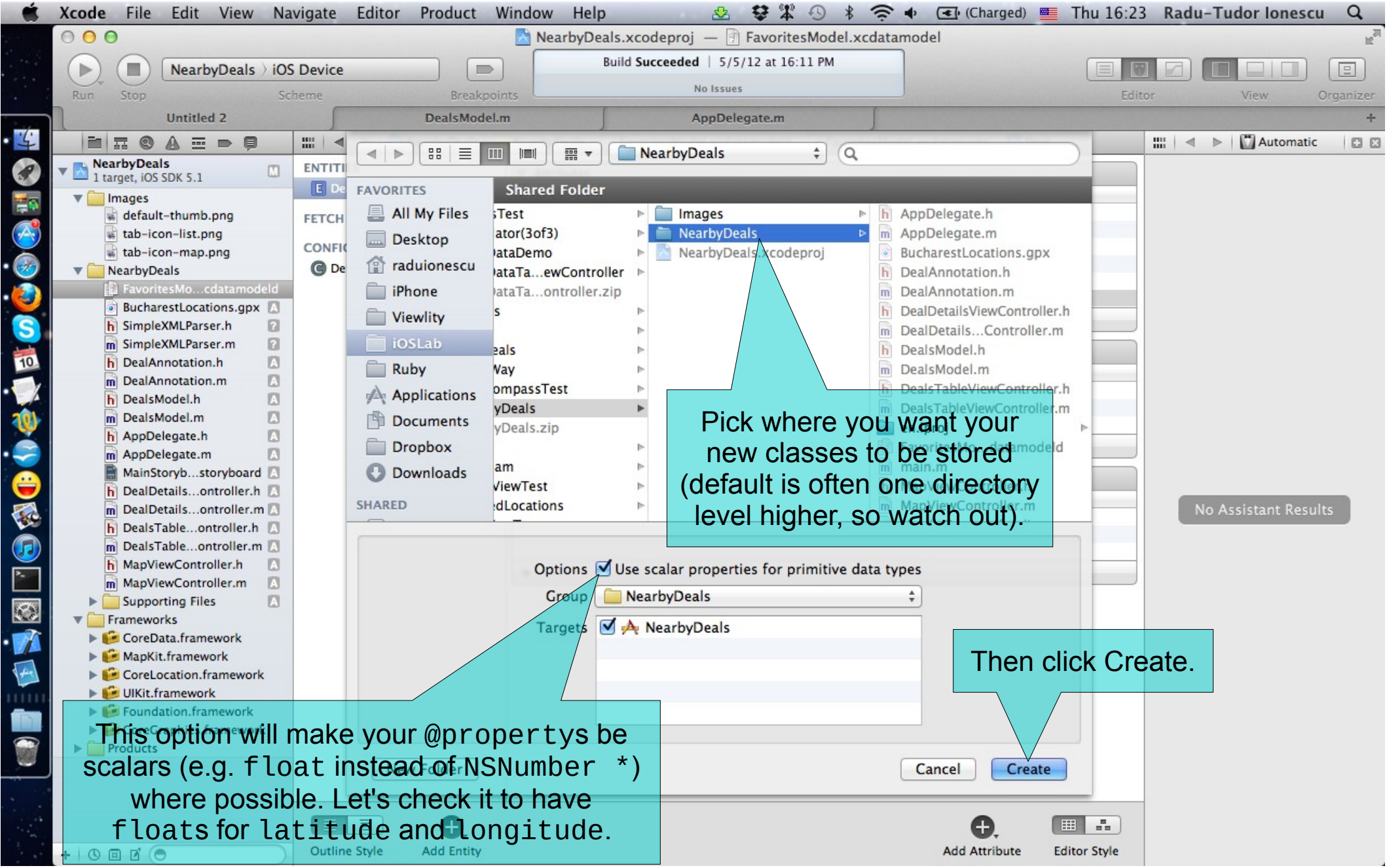
Set the type of the `title` Attribute to String.
Note that all Attributes are objects.

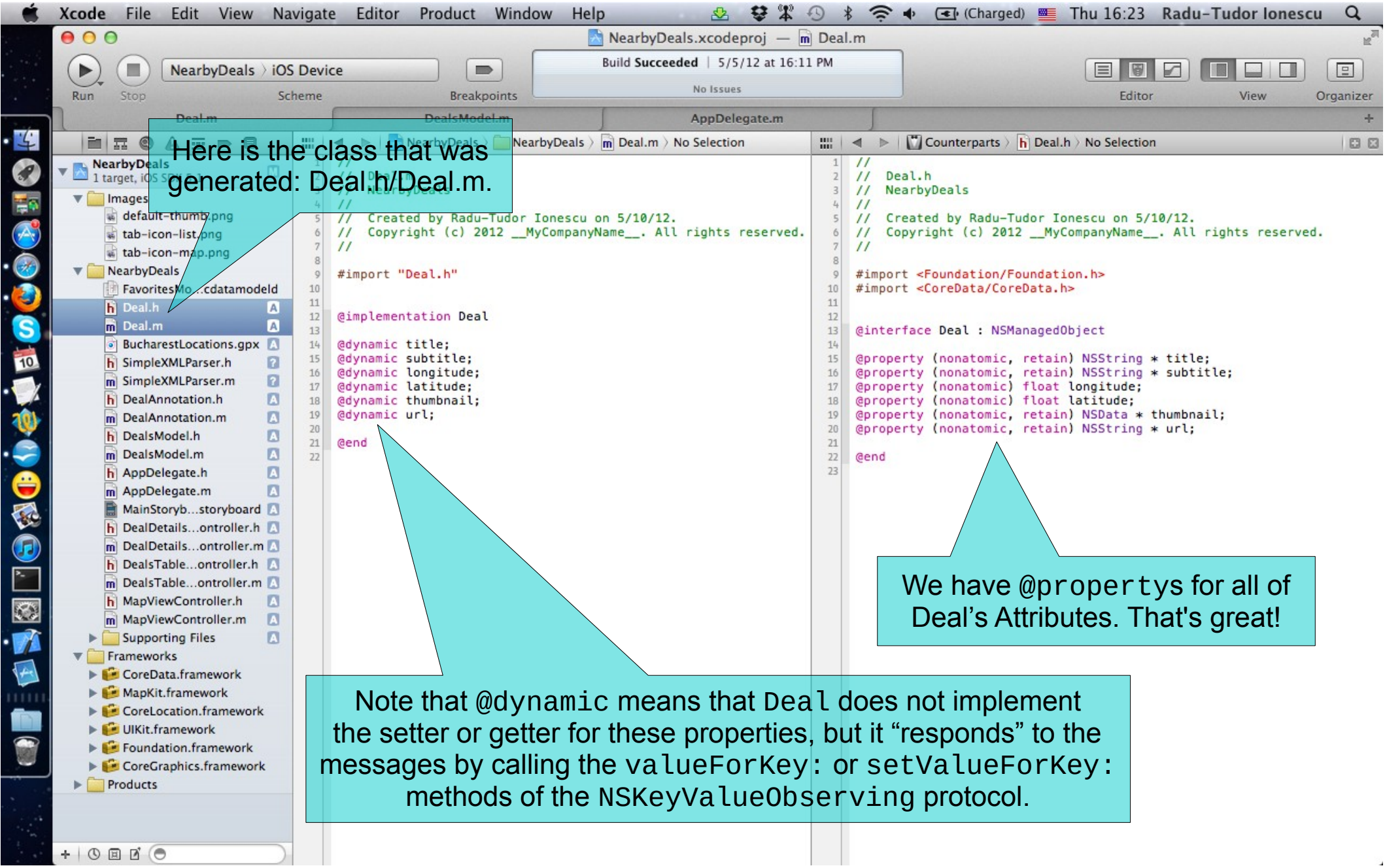

Xcode File Edit View Navigate Editor Product Window Help
Thu 15:30 Radu-Tudor Ionescu
NearbyDeals.xcodeproj — FavoritesModel.xcdatamodel
Run Stop Scheme Breakpoints
Build Succeeded | 5/5/12 at 16:11 PM
No Issues
Editor View Organizer
Untitled 2 DealsModel.m AppDelegate.m
NearbyDeals
1 target, iOS SDK 5.1
Images
default-thumb.png
tab-icon-list.png
tab-icon-map.png
NearbyDeals
FavoritesMo...cdatamodeld
BucharestLocations.gpx
SimpleXMLParser.h
SimpleXMLParser.m
DealAnnotation.m
DealsModel.m
AppDelegate.m
MainStoryb...storyboard
DealDetails...ontroller.h
DealDetails...ontroller.m
DealsTable...ontroller.h
DealsTable...ontroller.m
MapViewController.h
MapViewController.m
Supporting Files
Frameworks
CoreData.framework
MapKit.framework
CoreLocation.framework
UIKit.framework
Foundation.framework
CoreGraphics.framework
Products
ENTITIES
Deal
FETCH REQUESTS
CONFIGURATIONS
Default
NearbyDeals NearbyDeals FavoritesModel.xcdatamodeld FavoritesModel.xcdatamodel Deal
Attributes
Attribute Type
latitude Float
longitude Float
subtitle String
thumbnail Binary Data
title String
url String
Relationships
Relationship Destination Inverse
Fetched Properties
Fetched Property Predicate
No Selection
No Assistant Results
Outline Style
Add Entity
Add Attribute
Editor Style
Here are all the Attributes of a deal. Make sure you set the types properly.
Note that we are going to store the thumbnail image as NSData.



Select the Deal Entity. We are going to have Xcode generate a `NSManagedObject` subclass for it.


Xcode File Edit View Navigate Editor Product Window Help
Canvas
Add Entity
Add Fetch Request
Add Configuration
Add Attribute
Add Fetched Property
Add Relationship
Create NSManagedObject Subclass...
Add Model Version...
Import...
Go to Editor Menu and ask Xcode to generate a NSManagedObject subclass for our Deal Entity.
NearbyDeals
Images
NearbyDeals
Frameworks
Products
Relationships
Fetched Properties
No Assistant Results
Outline Style
Add Entity
Add Attribute
Editor Style


Pick where you want your new classes to be stored (default is often one directory level higher, so watch out).
Then click Create.
This option will make your @propertys be scalars (e.g. float instead of NSNumber *) where possible. Let's check it to have floats for latitude and longitude.
Use scalar properties for primitive data types
Group
Targets
NearbyDeals
Cancel
Create
Shared Folder
No Assistant Results


Here is the class that was generated: Deal.h/Deal.m.
Note that @dynamic means that Deal does not implement the setter or getter for these properties, but it “responds” to the messages by calling the valueForKey: or setValueForKey: methods of the NSKeyValueObserving protocol.
We have @propertys for all of Deal’s Attributes. That's great!

Task 2

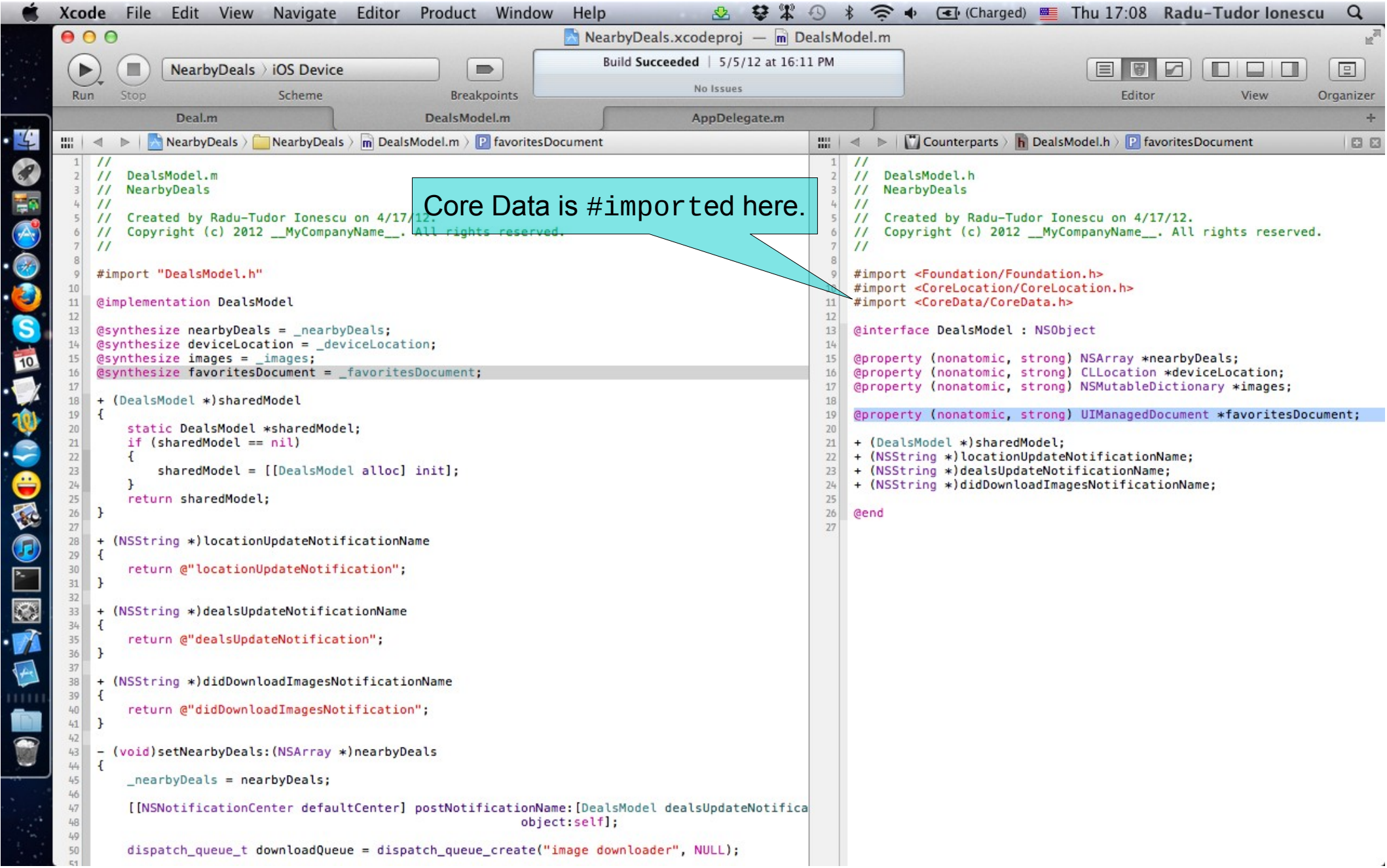
Task: Add API to the DealsModel class to make it easy to add, query and remove favorite deals.

1. Switch to the DealsModel.m tab in Xcode.
2. We use classes from the Core Data framework for this task. Let's `#import` the framework in our DealsModel.h file.
3. We need a `UIManagedDocument` to hold our Favorite Deals Model. It will be a `strong` `@property` of the DealsModel.

Add this property to the header file and name it `favoritesDocument`.

4. Use `@synthesize` to generate the accessor methods. Rename the instance variable by prefixing it with underscore as usual.

Look over the next screenshot for help.


Xcode File Edit View Navigate Editor Product Window Help
(Charged) Thu 17:08 Radu-Tudor Ionescu
NearbyDeals.xcodeproj — DealsModel.m
Run Stop NearbyDeals › iOS Device Scheme Breakpoints
Build Succeeded | 5/5/12 at 16:11 PM
No Issues
Editor View Organizer
Deal.m DealsModel.m AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › favoritesDocument
Counterparts › DealsModel.h › favoritesDocument
Core Data is #imported here.
//
// DealsModel.m
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserved.
//
#import "DealsModel.h"
@implementation DealsModel
@synthesize nearbyDeals = _nearbyDeals;
@synthesize deviceLocation = _deviceLocation;
@synthesize images = _images;
@synthesize favoritesDocument = _favoritesDocument;
+ (DealsModel *)sharedModel
{
static DealsModel *sharedModel;
if (sharedModel == nil)
{
sharedModel = [[DealsModel alloc] init];
}
return sharedModel;
}
+ (NSString *)locationUpdateNotificationName
{
return @"locationUpdateNotification";
}
+ (NSString *)dealsUpdateNotificationName
{
return @"dealsUpdateNotification";
}
+ (NSString *)didDownloadImagesNotificationName
{
return @"didDownloadImagesNotification";
}
- (void)setNearbyDeals:(NSArray *)nearbyDeals
{
_nearbyDeals = nearbyDeals;
[[NSNotificationCenter defaultCenter] postNotificationName:[DealsModel dealsUpdateNotifica
object:self];
dispatch_queue_t downloadQueue = dispatch_queue_create("image downloader", NULL);
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserved.
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesDocument;
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
+ (NSString *)didDownloadImagesNotificationName;
@end

Task 2

Task: Add API to the DealsModel class to make it easy to add, query and remove favorite deals.

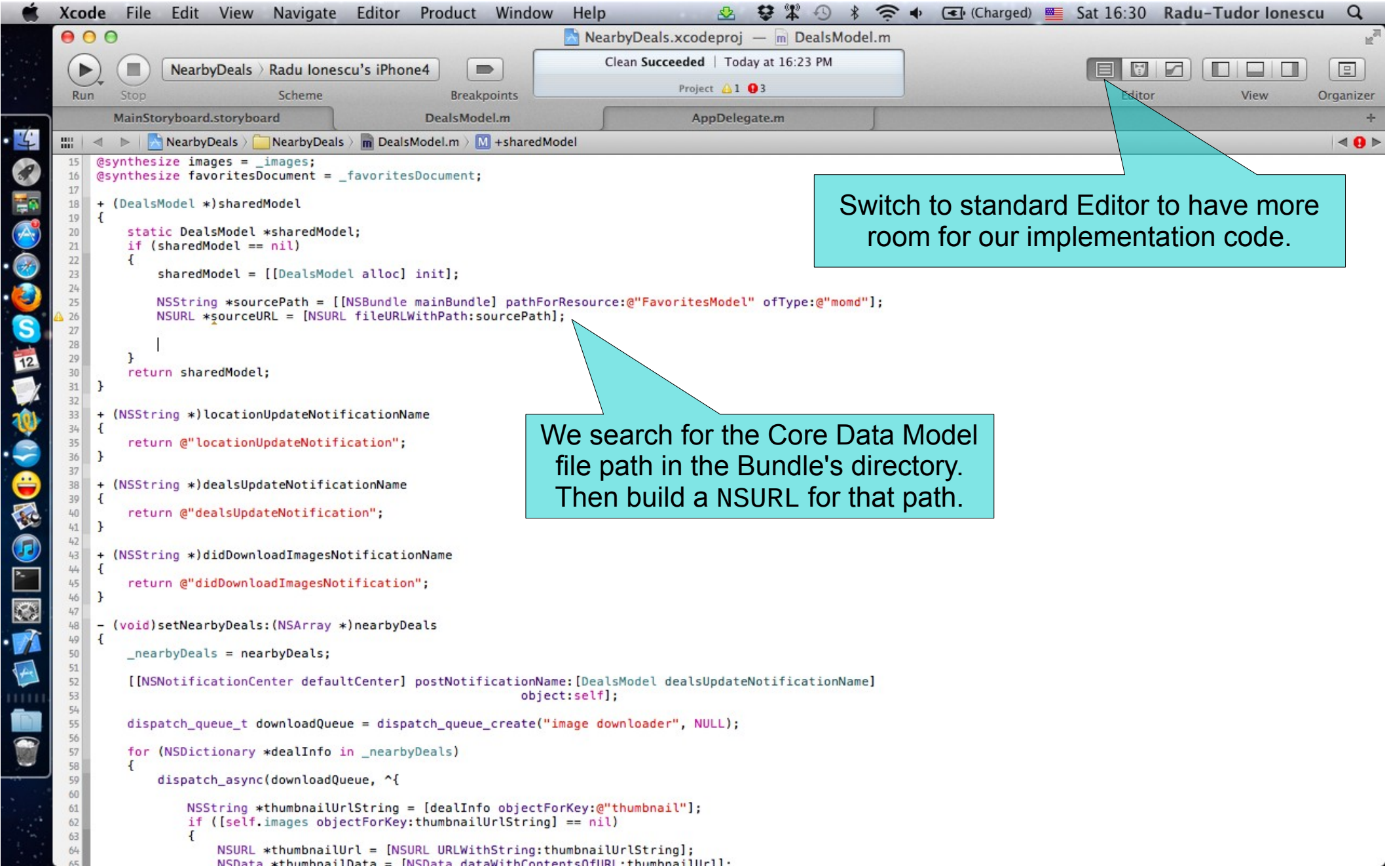
5. As soon as the `sharedModel` is initialized we should load the Core Data Model from the File System.

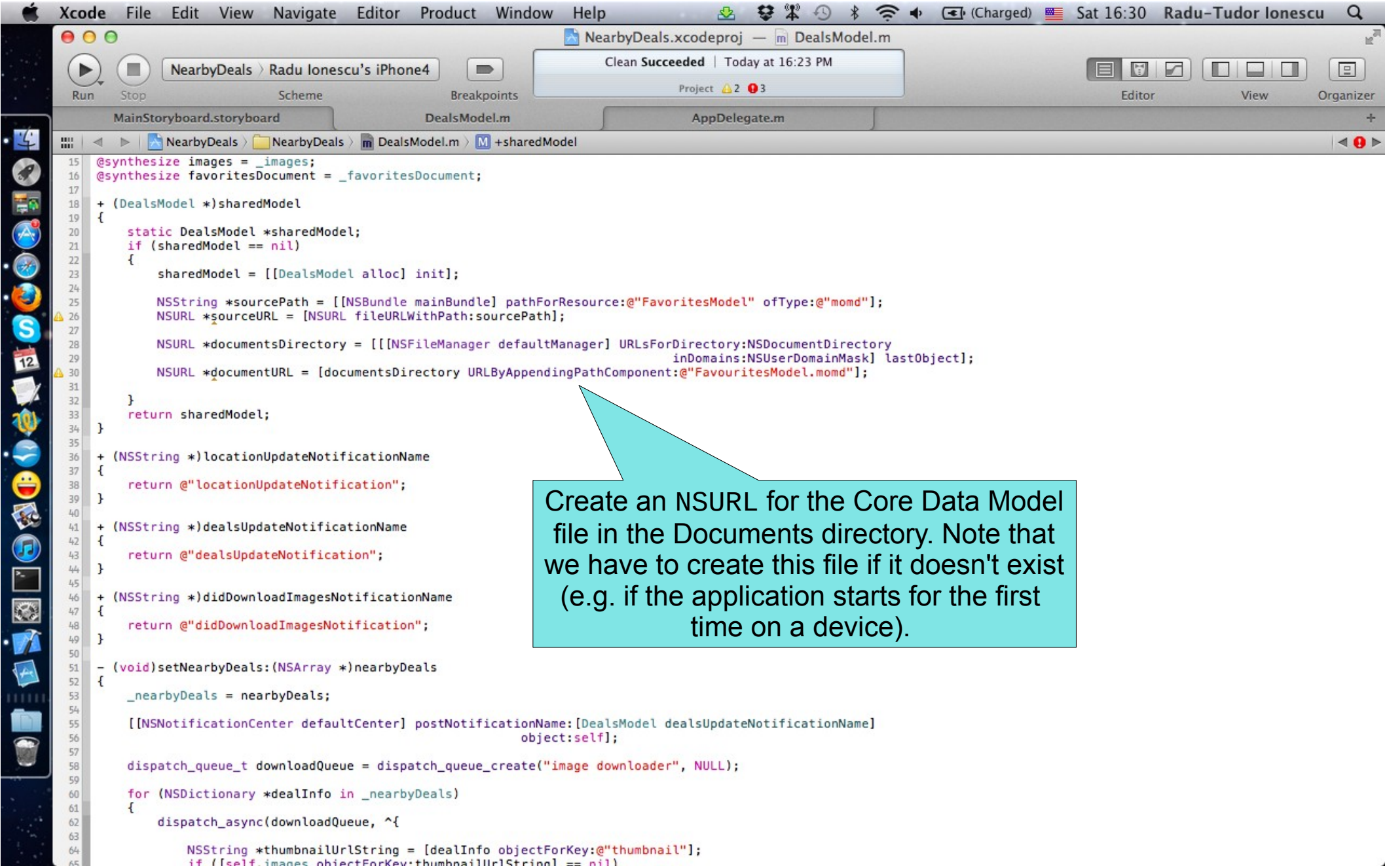
Note that the FavoritesModel.xcdatamodeld file (that contains the Core Data model) is copied in the Bundle directory when the application is installed on a device. To make it writable (i.e. add or remove deals from it) we must copy it to the Documents directory when the application starts for the first time.

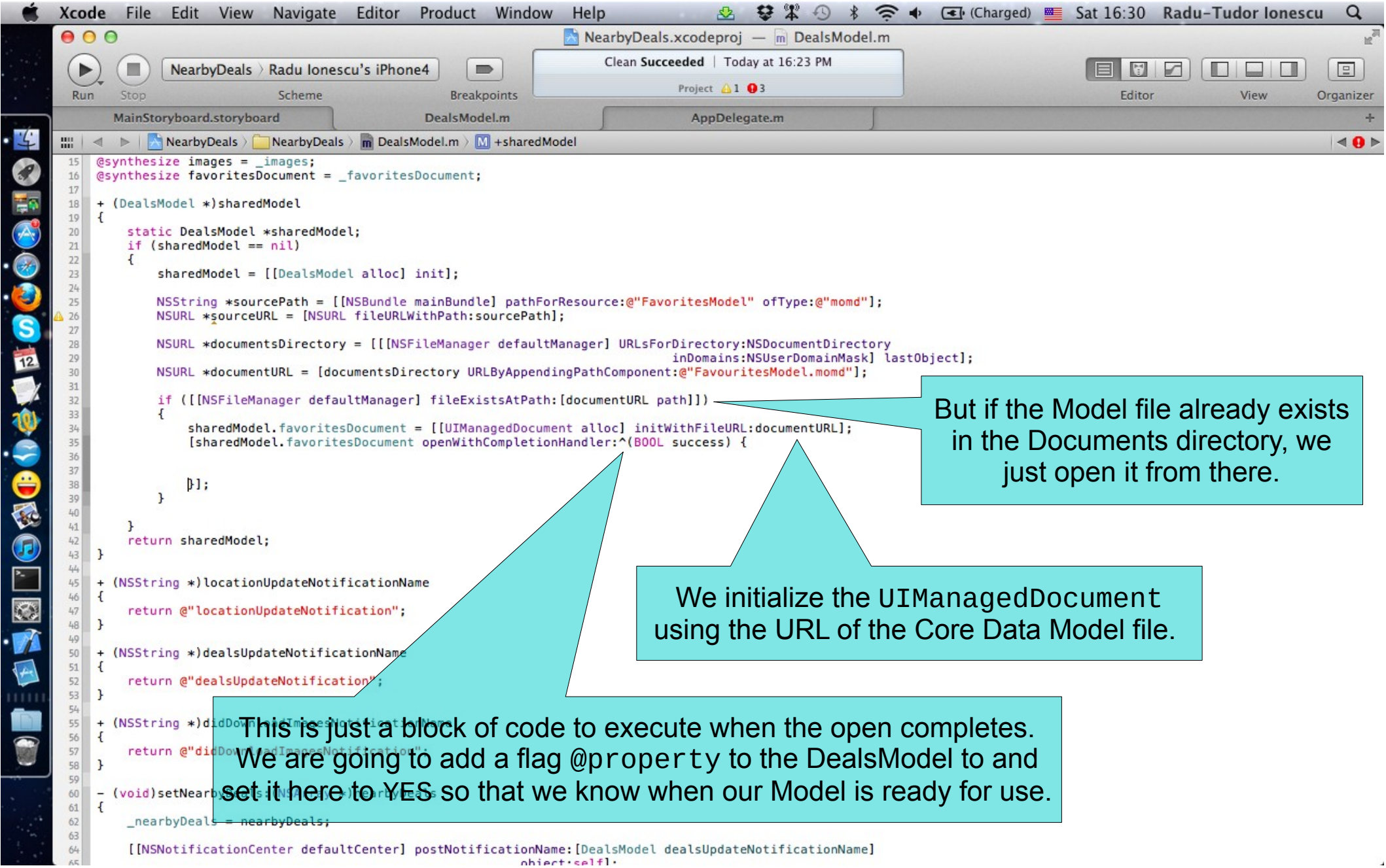
We store the favorite deals in that copy of the Core Data Model file.

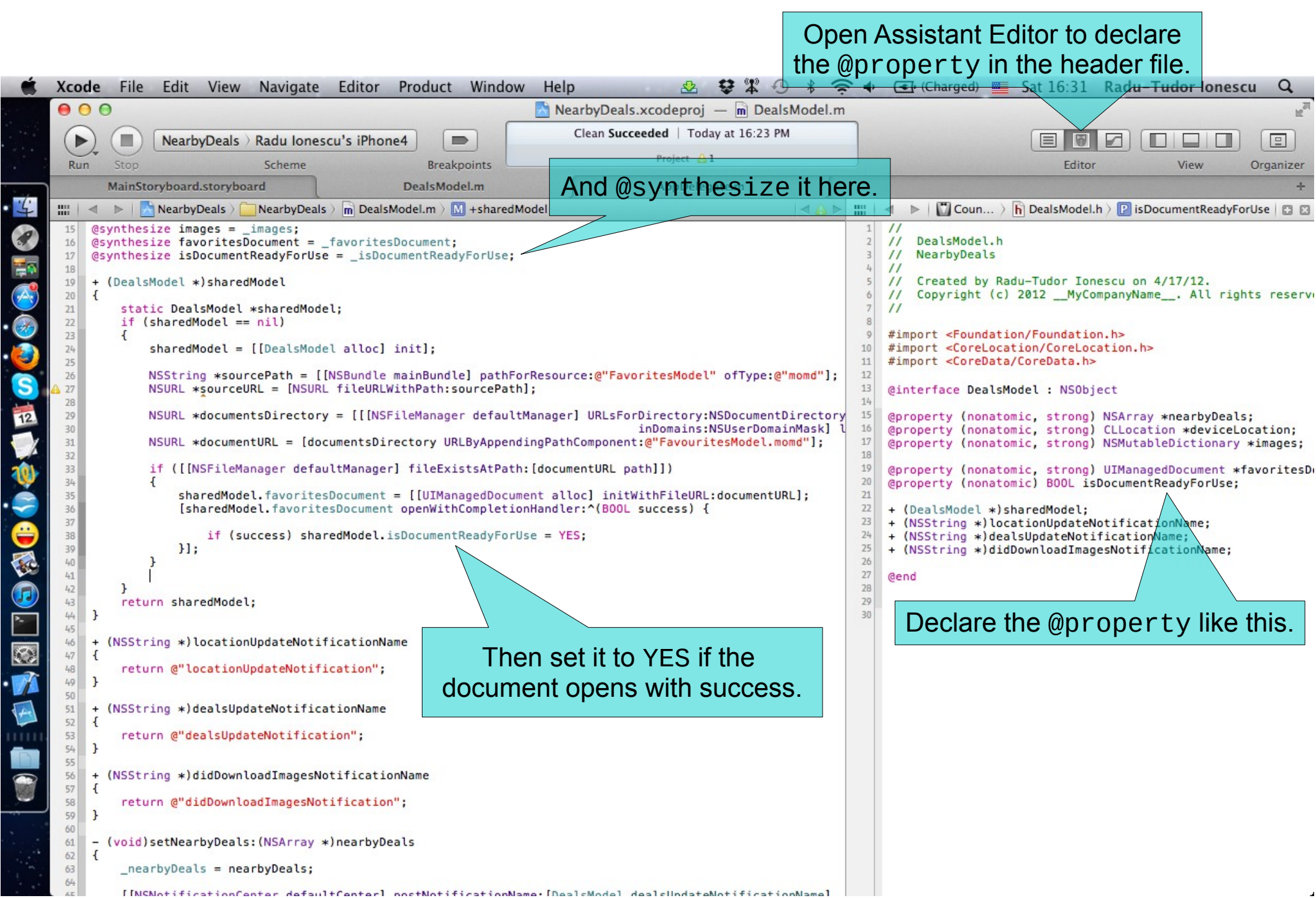
Also note that Xcode compiles the model file to remove the extraneous information and make runtime loading of the resource as efficient as possible. An `xcdatamodeld` "source" directory is compiled into a `momd` deployment directory.

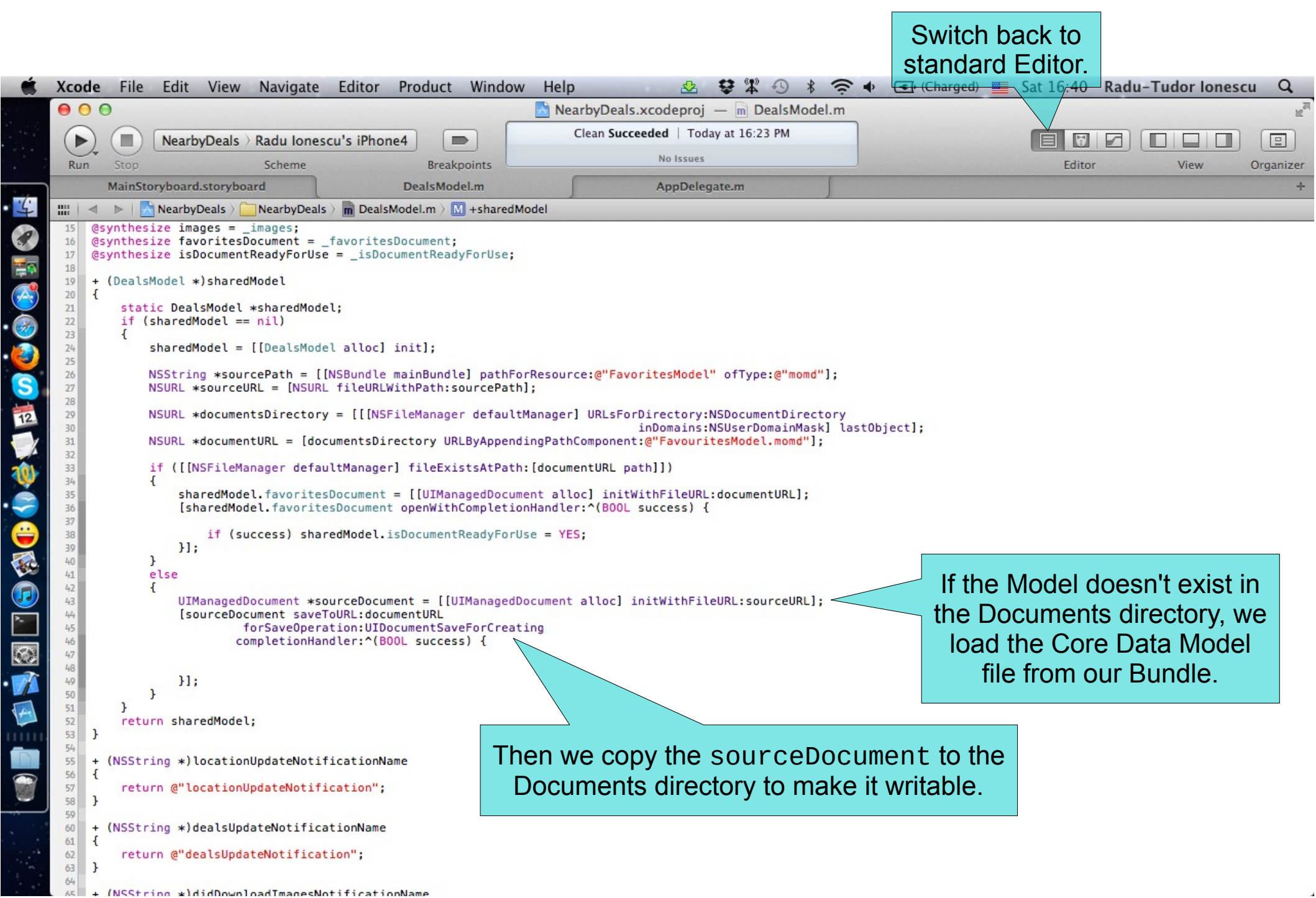
Thus we have to load FavoritesModel.momd from the File System in the `UIManagedDocument`. Follow the steps from the next slides.

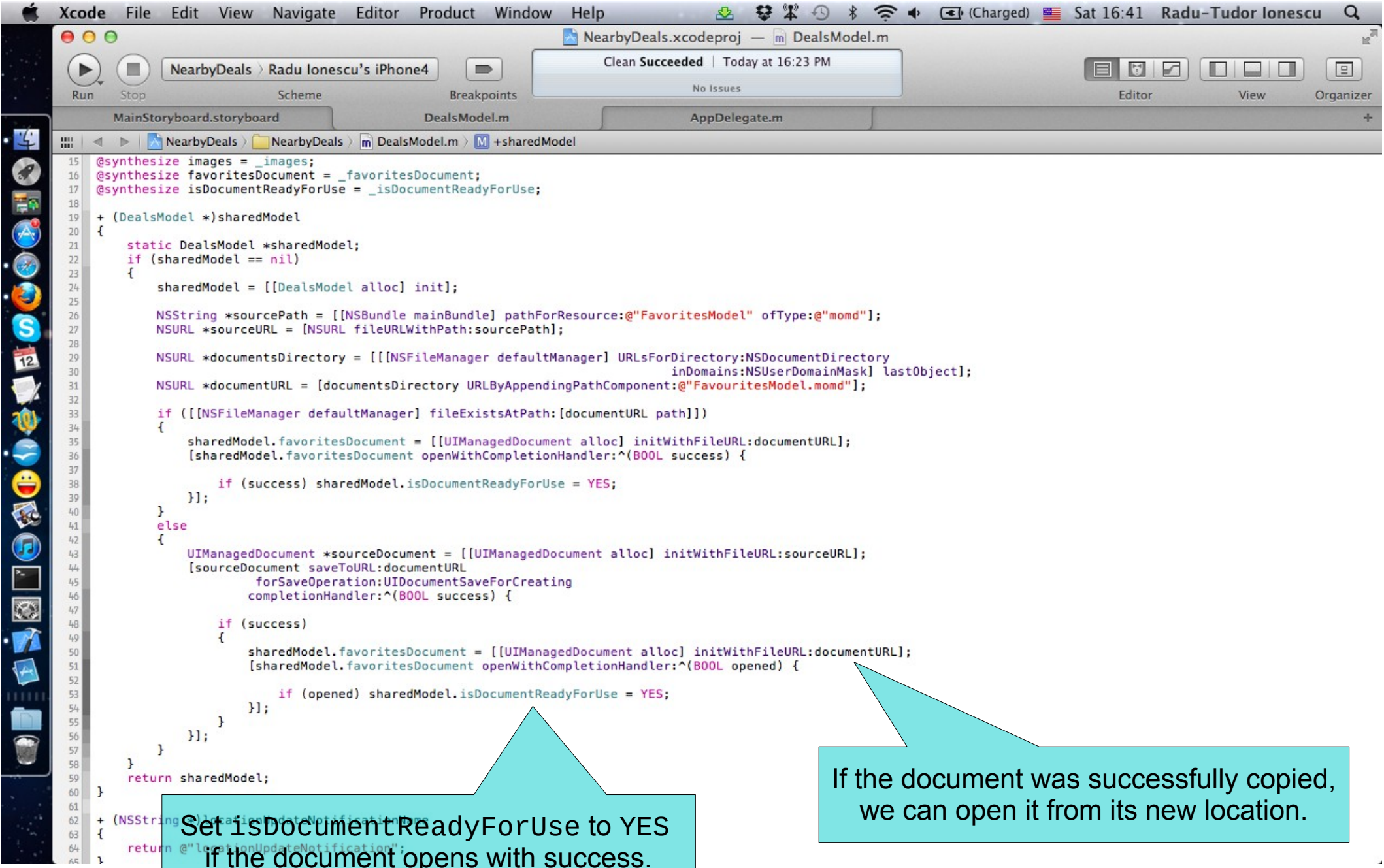

Switch to standard Editor to have more room for our implementation code.
We search for the Core Data Model file path in the Bundle's directory. Then build a NSURL for that path.


Xcode File Edit View Navigate Editor Product Window Help (Charged) Sat 16:30 Radu-Tudor Ionescu
NearbyDeals.xcodeproj — DealsModel.m
Run Stop NearbyDeals › Radu Ionescu's iPhone4 Scheme Breakpoints
Clean Succeeded | Today at 16:23 PM
Project 2 3
Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › +sharedModel
@synthesize images = _images;
@synthesize favoritesDocument = _favoritesDocument;
+ (DealsModel *)sharedModel
{
static DealsModel *sharedModel;
if (sharedModel == nil)
{
sharedModel = [[DealsModel alloc] init];
NSString *sourcePath = [[NSBundle mainBundle] pathForResource:@"FavoritesModel" ofType:@"momd"];
NSURL *sourceURL = [NSURL fileURLWithPath:sourcePath];
NSURL *documentsDirectory = [[[NSFileManager defaultManager] URLsForDirectory:NSDocumentDirectory
inDomains:NSUserDomainMask] lastObject];
NSURL *documentURL = [documentsDirectory URLByAppendingPathComponent:@"FavouritesModel.momd"];
}
return sharedModel;
}
+ (NSString *)locationUpdateNotificationName
{
return @"locationUpdateNotification";
}
+ (NSString *)dealsUpdateNotificationName
{
return @"dealsUpdateNotification";
}
+ (NSString *)didDownloadImagesNotificationName
{
return @"didDownloadImagesNotification";
}
- (void)setNearbyDeals:(NSArray *)nearbyDeals
{
_nearbyDeals = nearbyDeals;
[[NSNotificationCenter defaultCenter] postNotificationName:[DealsModel dealsUpdateNotificationName]
object:self];
dispatch_queue_t downloadQueue = dispatch_queue_create("image downloader", NULL);
for (NSDictionary *dealInfo in _nearbyDeals)
{
dispatch_async(downloadQueue, ^{
NSString *thumbnailUrlString = [dealInfo objectForKey:@"thumbnail"];
Create an NSURL for the Core Data Model file in the Documents directory. Note that we have to create this file if it doesn't exist (e.g. if the application starts for the first time on a device).


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — DealsModel.m
Clean Succeeded | Today at 16:23 PM
NearbyDeals › Radu Ionescu's iPhone4
Run Stop Scheme Breakpoints Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › +sharedModel
@synthesize images = _images;
@synthesize favoritesDocument = _favoritesDocument;
+ (DealsModel *)sharedModel
{
static DealsModel *sharedModel;
if (sharedModel == nil)
{
sharedModel = [[DealsModel alloc] init];
NSString *sourcePath = [[NSBundle mainBundle] pathForResource:@"FavoritesModel" ofType:@"momd"];
NSURL *sourceURL = [NSURL fileURLWithPath:sourcePath];
NSURL *documentsDirectory = [[[NSFileManager defaultManager] URLsForDirectory:NSDocumentDirectory
inDomains:NSUserDomainMask] lastObject];
NSURL *documentURL = [documentsDirectory URLByAppendingPathComponent:@"FavouritesModel.momd"];
if ([[NSFileManager defaultManager] fileExistsAtPath:[documentURL path]])
{
sharedModel.favoritesDocument = [[UIManagedDocument alloc] initWithFileURL:documentURL];
[sharedModel.favoritesDocument openWithCompletionHandler:^(BOOL success) {
}];
}
}
return sharedModel;
}
+ (NSString *)locationUpdateNotificationName
{
return @"locationUpdateNotification";
}
+ (NSString *)dealsUpdateNotificationName
{
return @"dealsUpdateNotification";
}
_nearbyDeals = nearbyDeals;
[[NSNotificationCenter defaultCenter] postNotificationName:[DealsModel dealsUpdateNotificationName]
But if the Model file already exists in the Documents directory, we just open it from there.
We initialize the UIManagedDocument using the URL of the Core Data Model file.
This is just a block of code to execute when the open completes. We are going to add a flag @property to the DealsModel to and set it here to YES so that we know when our Model is ready for use.


Open Assistant Editor to declare the @property in the header file.
And @synthesize it here.
Then set it to YES if the document opens with success.
Declare the @property like this.
NearbyDeals.xcodeproj — DealsModel.m
Clean Succeeded | Today at 16:23 PM
NearbyDeals › Radu Ionescu's iPhone4
Run
Stop
Scheme
Breakpoints
Editor
View
Organizer
MainStoryboard.storyboard
DealsModel.m
DealsModel.h
isDocumentReadyForUse
@synthesize images = _images;
@synthesize favoritesDocument = _favoritesDocument;
@synthesize isDocumentReadyForUse = _isDocumentReadyForUse;
+ (DealsModel *)sharedModel
{
static DealsModel *sharedModel;
if (sharedModel == nil)
{
sharedModel = [[DealsModel alloc] init];
NSString *sourcePath = [[NSBundle mainBundle] pathForResource:@"FavoritesModel" ofType:@"momd"];
NSURL *sourceURL = [NSURL fileURLWithPath:sourcePath];
NSURL *documentsDirectory = [[[NSFileManager defaultManager] URLsForDirectory:NSDocumentDirectory
inDomains:NSUserDomainMask] l
NSURL *documentURL = [documentsDirectory URLByAppendingPathComponent:@"FavouritesModel.momd"];
if ([[NSFileManager defaultManager] fileExistsAtPath:[documentURL path]])
{
sharedModel.favoritesDocument = [[UIManagedDocument alloc] initWithFileURL:documentURL];
[sharedModel.favoritesDocument openWithCompletionHandler:^(BOOL success) {
if (success) sharedModel.isDocumentReadyForUse = YES;
}];
}
}
return sharedModel;
}
+ (NSString *)locationUpdateNotificationName
{
return @"locationUpdateNotification";
}
+ (NSString *)dealsUpdateNotificationName
{
return @"dealsUpdateNotification";
}
+ (NSString *)didDownloadImagesNotificationName
{
return @"didDownloadImagesNotification";
}
- (void)setNearbyDeals:(NSArray *)nearbyDeals
{
_nearbyDeals = nearbyDeals;
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserv
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesD
@property (nonatomic) BOOL isDocumentReadyForUse;
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
+ (NSString *)didDownloadImagesNotificationName;
@end


Switch back to standard Editor.
Xcode File Edit View Navigate Editor Product Window Help
Radu-Tudor Ionescu
NearbyDeals.xcodeproj — DealsModel.m
Run Stop NearbyDeals › Radu Ionescu's iPhone4 Scheme Breakpoints
Clean Succeeded | Today at 16:23 PM
No Issues
Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › +sharedModel
@synthesize images = _images;
@synthesize favoritesDocument = _favoritesDocument;
@synthesize isDocumentReadyForUse = _isDocumentReadyForUse;
+ (DealsModel *)sharedModel
{
static DealsModel *sharedModel;
if (sharedModel == nil)
{
sharedModel = [[DealsModel alloc] init];
NSString *sourcePath = [[NSBundle mainBundle] pathForResource:@"FavoritesModel" ofType:@"momd"];
NSURL *sourceURL = [NSURL fileURLWithPath:sourcePath];
NSURL *documentsDirectory = [[[NSFileManager defaultManager] URLsForDirectory:NSDocumentDirectory
inDomains:NSUserDomainMask] lastObject];
NSURL *documentURL = [documentsDirectory URLByAppendingPathComponent:@"FavouritesModel.momd"];
if ([[NSFileManager defaultManager] fileExistsAtPath:[documentURL path]])
{
sharedModel.favoritesDocument = [[UIManagedDocument alloc] initWithFileURL:documentURL];
[sharedModel.favoritesDocument openWithCompletionHandler:^(BOOL success) {
if (success) sharedModel.isDocumentReadyForUse = YES;
}];
}
else
{
UIManagedDocument *sourceDocument = [[UIManagedDocument alloc] initWithFileURL:sourceURL];
[sourceDocument saveToURL:documentURL
forSaveOperation:UIDocumentSaveForCreating
completionHandler:^(BOOL success) {
}];
}
}
return sharedModel;
}
+ (NSString *)locationUpdateNotificationName
{
return @"locationUpdateNotification";
}
+ (NSString *)dealsUpdateNotificationName
{
return @"dealsUpdateNotification";
}
If the Model doesn't exist in the Documents directory, we load the Core Data Model file from our Bundle.
Then we copy the sourceDocument to the Documents directory to make it writable.


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — DealsModel.m
Run Stop NearbyDeals › Radu Ionescu's iPhone4 Scheme Breakpoints
Clean Succeeded | Today at 16:23 PM
No Issues
Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › +sharedModel
@synthesize images = _images;
@synthesize favoritesDocument = _favoritesDocument;
@synthesize isDocumentReadyForUse = _isDocumentReadyForUse;
+ (DealsModel *)sharedModel
{
static DealsModel *sharedModel;
if (sharedModel == nil)
{
sharedModel = [[DealsModel alloc] init];
NSString *sourcePath = [[NSBundle mainBundle] pathForResource:@"FavoritesModel" ofType:@"momd"];
NSURL *sourceURL = [NSURL fileURLWithPath:sourcePath];
NSURL *documentsDirectory = [[[NSFileManager defaultManager] URLsForDirectory:NSDocumentDirectory
inDomains:NSUserDomainMask] lastObject];
NSURL *documentURL = [documentsDirectory URLByAppendingPathComponent:@"FavouritesModel.momd"];
if ([[NSFileManager defaultManager] fileExistsAtPath:[documentURL path]])
{
sharedModel.favoritesDocument = [[UIManagedDocument alloc] initWithFileURL:documentURL];
[sharedModel.favoritesDocument openWithCompletionHandler:^(BOOL success) {
if (success) sharedModel.isDocumentReadyForUse = YES;
}];
}
else
{
UIManagedDocument *sourceDocument = [[UIManagedDocument alloc] initWithFileURL:sourceURL];
[sourceDocument saveToURL:documentURL
forSaveOperation:UIDocumentSaveForCreating
completionHandler:^(BOOL success) {
if (success)
{
sharedModel.favoritesDocument = [[UIManagedDocument alloc] initWithFileURL:documentURL];
[sharedModel.favoritesDocument openWithCompletionHandler:^(BOOL opened) {
if (opened) sharedModel.isDocumentReadyForUse = YES;
}];
}
}];
}
}
return sharedModel;
}
+ (NSString *)locationUpdateNotificationName
{
return @"locationUpdateNotification";
}
Set isDocumentReadyForUse to YES if the document opens with success.
If the document was successfully copied, we can open it from its new location.

Task 2

Task: Add API to the DealsModel class to make it easy to add, query and remove favorite deals.

6. Open Assistant Editor to edit the DealsModel.h header file.

7. It's time to declare all the `@property`s and methods of the API that manipulates the Core Data Model.

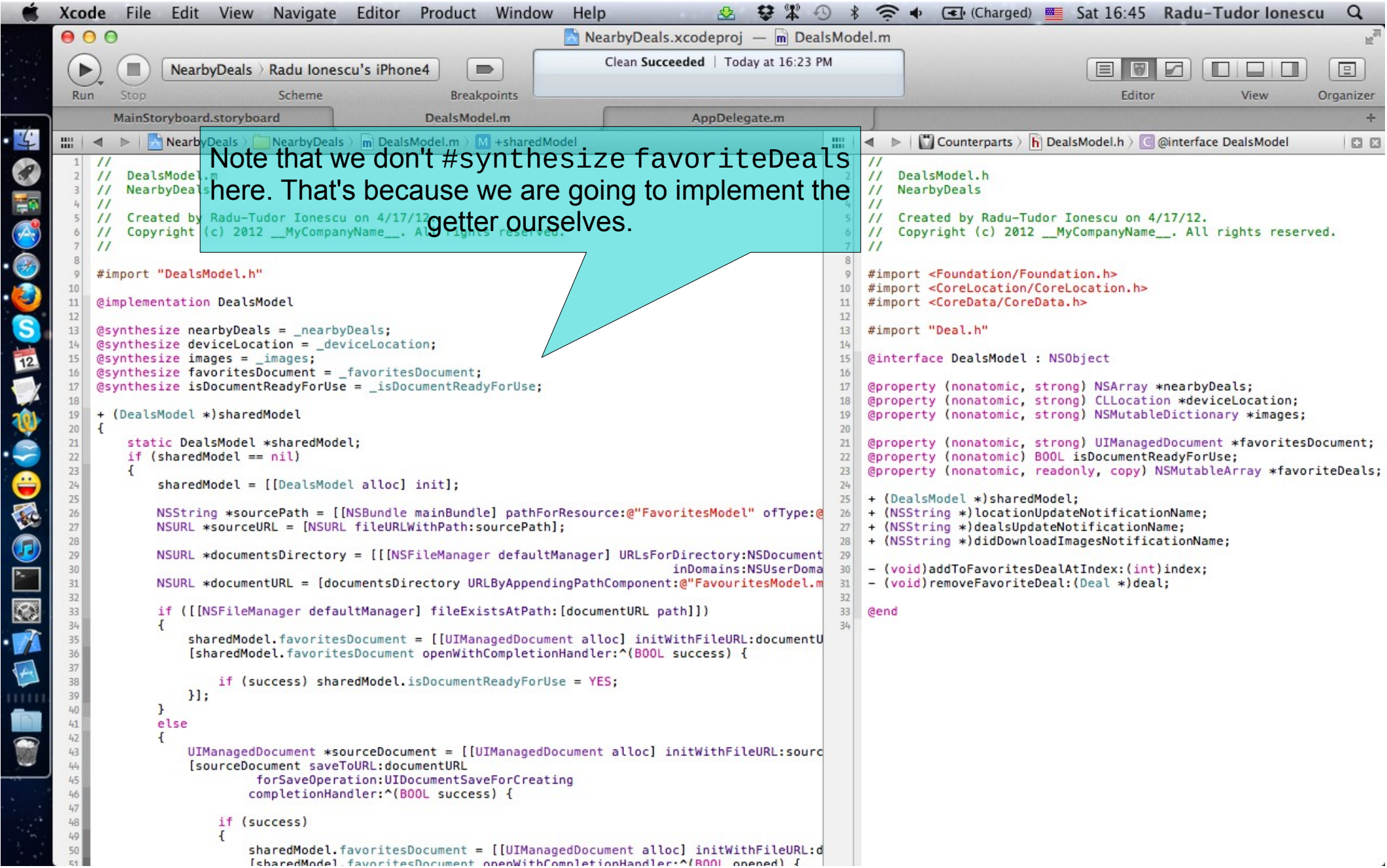
We are definitely going to use the `Deal` class (that is a subclass of `NSManagedObject`) here, so let's `#import` it in our header.

8. Add a new `readonly` `@property` that will fetch and return the `favoriteDeals` from the Core Data database.

9. Declare an instance method that will receive an `index` argument and will add the corresponding nearby deal to the FavoritesModel.

10. Declare another instance method to remove a favorite `Deal` from the Core Data Model.

Look over the next screenshot for help.


Note that we don't #synthesize favoriteDeals here. That's because we are going to implement the getter ourselves.

Task 2

Task: Add API to the DealsModel class to make it easy to add, query and remove favorite deals.

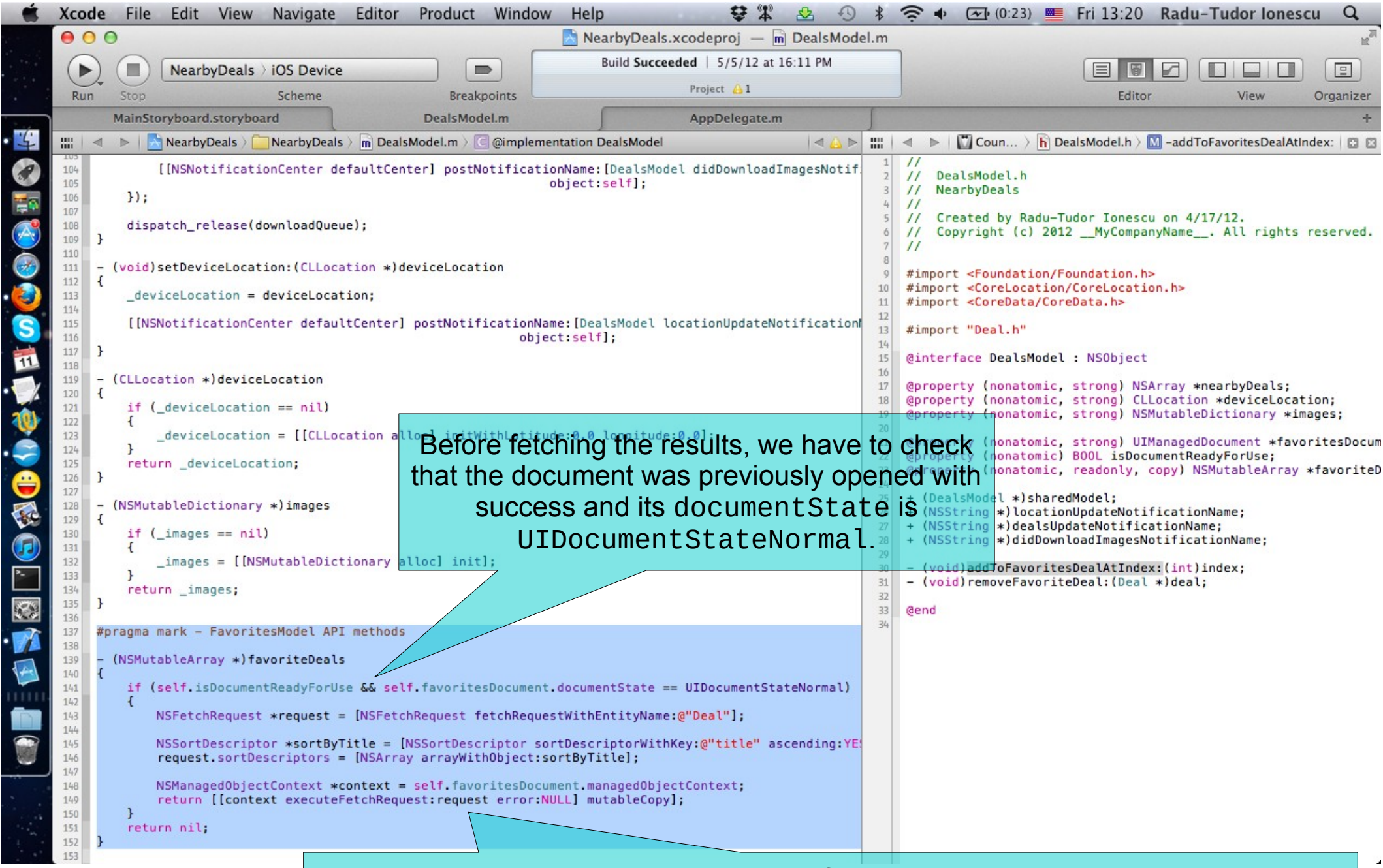
11. Let's implement the `favoriteDeals` getter in a section of code delimited by the `#pragma mark` directive. We are going to add all the API for the Core Data Model manipulation in this section of code.

Create an `NSFetchRequest` object and set its `sortDescriptors` so that it sorts by “title” ascending. To create an `NSSortDescriptor` use `sortDescriptorWithKey:ascending:` and put it in an `NSArray` with a single object.

Get the `UIManagedDocument's managedObjectContext` and send it the `executeFetchRequest:error:` message to fetch the favorite deals from the Core Data Model. It will return an `NSArray` of `Deals`.

We want the returned array to be editable, so let's `return a mutableCopy` of it.

Look over the next screenshot for hints.


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — DealsModel.m
Build Succeeded | 5/5/12 at 16:11 PM
Project 1
NearbyDeals › iOS Device
Run Stop Scheme Breakpoints
Editor View Organizer
MainStoryboard.storyboard
DealsModel.m
AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › @implementation DealsModel
Coun... › DealsModel.h › -addToFavoritesDealAtIndex:
[[NSNotificationCenter defaultCenter] postNotificationName:[DealsModel didDownloadImagesNotif
object:self];
});
dispatch_release(downloadQueue);
}
- (void)setDeviceLocation:(CLLocation *)deviceLocation
{
_deviceLocation = deviceLocation;
[[NSNotificationCenter defaultCenter] postNotificationName:[DealsModel locationUpdateNotificationN
object:self];
}
- (CLLocation *)deviceLocation
{
if (_deviceLocation == nil)
{
_deviceLocation = [[CLLocation alloc] initWithLatitude:0.0 longitude:0.0];
}
return _deviceLocation;
}
- (NSMutableDictionary *)images
{
if (_images == nil)
{
_images = [[NSMutableDictionary alloc] init];
}
return _images;
}
#pragma mark - FavoritesModel API methods
- (NSMutableArray *)favoriteDeals
{
if (self.isDocumentReadyForUse && self.favoritesDocument.documentState == UIDocumentStateNormal)
{
NSFetchRequest *request = [NSFetchRequest fetchRequestWithEntityName:@"Deal"];
NSSortDescriptor *sortByTitle = [NSSortDescriptor sortDescriptorWithKey:@"title" ascending:YES
request.sortDescriptors = [NSArray arrayWithObject:sortByTitle];
NSManagedObjectContext *context = self.favoritesDocument.managedObjectContext;
return [[context executeFetchRequest:request error:NULL] mutableCopy];
}
return nil;
}
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserved.
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
#import "Deal.h"
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesDocum
@property (nonatomic) BOOL isDocumentReadyForUse;
@property (nonatomic, readonly, copy) NSMutableArray *favoriteD
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
+ (NSString *)didDownloadImagesNotificationName;
- (void)addToFavoritesDealAtIndex:(int)index;
- (void)removeFavoriteDeal:(Deal *)deal;
@end
Before fetching the results, we have to check that the document was previously opened with success and its documentState is UIDocumentStateNormal.
Note that we don't set the predicate of this request anywhere. It will return all the deals in this case. It's similar to an SQL statement without the WHERE clause.

Task 2

Task: Add API to the DealsModel class to make it easy to add, query and remove favorite deals.

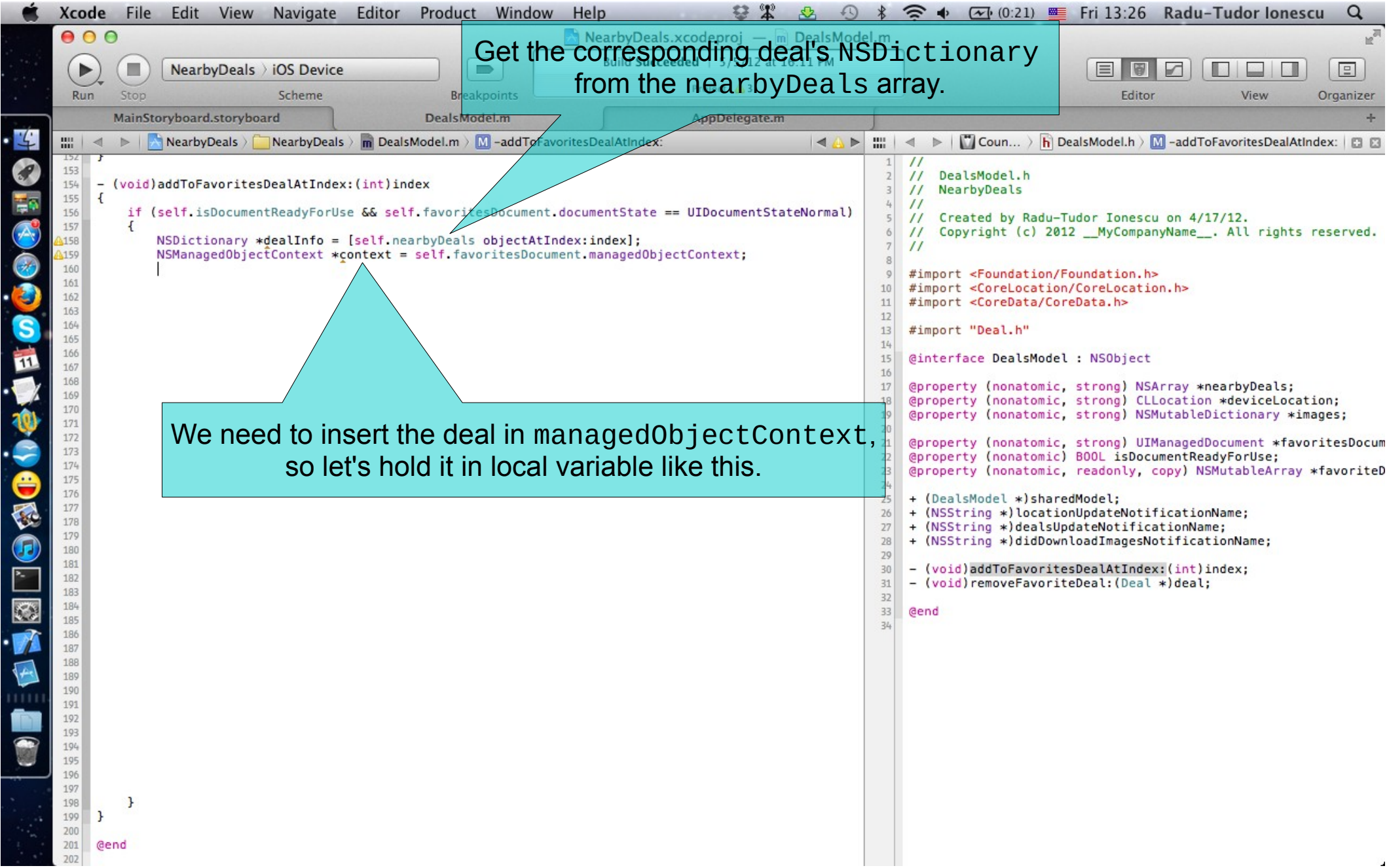
12. Now let's continue with the `addToFavoritesDealAtIndex:` implementation.

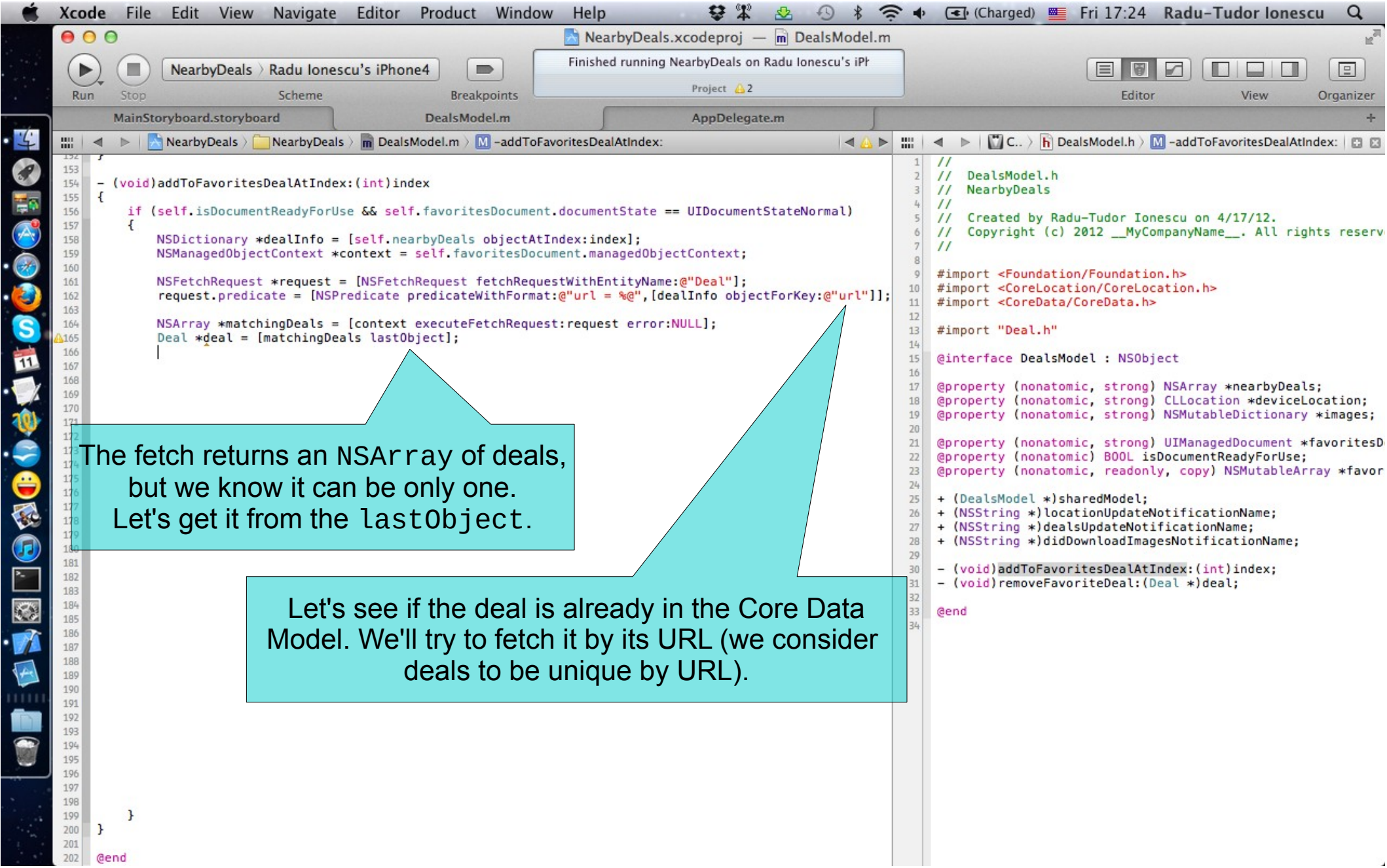
The first thing to do is to test if the document is in a state that would let us insert a new deal. Then we verify if the deal we are about to add is not already in the database (and we don't need to add it anymore).

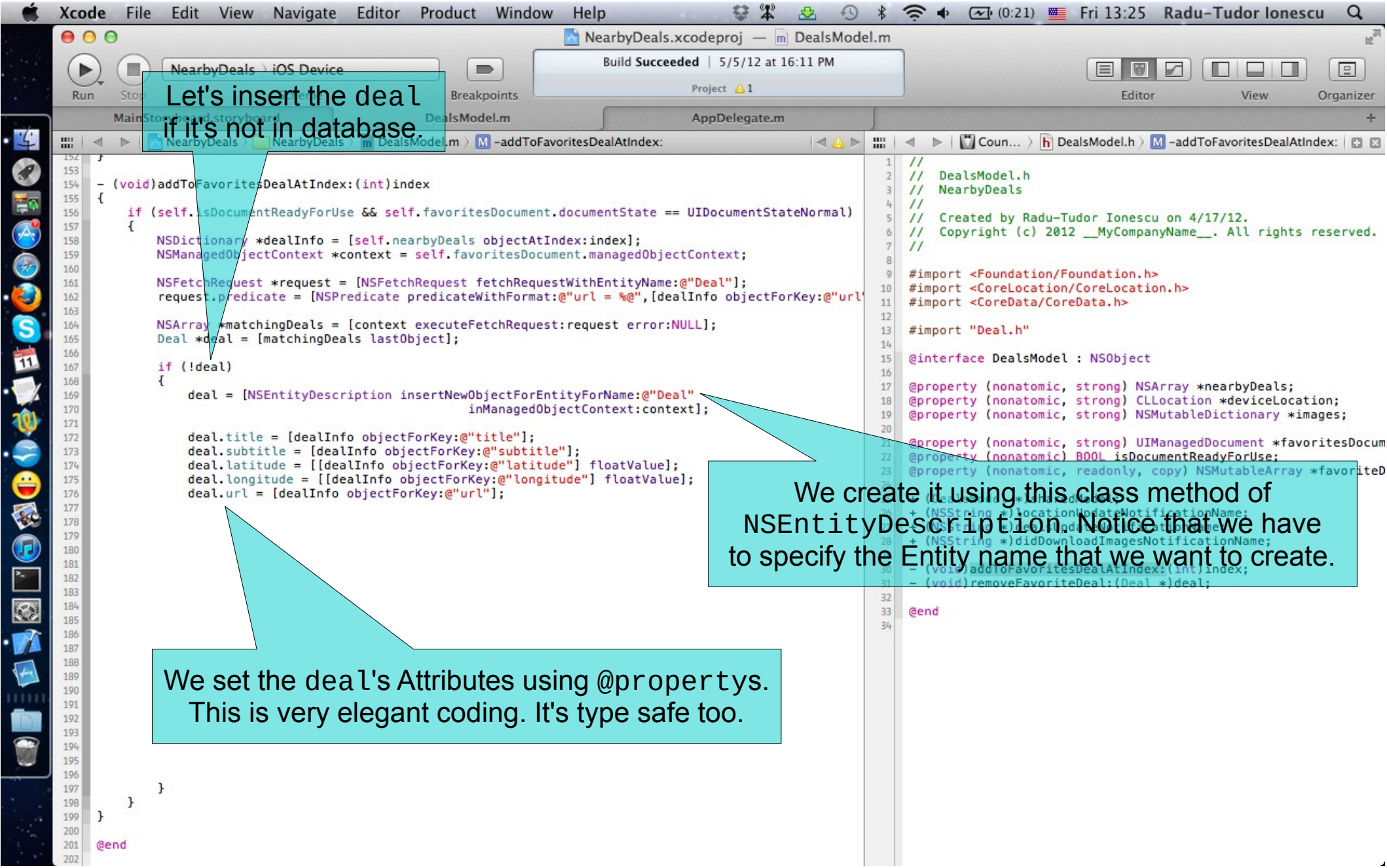
If the deal is not there, we create a new Deal object using the `insertNewObjectForEntityForName:inManagedObjectContext:` method of `NSEntityDescription` and we set its Attributes from the deal's `NSDictionary`.

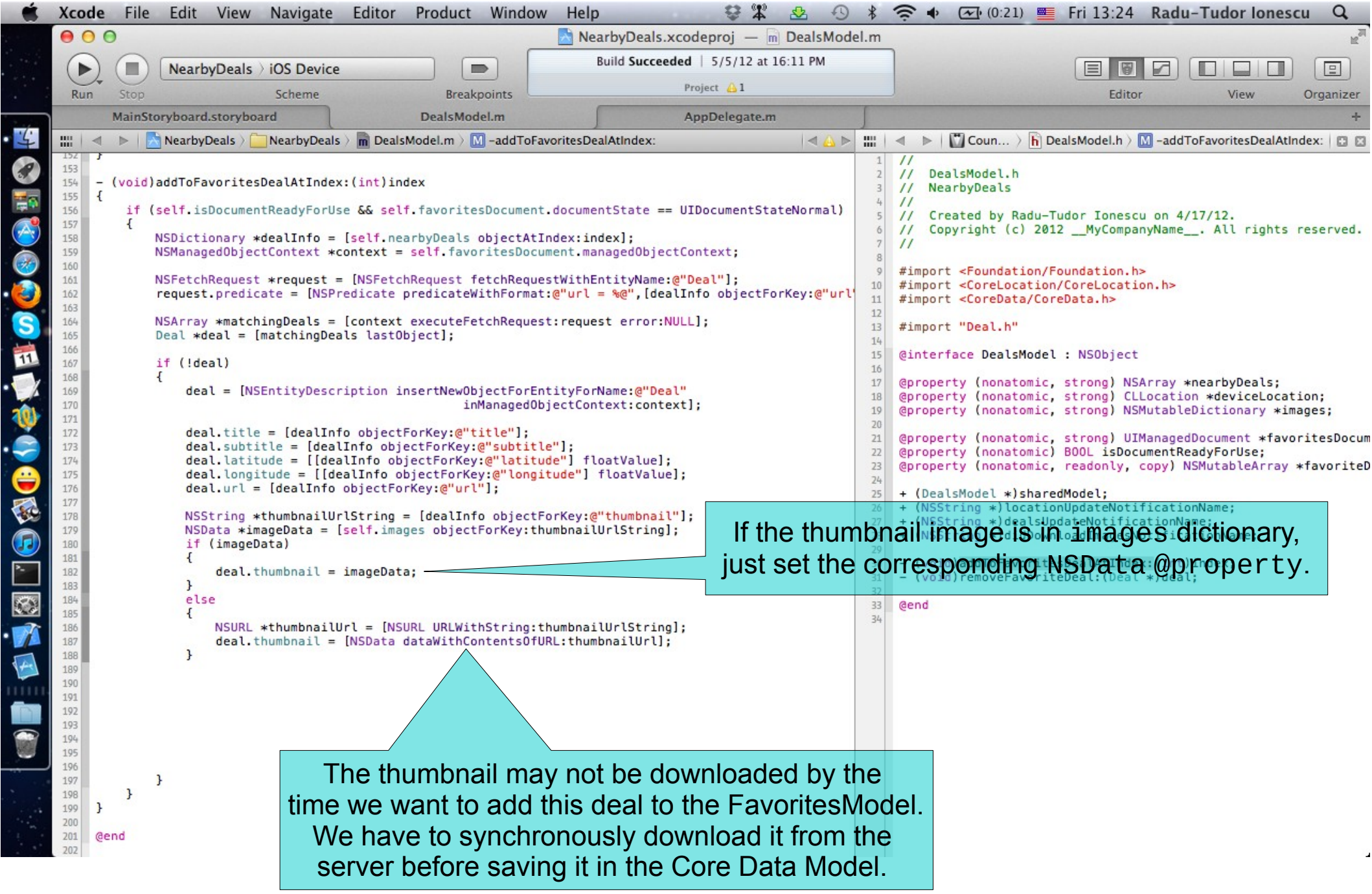
The last thing to do is to make sure that our change is replicated on the File System by saving the `favoritesDocument` in the Documents directory.

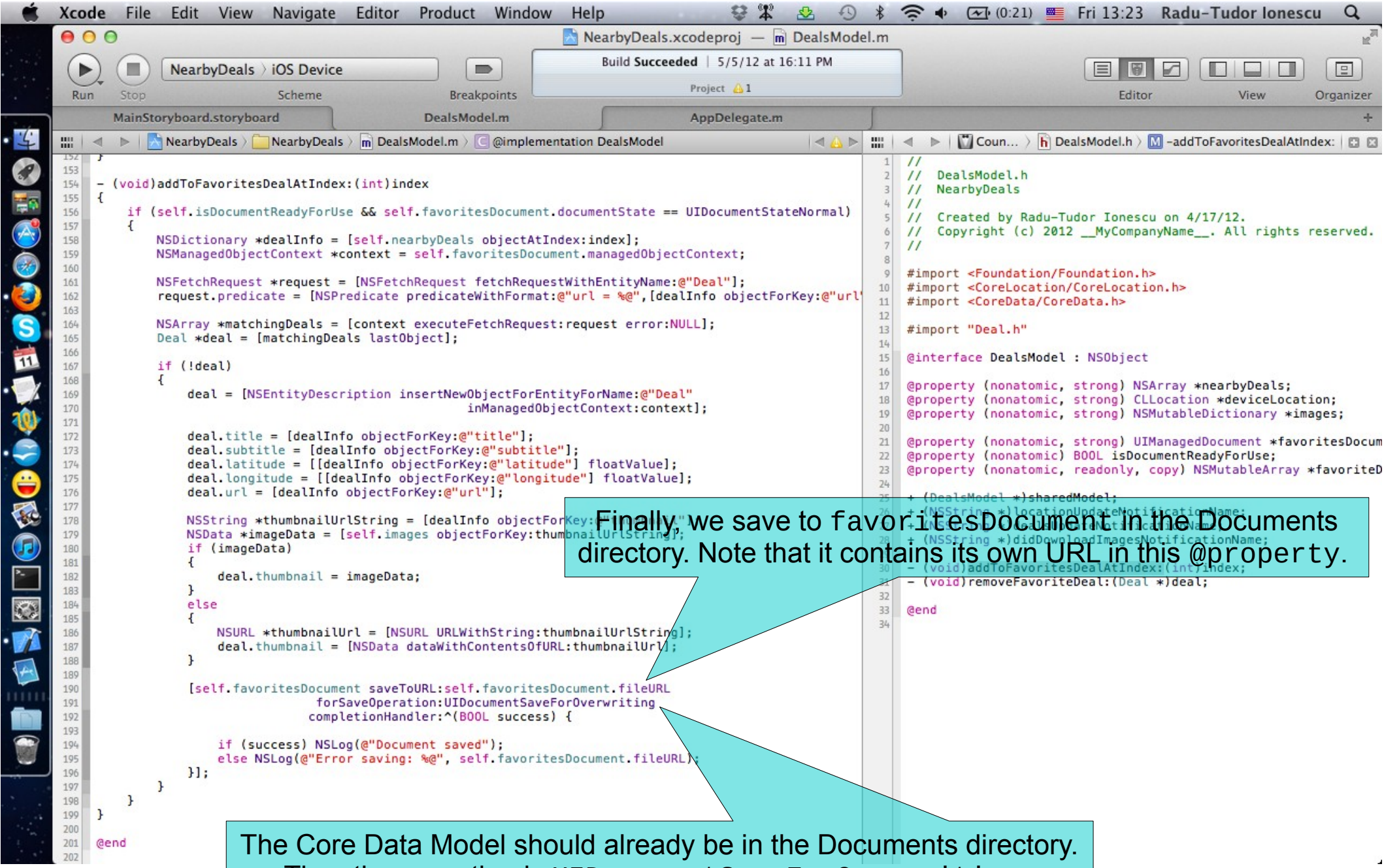
Look over the next slides for help.


Get the corresponding deal's NSDictionary from the nearbyDeals array.
We need to insert the deal in managedObjectContext, so let's hold it in local variable like this.
- (void)addToFavoritesDealAtIndex:(int)index
{
if (self.isDocumentReadyForUse && self.favoritesDocument.documentState == UIDocumentStateNormal)
{
NSDictionary *dealInfo = [self.nearbyDeals objectAtIndex:index];
NSManagedObjectContext *context = self.favoritesDocument.managedObjectContext;
}
}
@end
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserved.
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
#import "Deal.h"
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesDocum
@property (nonatomic) BOOL isDocumentReadyForUse;
@property (nonatomic, readonly, copy) NSMutableArray *favoriteD
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
+ (NSString *)didDownloadImagesNotificationName;
- (void)addToFavoritesDealAtIndex:(int)index;
- (void)removeFavoriteDeal:(Deal *)deal;
@end


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — DealsModel.m
Run Stop NearbyDeals Radu Ionescu's iPhone4 Scheme Breakpoints
Finished running NearbyDeals on Radu Ionescu's iPh
Project 2
Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals NearbyDeals DealsModel.m -addToFavoritesDealAtIndex:
- (void)addToFavoritesDealAtIndex:(int)index
{
if (self.isDocumentReadyForUse && self.favoritesDocument.documentState == UIDocumentStateNormal)
{
NSDictionary *dealInfo = [self.nearbyDeals objectAtIndex:index];
NSManagedObjectContext *context = self.favoritesDocument.managedObjectContext;
NSFetchRequest *request = [NSFetchRequest fetchRequestWithEntityName:@"Deal"];
request.predicate = [NSPredicate predicateWithFormat:@"url = %@",[dealInfo objectForKey:@"url"]];
NSArray *matchingDeals = [context executeFetchRequest:request error:NULL];
Deal *deal = [matchingDeals lastObject];
}
}
@end
C.. DealsModel.h -addToFavoritesDealAtIndex:
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserv
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
#import "Deal.h"
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesD
@property (nonatomic) BOOL isDocumentReadyForUse;
@property (nonatomic, readonly, copy) NSMutableArray *favor
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
+ (NSString *)didDownloadImagesNotificationName;
- (void)addToFavoritesDealAtIndex:(int)index;
- (void)removeFavoriteDeal:(Deal *)deal;
@end
The fetch returns an NSArray of deals, but we know it can be only one. Let's get it from the lastObject.
Let's see if the deal is already in the Core Data Model. We'll try to fetch it by its URL (we consider deals to be unique by URL).


Let's insert the deal if it's not in database.
We create it using this class method of NSEntityDescription. Notice that we have to specify the Entity name that we want to create.
We set the deal's Attributes using @propertys. This is very elegant coding. It's type safe too.


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — DealsModel.m
Build Succeeded | 5/5/12 at 16:11 PM
Project 1
Run Stop Scheme Breakpoints Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals > NearbyDeals > DealsModel.m > -addToFavoritesDealAtIndex:
DealsModel.h > -addToFavoritesDealAtIndex:
- (void)addToFavoritesDealAtIndex:(int)index
{
if (self.isDocumentReadyForUse && self.favoritesDocument.documentState == UIDocumentStateNormal)
{
NSDictionary *dealInfo = [self.nearbyDeals objectAtIndex:index];
NSManagedObjectContext *context = self.favoritesDocument.managedObjectContext;
NSFetchRequest *request = [NSFetchRequest fetchRequestWithEntityName:@"Deal"];
request.predicate = [NSPredicate predicateWithFormat:@"url = %@",[dealInfo objectForKey:@"url"
NSArray *matchingDeals = [context executeFetchRequest:request error:NULL];
Deal *deal = [matchingDeals lastObject];
if (!deal)
{
deal = [NSEntityDescription insertNewObjectForEntityForName:@"Deal"
inManagedObjectContext:context];
deal.title = [dealInfo objectForKey:@"title"];
deal.subtitle = [dealInfo objectForKey:@"subtitle"];
deal.latitude = [[dealInfo objectForKey:@"latitude"] floatValue];
deal.longitude = [[dealInfo objectForKey:@"longitude"] floatValue];
deal.url = [dealInfo objectForKey:@"url"];
NSString *thumbnailUrlString = [dealInfo objectForKey:@"thumbnail"];
NSData *imageData = [self.images objectForKey:thumbnailUrlString];
if (imageData)
{
deal.thumbnail = imageData;
}
else
{
NSURL *thumbnailUrl = [NSURL URLWithString:thumbnailUrlString];
deal.thumbnail = [NSData dataWithContentsOfURL:thumbnailUrl];
}
}
}
@end
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserved.
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
#import "Deal.h"
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesDocum
@property (nonatomic) BOOL isDocumentReadyForUse;
@property (nonatomic, readonly, copy) NSMutableArray *favoriteD
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
- (void)removeFavoriteDeal:(Deal *)deal;
@end
If the thumbnail image is in images dictionary, just set the corresponding NSData @property.
The thumbnail may not be downloaded by the time we want to add this deal to the FavoritesModel. We have to synchronously download it from the server before saving it in the Core Data Model.


Xcode File Edit View Navigate Editor Product Window Help
NearbyDeals.xcodeproj — DealsModel.m
Build Succeeded | 5/5/12 at 16:11 PM
Run Stop Scheme Breakpoints Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals > NearbyDeals > DealsModel.m > @implementation DealsModel
DealsModel.h > -addToFavoritesDealAtIndex:
- (void)addToFavoritesDealAtIndex:(int)index
{
if (self.isDocumentReadyForUse && self.favoritesDocument.documentState == UIDocumentStateNormal)
{
NSDictionary *dealInfo = [self.nearbyDeals objectAtIndex:index];
NSManagedObjectContext *context = self.favoritesDocument.managedObjectContext;
NSFetchRequest *request = [NSFetchRequest fetchRequestWithEntityName:@"Deal"];
request.predicate = [NSPredicate predicateWithFormat:@"url = %@",[dealInfo objectForKey:@"url"
NSArray *matchingDeals = [context executeFetchRequest:request error:NULL];
Deal *deal = [matchingDeals lastObject];
if (!deal)
{
deal = [NSEntityDescription insertNewObjectForEntityForName:@"Deal"
inManagedObjectContext:context];
deal.title = [dealInfo objectForKey:@"title"];
deal.subtitle = [dealInfo objectForKey:@"subtitle"];
deal.latitude = [[dealInfo objectForKey:@"latitude"] floatValue];
deal.longitude = [[dealInfo objectForKey:@"longitude"] floatValue];
deal.url = [dealInfo objectForKey:@"url"];
NSString *thumbnailUrlString = [dealInfo objectForKey:@"thumbnail"];
NSData *imageData = [self.images objectForKey:thumbnailUrlString];
if (imageData)
{
deal.thumbnail = imageData;
}
else
{
NSURL *thumbnailUrl = [NSURL URLWithString:thumbnailUrlString];
deal.thumbnail = [NSData dataWithContentsOfURL:thumbnailUrl];
}
[self.favoritesDocument saveToURL:self.favoritesDocument.fileURL
forSaveOperation:UIDocumentSaveForOverwriting
completionHandler:^(BOOL success) {
if (success) NSLog(@"Document saved");
else NSLog(@"Error saving: %@", self.favoritesDocument.fileURL);
}];
}
}
}
@end
//
// DealsModel.h
// NearbyDeals
//
// Created by Radu-Tudor Ionescu on 4/17/12.
// Copyright (c) 2012 __MyCompanyName__. All rights reserved.
//
#import <Foundation/Foundation.h>
#import <CoreLocation/CoreLocation.h>
#import <CoreData/CoreData.h>
#import "Deal.h"
@interface DealsModel : NSObject
@property (nonatomic, strong) NSArray *nearbyDeals;
@property (nonatomic, strong) CLLocation *deviceLocation;
@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesDocum
@property (nonatomic) BOOL isDocumentReadyForUse;
@property (nonatomic, readonly, copy) NSMutableArray *favoriteD
+ (DealsModel *)sharedModel;
+ (NSString *)didDownloadImagesNotificationName;
- (void)addToFavoritesDealAtIndex:(int)index;
- (void)removeFavoriteDeal:(Deal *)deal;
@end
Finally, we save to favoritesDocument in the Documents directory. Note that it contains its own URL in this @property.
The Core Data Model should already be in the Documents directory. Thus the operation is UIDocumentSaveForOverwriting.

Task 2

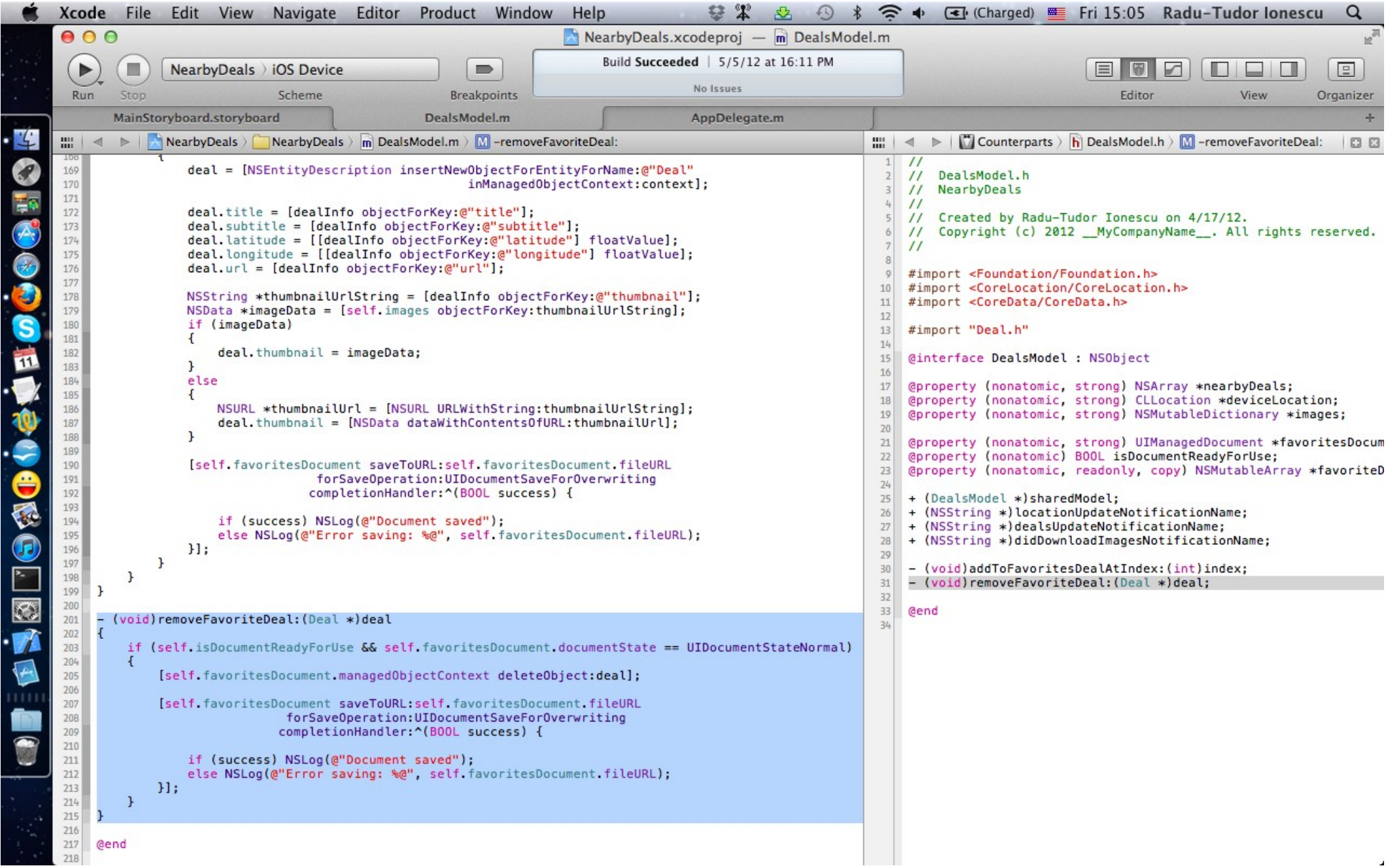
Task: Add API to the DealsModel class to make it easy to add, query and remove favorite deals.

13. We will implement the `removeFavoriteDeal:` method to complete our API. It will simply remove the `deal` received as a parameter.

Again, the first thing to do is to test if the document is in a state that would let us delete a `deal`. To remove the `deal` we send the `deleteObject:` message to the `managedObjectContext`.

Make sure our change is replicated on the File System by saving the `favoritesDocument` in the Documents directory.

Look over the next slide for help.


Xcode File Edit View Navigate Editor Product Window Help
(Charged) Fri 15:05 Radu-Tudor Ionescu
NearbyDeals.xcodeproj — DealsModel.m
Run Stop NearbyDeals › iOS Device Scheme Breakpoints
Build Succeeded | 5/5/12 at 16:11 PM
No Issues
Editor View Organizer
MainStoryboard.storyboard DealsModel.m AppDelegate.m
NearbyDeals › NearbyDeals › DealsModel.m › -removeFavoriteDeal:
Counterparts › DealsModel.h › -removeFavoriteDeal:
deal = [NSEntityDescription insertNewObjectForEntityForName:@"Deal"
inManagedObjectContext:context];
deal.title = [dealInfo objectForKey:@"title"];
deal.subtitle = [dealInfo objectForKey:@"subtitle"];
deal.latitude = [[dealInfo objectForKey:@"latitude"] floatValue];
deal.longitude = [[dealInfo objectForKey:@"longitude"] floatValue];
deal.url = [dealInfo objectForKey:@"url";
NSString *thumbnailUrlString = [dealInfo objectForKey:@"thumbnail"];
NSData *imageData = [self.images objectForKey:thumbnailUrlString];
if (imageData)
{
deal.thumbnail = imageData;
}
else
{
NSURL *thumbnailUrl = [NSURL URLWithString:thumbnailUrlString];
deal.thumbnail = [NSData dataWithContentsOfURL:thumbnailUrl];
}
[self.favoritesDocument saveToURL:self.favoritesDocument.fileURL
forSaveOperation:UIDocumentSaveForOverwriting
completionHandler:^(BOOL success) {
if (success) NSLog(@"Document saved");
else NSLog(@"Error saving: %@", self.favoritesDocument.fileURL);
}];
}
}
}
- (void)removeFavoriteDeal:(Deal *)deal
{
if (self.isDocumentReadyForUse && self.favoritesDocument.documentState == UIDocumentStateNormal)
{
[self.favoritesDocument.managedObjectContext deleteObject:deal];
[self.favoritesDocument saveToURL:self.favoritesDocument.fileURL
forSaveOperation:UIDocumentSaveForOverwriting
completionHandler:^(BOOL success) {
if (success) NSLog(@"Document saved");
else NSLog(@"Error saving: %@", self.favoritesDocument.fileURL);
}];
}
}
@end
//
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#import "Deal.h"
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@property (nonatomic, strong) NSMutableDictionary *images;
@property (nonatomic, strong) UIManagedDocument *favoritesDocum
@property (nonatomic) BOOL isDocumentReadyForUse;
@property (nonatomic, readonly, copy) NSMutableArray *favoriteD
+ (DealsModel *)sharedModel;
+ (NSString *)locationUpdateNotificationName;
+ (NSString *)dealsUpdateNotificationName;
+ (NSString *)didDownloadImagesNotificationName;
- (void)addToFavoritesDealAtIndex:(int)index;
- (void)removeFavoriteDeal:(Deal *)deal;
@end

Assignment 1

Assignment: Save the nearby deals “viewed” by the user in the Core Data Model.

Note that deals are “viewed” when they appear in the Deal Details View Controller. Remember that deals can be “viewed” from the list or from the map.

Hint: First, you should `addToFavoritesDealAtIndex:` when the Table View Controller prepares the `@"ShowDealDetails"` segue.

The `AtIndex:` argument corresponds to the `UITableViewCell`'s `indexPath`.

The same thing to do in the Map View Controller. Note that the `AtIndex:` parameter correspond this time to the `pinView`'s `tag`.

Assignment 2*

Assignment: Add another View Controller to present favorite deals.

Hints: You must create a new subclass of `UITableViewController` and add it to your Project. Name this class something like `FavoritesTableViewController`.

On the MainStoryboard.storyboard file you would have to add a Table View Controller from Object Library.

Configure it to be similar to the DealsTableViewController. Set the Row Height to 70 pixels and make sure that the Prototype Cell is of the same height. Set the Prototype Cell's style to Subtitle and assign it a reuse identifier.

Make sure this Table View Controller's (added from Object Library) class type is `FavoritesTableViewController`.

CTRL-drag from the Tab Bar Controller to the Favorites Table View Controller to create a new tab. Set the Tab Bar Item identifier to Favorites (it will also have an icon).

Assignment 2*

Hints: Add implementation to the FavoritesTableViewController.m file. It should have an `NSMutableArray` `@property` that will hold the `favoriteDeals`. This property can be private.

Fetch the `favoriteDeals` when `viewWillAppear:` and `reloadData`. You would have to `#import` the `DealsModel` header file for this.

Implement the Table View data source methods: return 1 for the number of sections and `favoriteDeals.count` for the number of rows.

Make sure you `initWithStyle:reuseIdentifier:` a cell if there isn't one to dequeue in `tableView:cellForRowAtIndexPath:`. Note that you have to create a `UIImage` from the deal's `thumbnail` using `imageWithData:` before `returning` the `cell`.

To support standard deletion of `UITableViewCells` you must implement `tableView:commitEditingStyle:forRowAtIndexPath:` method. Uncomment the code that was generated by Xcode. Send the `removeFavoriteDeal:` message to the `sharedModel` to remove a deal from the Core Data Model. Also remove it from the `favoriteDeals` (this is why `favoriteDeals` is mutable).

Assignment 3

Assignment: Run the application in iOS Simulator and test the new features. Try to see if the Favorite Deals live after the application is terminated.

Hint: To terminate an application tap twice on the Home button of the device. Look for the NearbyDeals application in the pop-up menu that appears on screen (right above the Home button). Hold your finger on the application's icon until it starts shaking. Then tap on the little minus badge on the upper left corner of the icon.

Start the application again by tapping on its icon on the Home screen. The previously saved favorite deals should appear right from the start.

Congratulations!