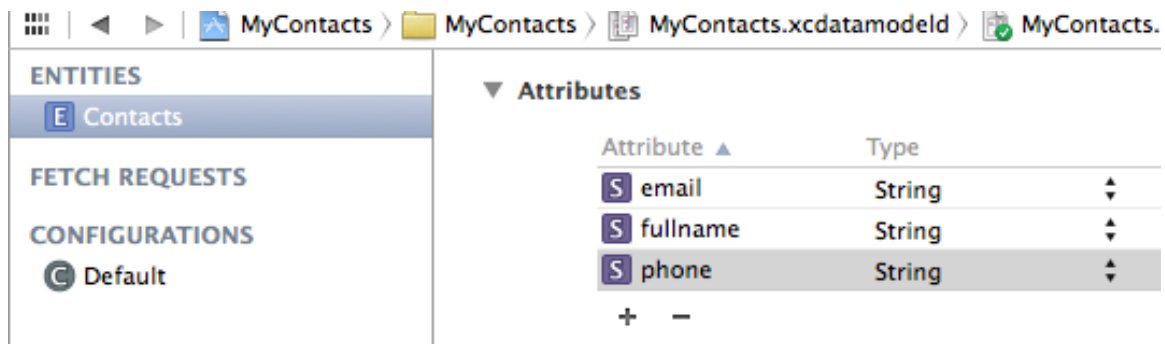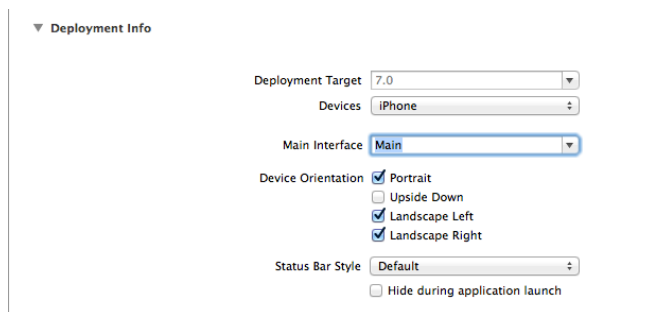MyContacts database using CoreData. Insert, Update, and Delete

1) Create New **Empty Application** name **MyContacts** and check **Use Core Data**
2) Select CoreData **MyContacts.xcdatamodeld** from the Project Navigator
3) Add Entity to Core Data
   a. Click the **+ Add Entity** button
   b. Double click **Entity** under **Entities** and rename to **Contacts**
4) Add Attributes to Entity **Contacts**
   a. Click the + symbol under **Attributes** and add the following attribute, type

      **Attribute, Type**
   b. fullname, string
   c. email, string
   d. phone, string



5) Add StoryBoard
   a. Right-click on MyContacts project name
   b. Select **New File > User Interface**
   c. Select **Storyboard**
   d. Save as **Main**
   e. Select **Create**
6) Select Main Interface
   a. Select **MyContacts** under project navigator
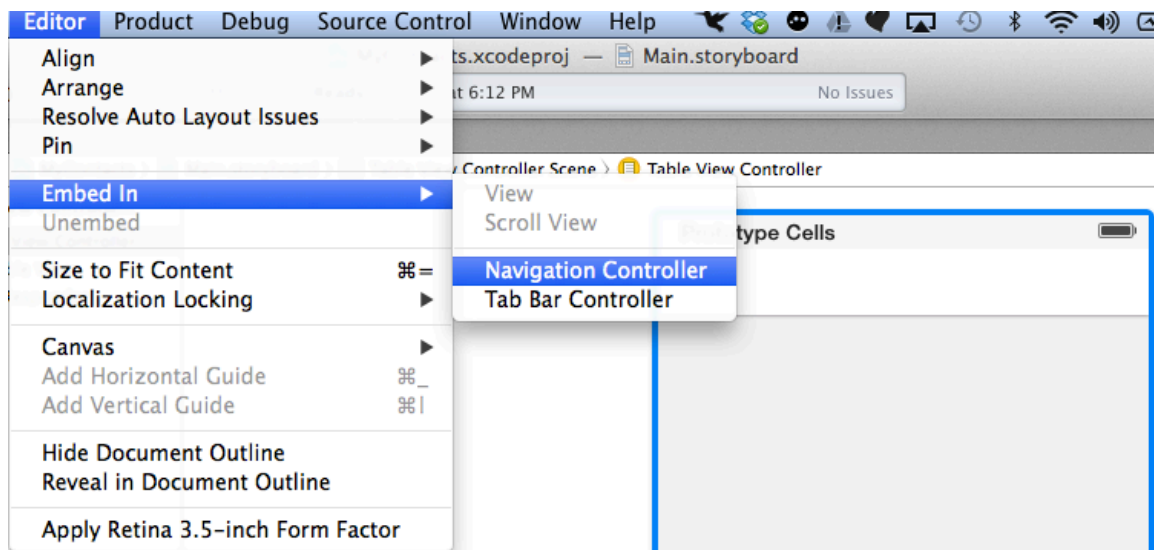   b. Select under **Deployment Info** the dropdown **Main Interface** and select **Main.storyboard**



7) Select **MyContactsAppDelegate.m** and edit **launchOptions**

```
- (BOOL)application:(UIApplication *)application didFinishLaunchingWithOptions:(NSDictionary *)launchOptions
{
    // self.window = [[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]];
    // Override point for customization after application launch.
    // self.window.backgroundColor = [UIColor whiteColor];
    // [self.window makeKeyAndVisible];
    return YES;
}
```
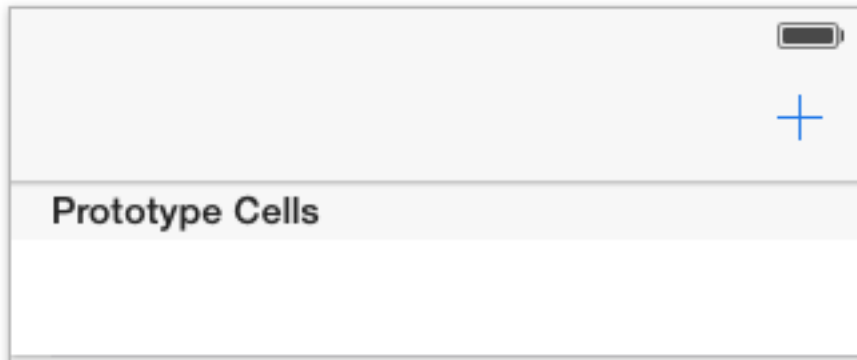
8) Add TableViewController
   a. Select **Main.storyboard**

b. Add TableViewController
c. Select **TableViewController**
d. Embed in **Navigation Controller**
      i. **Editor > Embed In > Navigation Controller**
      ii. **Save**
e. Save



9) Add **New File** > **Objective-C Class** > **Next**
    a. Name Class: **MyContactsViewController**
    b. Select Subclass: **UITableViewController**
    c. Select **Next**
    d. Select **Create**
10) Add class to MyContactsViewController
    a. Select **Main.storyboard**
    b. Select **TableViewController**
    c. Select **Identity Inspector**
      i. Select Dropdown
      ii. Select class **MyContactsViewController**
      iii. **Save**

11) Add new ViewController
    a. Select **Main.storyboard**
    b. Add **ViewController**
12) Add **New File** > **Objective-C Class** > **Next**
    a. Name Class: **MyDetailViewController**
    b. Select Subclass: **UIViewController**
    c. Select **Next**
    d. Select **Create**
13) Add class to **MyDetailViewController**
    a. Select **Main.storyboard**
    b. Select **ViewController**
    c. Select **Identity Inspector**
      i. Select Dropdown
      ii. Select class **MyDetailViewController**
      iii. **Save**

14) Add Button to right side of Navigation item bar
   a. Select Bar Button item from outline view
   b. Select Attribute **Type**
      i. Style: **Bordered**
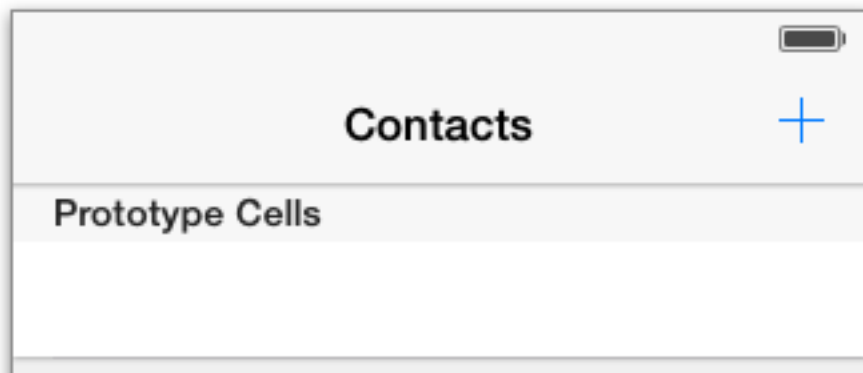      ii. Identifier: **Add**



15) Add Navigation Bar to **MyDetailViewController** under battery icon
16) Add 2 buttons Navigation Bar
   a. Left button title **Back**
      i. Style: **Bordered**
      ii. Identifier: **Custom**
   b. Right button title **Save**
      i. Style: **Bordered**
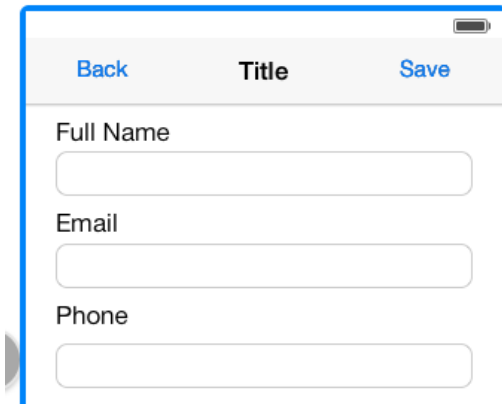      ii. Identifier: **Custom**

17) Select MyContactsViewController from StoryBoard and set Title of Navigation item bar **Contacts**



18) Add controls to **MyDetailViewController** (make look like below)
   a. **3 Labels**
   b. **3 TextFields**

c. Add **outlets** and **actions**

```
//
//  MyDetailViewController.h
//  MyContacts
//
//  Created by Charles Konkol on 11/10/13.
//  Copyright (c) 2013 Chuck Konkol. All rights reserved.
//

#import <UIKit/UIKit.h>

@interface MyDetailViewController : UIViewController
@property (strong, nonatomic) IBOutlet UITextField *fullname;
@property (strong, nonatomic) IBOutlet UITextField *email;
@property (strong, nonatomic) IBOutlet UITextField *phone;
- (IBAction)btnSave:(id)sender;
- (IBAction)btnBack:(id)sender;

@end
```

19) Control drag + button on **MyDetailViewController** to **MyContactsViewController** and select top Modal
20) Select **Table View Cell** from **MyContactsViewController**
   a. Style: **Right Detail**
   b. Identifier: **Cell**
   c. Control drag **Table View Cell** to **MyContactsViewController** and select the top Modal
   d. Click on the **Modal segue from Cell to My Detail**
   e. Change identifier to **UpdateContacts**
21) **Modify MyDetailViewController.h** Add before @end
   `@property (strong) NSManagedObject *contactdb;`

## 22) Modify MyDetailViewController.m

Replace code from @implementation MyDetailViewController to @end

```objc
@synthesize contactdb;
- (void)viewDidLoad
{
    [super viewDidLoad];
  // Do any additional setup after loading the view.
    if (self.contactdb) {
        [self.fullname setText:[self.contactdb valueForKey:@"fullname"]];
        [self.email setText:[self.contactdb valueForKey:@"email"]];
        [self.phone setText:[self.contactdb valueForKey:@"phone"]];
    }
}
- (NSManagedObjectContext *)managedObjectContext {
    NSManagedObjectContext *context = nil;
    id delegate = [[UIApplication sharedApplication] delegate];
    if ([delegate performSelector:@selector(managedObjectContext)]) {
        context = [delegate managedObjectContext];
    }
    return context;
}
- (void)didReceiveMemoryWarning
{
    [super didReceiveMemoryWarning];
    // Dispose of any resources that can be recreated.
}
- (IBAction)btnsave:(id)sender {
    NSManagedObjectContext *context = [self managedObjectContext];

    if (self.contactdb) {
        // Update existing device
        [self.contactdb setValue:self.fullname.text forKey:@"fullname"];
        [self.contactdb setValue:self.email.text forKey:@"email"];
        [self.contactdb setValue:self.phone.text forKey:@"phone"];

    } else {
        // Create a new device
        NSManagedObject *newDevice = [NSEntityDescription
insertNewObjectForEntityForName:@"Contacts" inManagedObjectContext:context];
        [newDevice setValue:self.fullname.text forKey:@"fullname"];
        [newDevice setValue:self.email.text forKey:@"email"];
        [newDevice setValue:self.phone.text forKey:@"phone"];
    }
    NSError *error = nil;
    // Save the object to persistent store
    if (![context save:&error]) {
        NSLog(@"Can't Save! %@ %@", error, [error localizedDescription]);
    }

    [self dismissViewControllerAnimated:YES completion:nil];
}
- (IBAction)btnCancel:(id)sender {
    [self dismissViewControllerAnimated:YES completion:nil];
}
```

23)Modify **MyDetailViewController.h** Add after @interface
  @property (strong) NSMutableArray *contactarray;
24)Modify **MyDetailViewController.m**
  a. #import "MyDetailViewController.h"
  b. Replace code below @implementation MyContactsViewController to @end

```objc
- (NSManagedObjectContext *)managedObjectContext
{
    NSManagedObjectContext *context = nil;
    id delegate = [[UIApplication sharedApplication] delegate];
    if ([delegate performSelector:@selector(managedObjectContext)]) {
        context = [delegate managedObjectContext];
    }
    return context;
}
- (id)initWithStyle:(UITableViewStyle)style
{
    self = [super initWithStyle:style];
    if (self) {
        // Custom initialization
    }
    return self;
}
- (void)viewDidLoad
{
    [super viewDidLoad];

}
- (void)viewDidAppear:(BOOL)animated
{
    [super viewDidAppear:animated];

    // Fetch the devices from persistent data store
    NSManagedObjectContext *managedObjectContext = [self managedObjectContext];
    NSFetchRequest *fetchRequest = [[NSFetchRequest alloc]
initWithEntityName:@"Contacts"];
    self.contactarray = [[managedObjectContext executeFetchRequest:fetchRequest
error:nil] mutableCopy];

    [self.tableView reloadData];
}
- (void)didReceiveMemoryWarning
{
    [super didReceiveMemoryWarning];
    // Dispose of any resources that can be recreated.
}
#pragma mark - Table view data source
- (NSInteger)numberOfSectionsInTableView:(UITableView *)tableView
{
    return 1;
}
```

```objc
- (NSInteger)tableView:(UITableView *)tableView
numberOfRowsInSection:(NSInteger)section
{
    return self.contactarray.count;
}
- (UITableViewCell *)tableView:(UITableView *)tableView
cellForRowAtIndexPath:(NSIndexPath *)indexPath
{
    static NSString *CellIdentifier = @"Cell";
    UITableViewCell *cell = [tableView
dequeueReusableCellWithIdentifier:CellIdentifier forIndexPath:indexPath];

    // Configure the cell...
    NSManagedObject *device = [self.contactarray objectAtIndex:indexPath.row];
    [cell.textLabel setText:[NSString stringWithFormat:@"%@ %@", [device
valueForKey:@"fullname"], [device valueForKey:@"email"]]];
    [cell.detailTextLabel setText:[device valueForKey:@"phone"]];
    return cell;
}
// Override to support conditional editing of the table view.
- (BOOL)tableView:(UITableView *)tableView canEditRowAtIndexPath:(NSIndexPath
*)indexPath
{
    // Return NO if you do not want the specified item to be editable.
    return YES;
}
// Override to support editing the table view.
- (void)tableView:(UITableView *)tableView
commitEditingStyle:(UITableViewCellEditingStyle)editingStyle
forRowAtIndexPath:(NSIndexPath *)indexPath
{
    NSManagedObjectContext *context = [self managedObjectContext];
    if (editingStyle == UITableViewCellEditingStyleDelete) {
        // Delete object from database
        [context deleteObject:[self.contactarray objectAtIndex:indexPath.row]];

        NSError *error = nil;
        if (![context save:&error]) {
            NSLog(@"Can't Delete! %@ %@", error, [error localizedDescription]);
            return;
        }
        // Remove device from table view
        [self.contactarray removeObjectAtIndex:indexPath.row];
        [self.tableView deleteRowsAtIndexPaths:[NSArray arrayWithObject:indexPath]
withRowAnimation:UITableViewRowAnimationFade];
    }
}
- (void)prepareForSegue:(UIStoryboardSegue *)segue sender:(id)sender
{
    if ([[segue identifier] isEqualToString:@"UpdateContacts"]) {
        NSManagedObject *selectedDevice = [self.contactarray
objectAtIndex:[[self.tableView indexPathForSelectedRow] row]];
        MyDetailViewController *destViewController = segue.destinationViewController;
        destViewController.contactdb = selectedDevice;
    }
}
```

25)    Ready to Test!
   a. Add Contacts by clicking on + symbol
   b. Edit Contact by selecting row with data, make edits, save
   c. Delete Contact by Swipe Left on row and select Delete