Design Patterns

MSc in Computer Science

Produced by

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Todo App

developer.apple.com

Start Developing iOS Apps Today

Objective-C only

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Setup

Start Developing iOS Apps Today provides the perfect starting point for iOS development. On your Mac, you can create iOS apps that run on iPad, iPhone, and iPod touch. View this guide's four short modules as a gentle introduction to building your first app—including the tools you need and the major concepts and best practices that will ease your path.

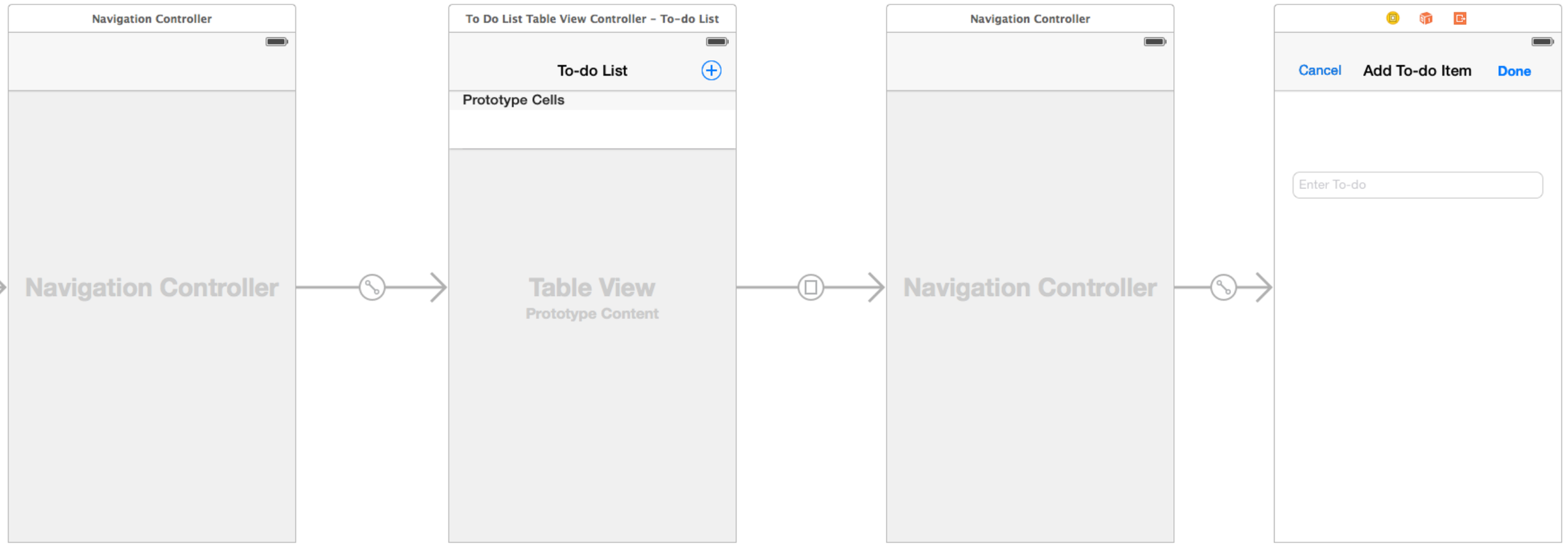
The first three modules each end with a tutorial, where you'll implement what you've learned. At the end of the last tutorial, you'll have created a simple to-do list app.

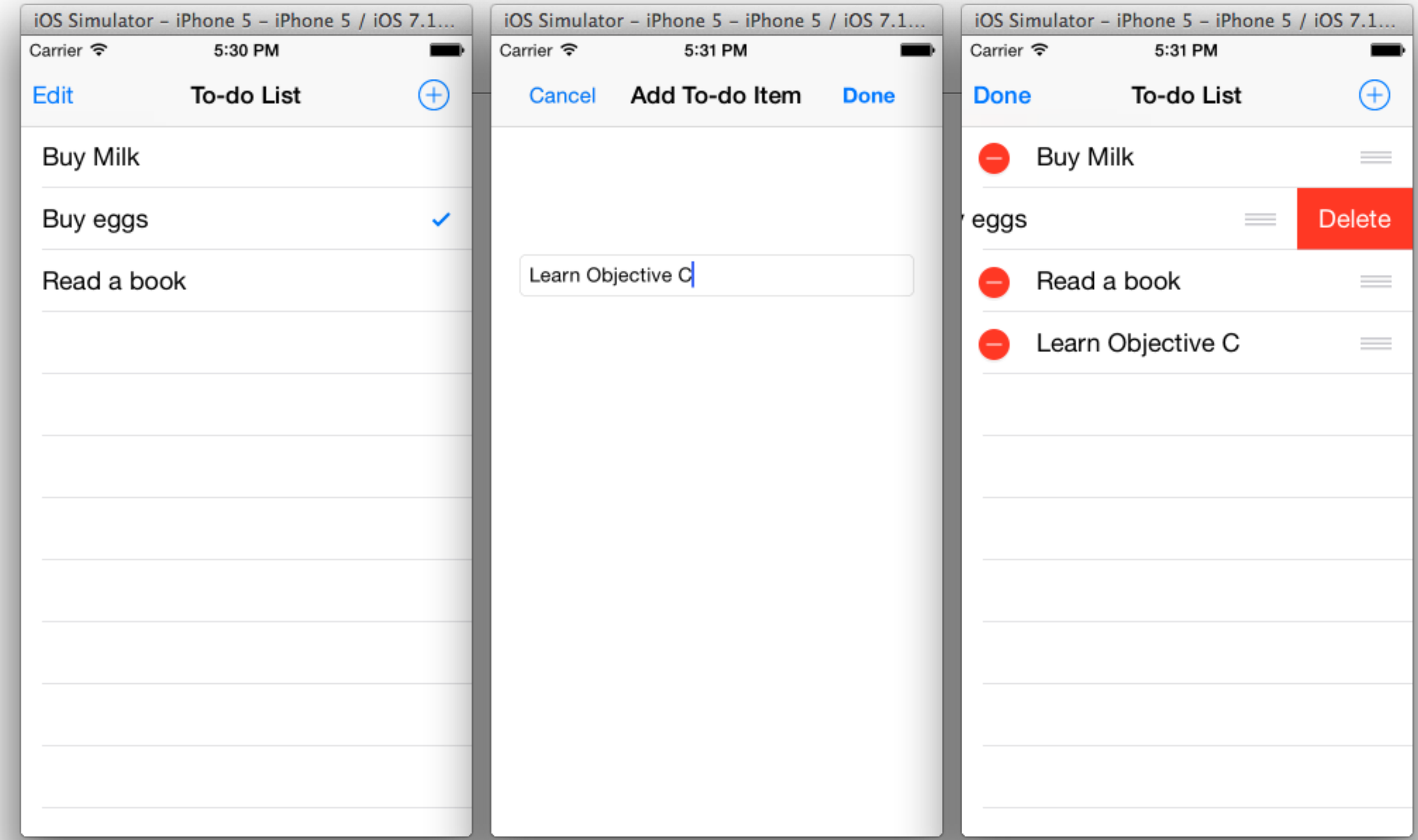
After you've built your first app in this guide and are considering your next endeavor, read the fourth module. It explores the technologies and frameworks you might consider adopting in your next app. You'll be on your way to keeping your customers engaged and looking forward to the next great thing.

Even though this guide takes you through every step of building a simple app, to benefit most it helps to be acquainted with computer programming in general and with object-oriented programming in particular.

Feedback

https://developer.apple.com/library/prerelease/ios/referencelibrary/GettingStarted/RoadMapiOS/index.html#//apple_ref/doc/uid/TP40011343-CH2-SW1


Navigation Controller
Navigation Controller
To Do List Table View Controller - To-do List
To-do List
Prototype Cells
Table View
Prototype Content
Navigation Controller
Navigation Controller
Cancel
Add To-do Item
Done
Enter To-do


iOS Simulator - iPhone 5 - iPhone 5 / iOS 7.1...
Carrier
5:30 PM
Edit
To-do List
Buy Milk
Buy eggs
Read a book
iOS Simulator - iPhone 5 - iPhone 5 / iOS 7.1...
Carrier
5:31 PM
Cancel
Add To-do Item
Done
Learn Objective C
iOS Simulator - iPhone 5 - iPhone 5 / iOS 7.1...
Carrier
5:31 PM
Done
To-do List
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Delete
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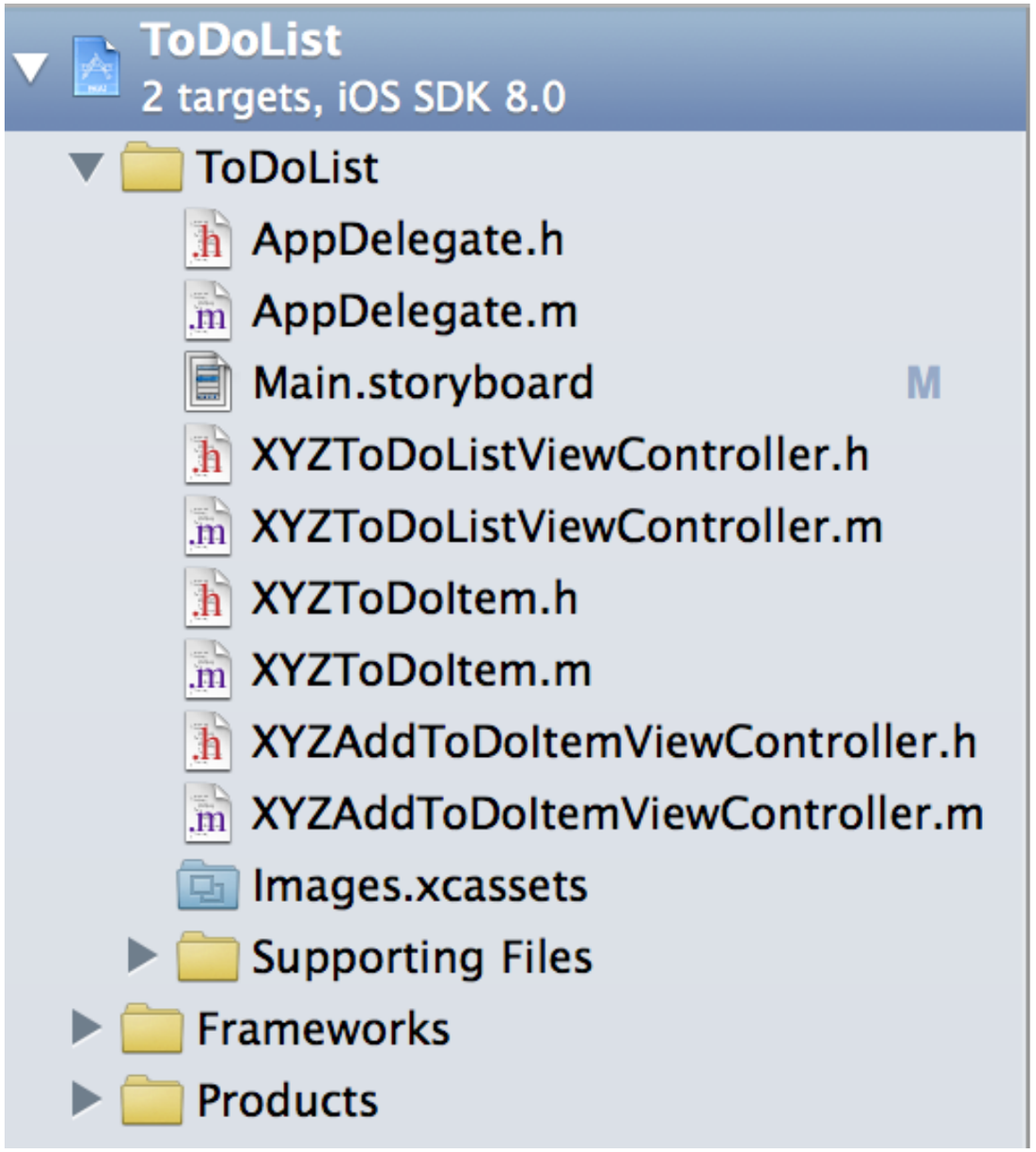
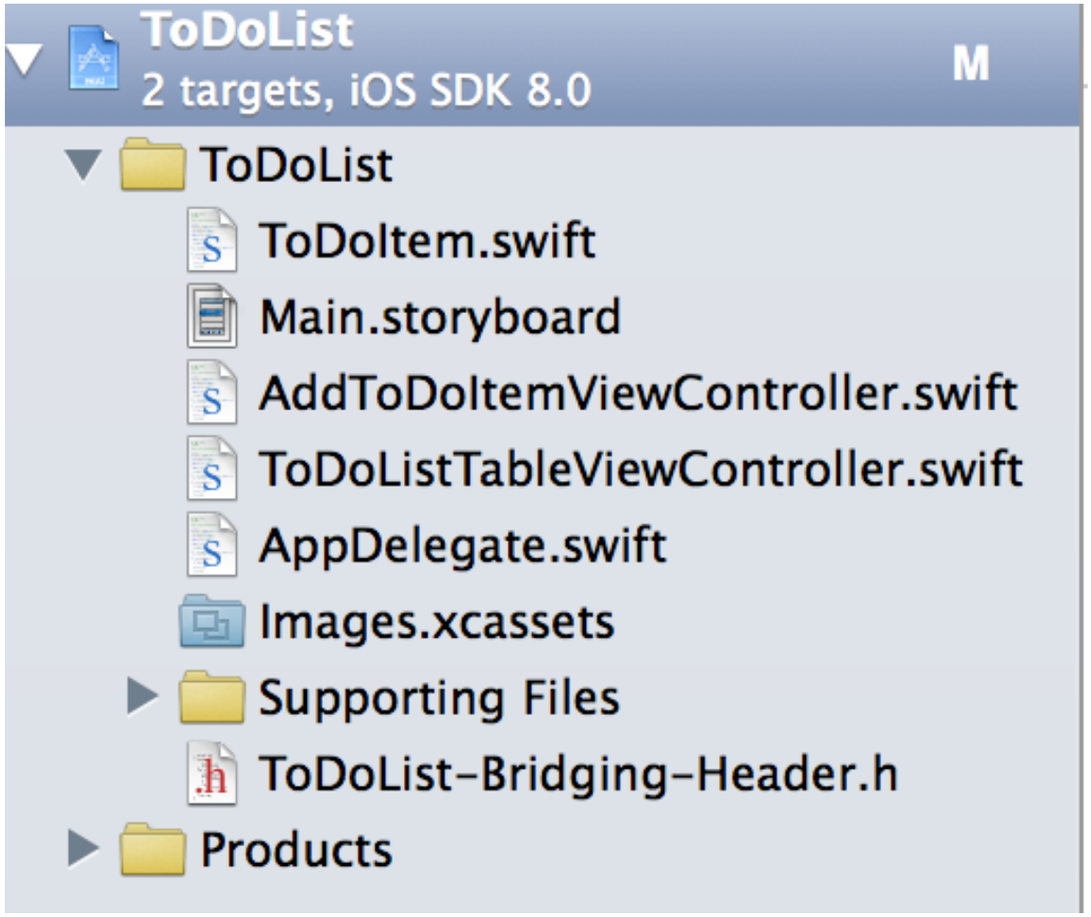
Learn Objective C

ToDoList Applications



8 source files



5 source files

AppDelegate

```objc
#import <UIKit/UIKit.h>

@interface AppDelegate : UIResponder <UIApplicationDelegate>

  @property (strong, nonatomic) UIWindow *window;

@end
```

```objc
#import "AppDelegate.h"

@implementation AppDelegate

- (BOOL)application:(UIApplication *)application
-       didFinishLaunchingWithOptions:(NSDictionary *)launchOptions
{
  return YES;
}

- (void)applicationWillResignActive:(UIApplication *)application
{
}

- (void)applicationDidEnterBackground:(UIApplication *)application
{
}

- (void)applicationWillEnterForeground:(UIApplication *)application
{
}

- (void)applicationDidBecomeActive:(UIApplication *)application
{
}

- (void)applicationWillTerminate:(UIApplication *)application
{
}

@end
```

```swift
import UIKit

@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate
{
  var window: UIWindow?

  func application(application: UIApplication,
                   didFinishLaunchingWithOptions: NSDictionary?) -> Boo
  {
    return true
  }

  func applicationWillResignActive(application: UIApplication)
  {
  }

  func applicationDidEnterBackground(application: UIApplication)
  {
  }

  func applicationWillEnterForeground(application: UIApplication)
  {
  }

  func applicationDidBecomeActive(application: UIApplication)
  {
  }

  func applicationWillTerminate(application: UIApplication)
  {
  }
}
```

The Model

```objc
#import <Foundation/Foundation.h>

@interface XYZToDoItem : NSObject <NSCoding>

  @property NSString *itemName;
  @property BOOL      completed;

@end
```

```objc
#import "XYZToDoItem.h"

@implementation XYZToDoItem
- (id)init
{
  self = [super init];
  if (self)
  {
    _completed = NO;
  }

  return self;
}

- (id)initWithCoder:(NSCoder *)coder
{
  self = [super init];
  if (self)
  {
    _itemName = [coder decodeObjectForKey:@"itemName"];
    _completed = [coder decodeBoolForKey:@"completed"];
  }

  return self;
}

- (void)encodeWithCoder:(NSCoder *)coder
{
  [coder encodeObject:self.itemName forKey:@"itemName"];
  [coder encodeBool:self.completed forKey:@"completed"];
}

@end
```

```swift
class ToDoItem
{
  var completed = false
  var itemName  = ""

  init(completed: Bool = false, itemName:String = "empty")
  {
    self.completed = completed
    self.itemName  = itemName
  }
}
```

ToDoItemController

```objc
#import <UIKit/UIKit.h>
#import "XYZToDoItem.h"

@interface XYZAddToDoItemViewController : UIViewController
  @property XYZToDoItem *toDoItem;
@end
```

```objc
#import "XYZAddToDoItemViewController.h"

@interface XYZAddToDoItemViewController ()
  @property (weak, nonatomic) IBOutlet UITextField *textField;
  @property (weak, nonatomic) IBOutlet UIBarButtonItem *doneButton;
@end

@implementation XYZAddToDoItemViewController

- (void) prepareForSegue:(UIStoryboardSegue *)segue sender:(id)sender
{
  if (sender != self.doneButton) return;
  if (self.textField.text.length > 0)
  {
    self.toDoItem = [[XYZToDoItem alloc] init];
    self.toDoItem.itemName = self.textField.text;
  }
}

- (id)initWithNibName:(NSString *)nibNameOrNil bundle:(NSBundle *)nibBundleOrNil
{
  self = [super initWithNibName:nibNameOrNil bundle:nibBundleOrNil];
  if (self)
  {
  }
  return self;
}

- (void)viewDidLoad
{
  [super viewDidLoad];
}

- (void)didReceiveMemoryWarning
{
  [super didReceiveMemoryWarning];
}
@end
```

ToDoItemController

```
import UIKit

class AddToDoItemViewController: UIViewController
{
  var todoItem : ToDoItem?

  @IBOutlet var toDoItemText : UITextField
  @IBOutlet var doneButton   : UIButton

  init(nibName nibNameOrNil: String?, bundle nibBundleOrNil: NSBundle?)
  {
    super.init(nibName: nibNameOrNil, bundle: nibBundleOrNil)
  }

  override func prepareForSegue(segue: UIStoryboardSegue!, sender: AnyObject!)
  {
    if let button = sender as? NSObject
    {
      todoItem = button == doneButton ? ToDoItem(itemName:toDoItemText.text): nil
    }
  }

  init(coder aDecoder: NSCoder!)
  {
    super.init(coder: aDecoder)
  }
}
```

ToDoListTableConroller

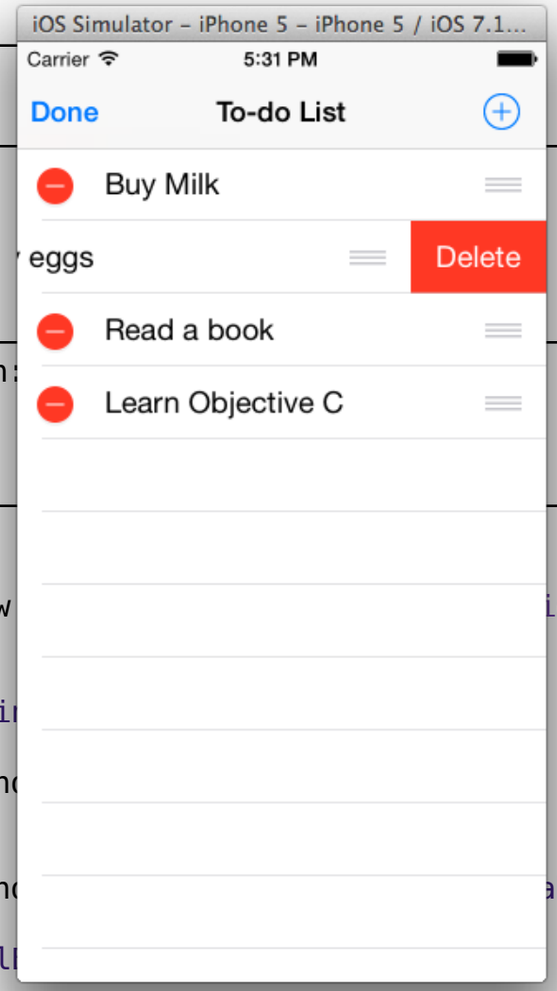
```objc
#import <UIKit/UIKit.h>

@interface XYZToDoListViewController : UITableViewController
  @property NSMutableArray *toDoItems;
@end
```

```objc
#import "XYZToDoListViewController.h"
#import "XYZToDoItem.h"
#import "XYZAddToDoItemViewController.h"

@interface XYZToD

@property NSStrin

@end

@implementation X

- (void)saveList
{
  [NSKeyedArchive
}

- (void)loadIniti
{
  XYZToDoItem *it
  item1.itemName
  [self.toDoItems

  XYZToDoItem *it
  item2.itemName
  [self.toDoItems

  XYZToDoItem *it
  item3.itemName
  [self.toDoItems

}

- (IBAction)unwi
{
  XYZAddToDoItem
  XYZToDoItem *it
  if (item != nil
  {
    [self.toDoIte
    [self saveLis
    [self.tableV

  }
}

(id)initWithSty
```

```objc
- (id)initWithStyle:(UITableViewStyle)style
{
  self = [super initWithStyle:style];
  if (self)
  {
  }
  return self;
}

- (void)viewDidLoad
{
  [super viewDidLoad]

  self.path = [NSSear
  self.path = [self.p

  NSFileManager *file
  if (![fileManager f
  {
    self.toDoItems =
  }
  else
  {
    self.toDoItems =
  }
  self.navigationItem
}

- (void)didReceiveMem
{
  [super didReceiveMe
}

#pragma mark - Table

- (NSInteger)numberOf
{
  return 1;
}

- (NSInteger)tableVie
{
  return [self.toDoIt
}
```

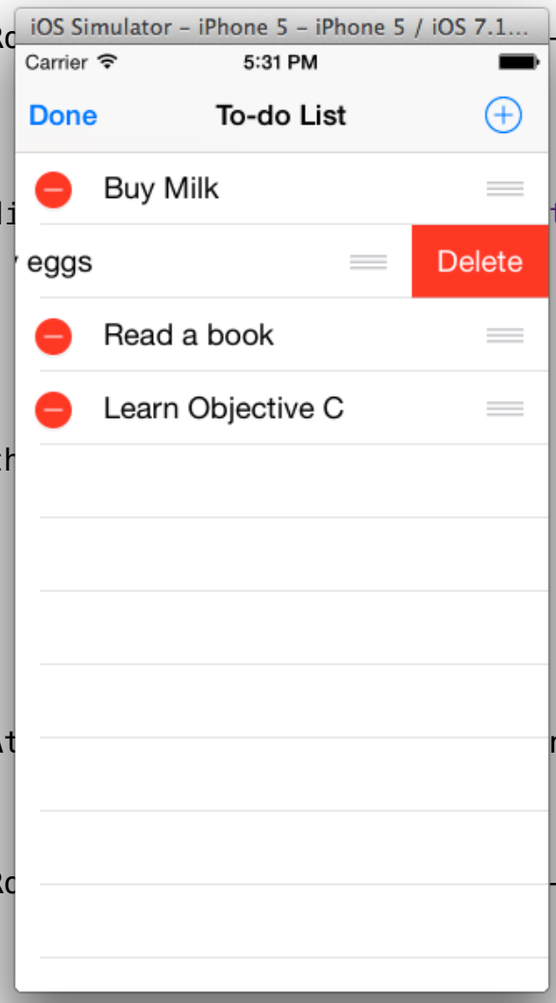
```objc
- (NSInteger)tableView:(UITableView *)tableView numberOfRowsInSection:
{
  return [self.toDoItems count];
}

- (UITableViewCell *)table
{
  static NSString *CellIde
  UITableViewCell *cell =

  XYZToDoItem *toDoItem =
  cell.textLabel.text = to

  if (toDoItem.completed)
  {
    cell.accessoryType = U
  }
  else
  {
    cell.accessoryType = U
  }

  return cell;
}

- (BOOL)tableView:(UITable
{
  return YES;
}

- (void)tableView:(UITable
*)indexPath
{
  if (editingStyle == UITab
  {
    [self.toDoItems remove
    [self saveList];
```

```objc
- (void)tableView:(UITableView *)tableView
*)indexPath
{
  if (editingStyle == UITableViewCellEditi
  {
    [self.toDoItems removeObjectAtIndex:in
    [self saveList];

    [tableView deleteRowsAtIndexPaths:@[in
  }
  else if (editingStyle == UITableViewCell
  {
  }
}

- (void)tableView:(UITableView *)tableView moveRowAtIndexPath:(NSIndexPath
{
}

- (BOOL)tableView:(UITableView *)tableView canMoveRowAtIndexPath:(NSIndexP
{
  return YES;
}

#pragma mark - Navigation

- (void)tableView:(UITableView *)tableView didSelectRowAtIndexPath:(NSInde
{
  [tableView deselectRowAtIndexPath:indexPath animated:NO];
```



ToDoListTableConroller

```
import UIKit

@objc(ToDoListTableViewController) class ToDoListTableViewController: UITableViewController
{
  var todoItems = ToDoItem[]()

  init(style: UITableViewStyle)
  {
    super.init(style: style)
  }

  init(coder aDecoder: NSCoder!)
  {
    super.init(coder: aDecoder)
  }

  func loadInitialData()
  {
    todoItems.append(ToDoItem(itemName:"Buy Mil
    todoItems.append(ToDoItem(itemName:"Buy egg
    todoItems.append(ToDoItem(itemName:"Read a
  }

  override func viewDidLoad()
  {
    super.viewDidLoad()
    loadInitialData()
    navigationItem.leftBarButtonItem = self.edi
  }

  @IBAction func unwindToList (segue: UIStoryboa
  {
    var controller = segue?.sourceViewControlle
    if controller.todoItem != nil
    {
      todoItems.append(controller.todoItem!)
      self.tableView.reloadData()
    }
  }

  override func numberOfSectionsInTableView(tab
  {
    return 1
  }

  override func tableView(tableView: UITableVie
  {
    return todoItems.count
  }

  override func tableView(tableView: UITableView, didSelectRowAtIndexPath : NSIndexPath!)
  {
    tableView.deselectRowAtIndexPath(didSelectRowAtIndexPath, animated: false)
    var task = self.todoItems[didSelectRowAtIndexPath.row] as ToDoItem
    task.completed = !task.completed
    tableView.reloadRowsAtIndexPaths([didSelectRowAtIndexPath], withRowAnimation: UITableVie
  }

  override func tableView(tableView: UITableView?, cellForRowAtIndexPath : NSIndexPath!) ->
  {
    let cell           = UITableViewCell(style: UITableViewCellStyle.Default, reuseIdentifie
    var task           = todoItems[cellForRowAtIndexPath.row]

    cell.text          = task.itemName
    cell.accessoryType = task.completed ? UITableViewCellAccessoryType.Checkmark : UITableVi

    return cell
  }

  override func tableView(tableView: UITableView?, canEditRo
  {
    return true
  }

  override func tableView(tableView: UITableView?, commitEdi
  {
    if commitEditingStyle == .Delete
    {
      if let index = forRowAtIndexPath?.row
      {
        todoItems.removeAtIndex(index)
        tableView?.deleteRowsAtIndexPaths([forRowAtIndexPath
      }
    }
    else if commitEditingStyle == .Insert
    {
    }
  }

  override func tableView(tableView: UITableView?, moveRowAt
  {
  }

  override func tableView(tableView: UITableView?, canMoveRo
  {
    return true
  }
}
```



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