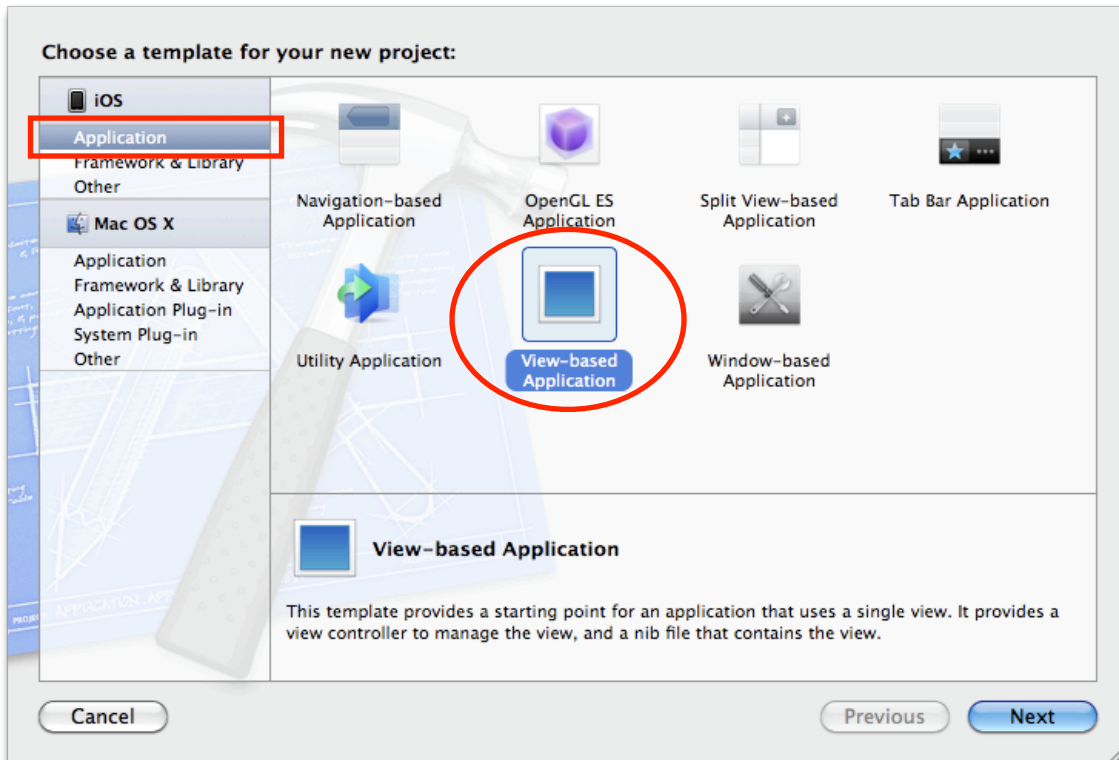
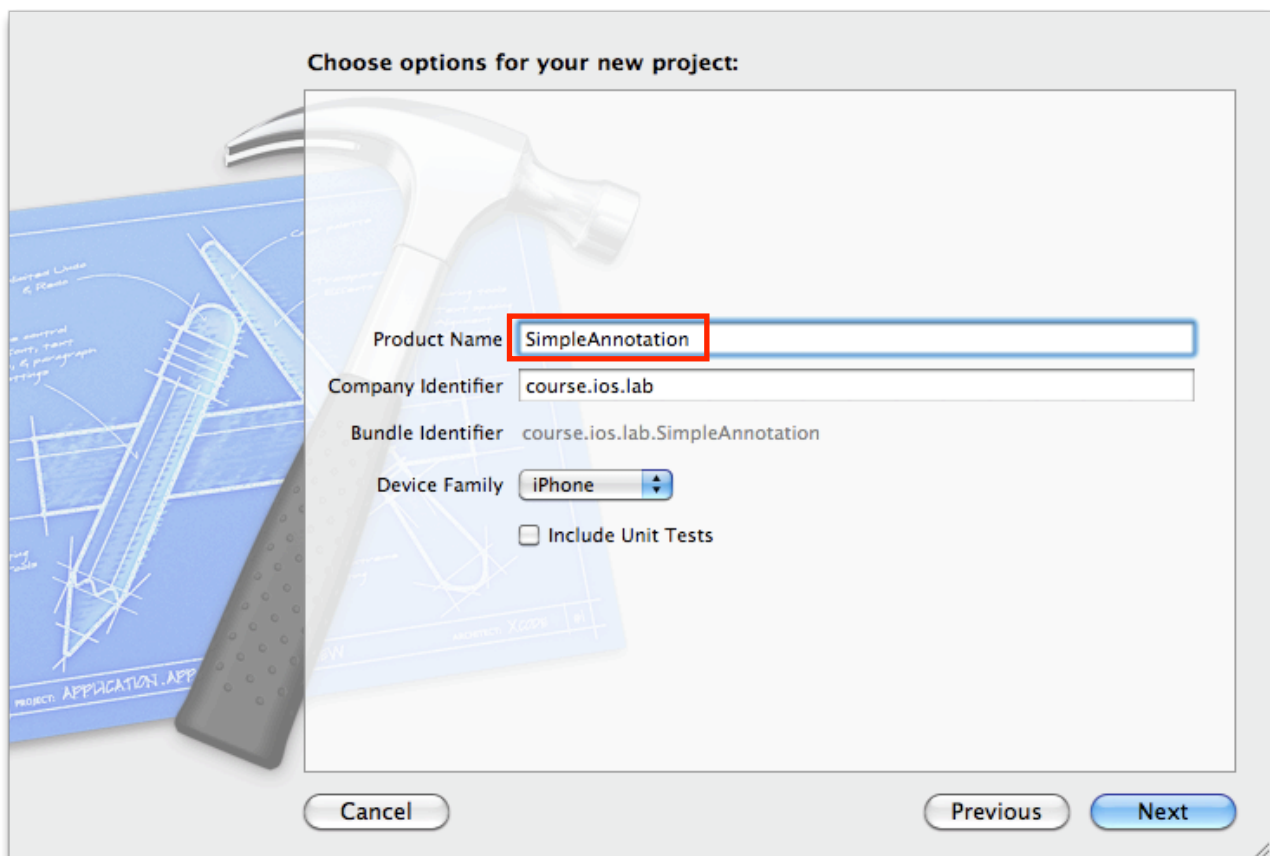


Lab SimpleAnnotation

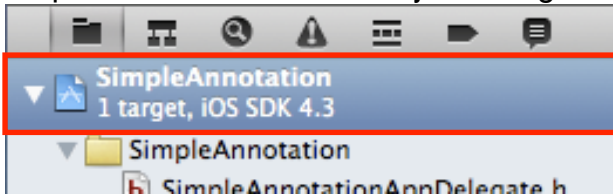
Step 1. 在 File>New>New File 開啓一個新的project, 選擇 View-based application



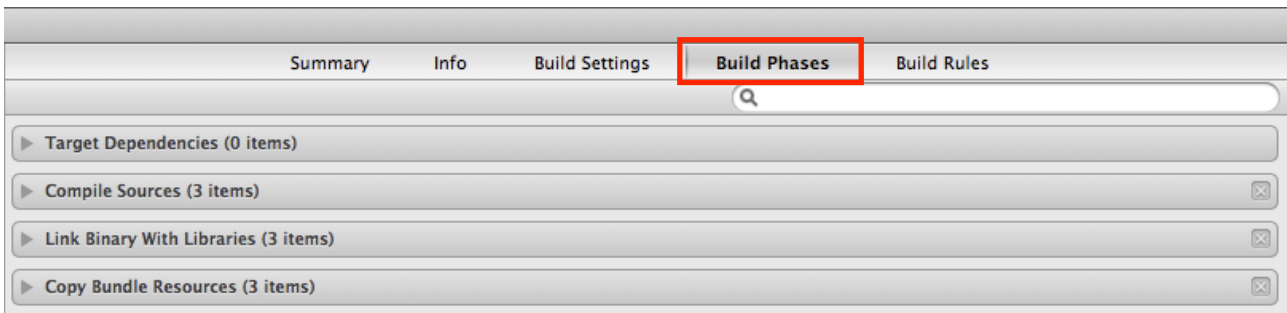
將project命名為 **SimpleAnnotation**



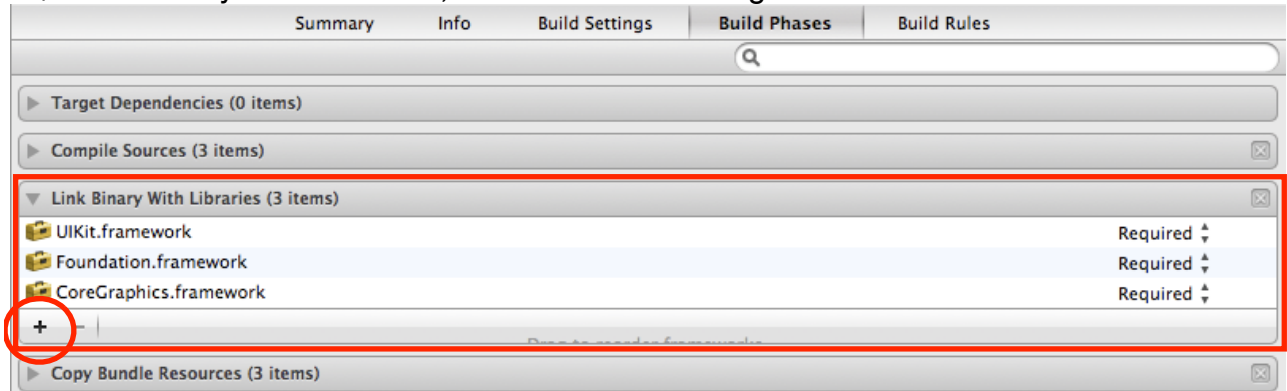
Step 2. 在Xcode左邊視窗Project Navigator裡點選Project **SimpleAnnotation**



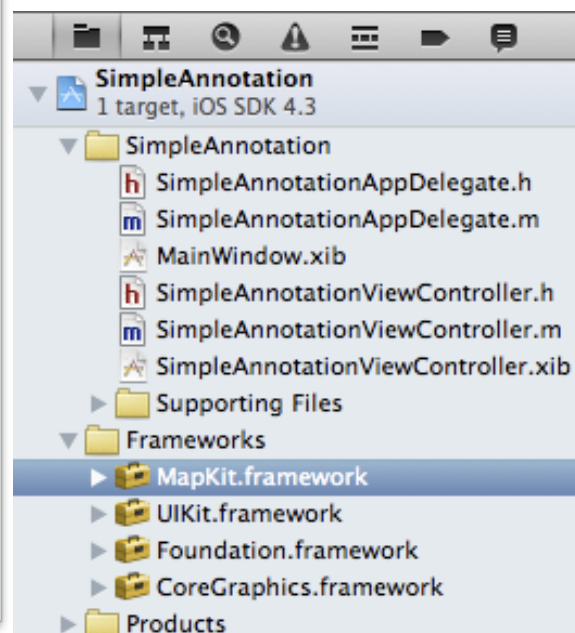
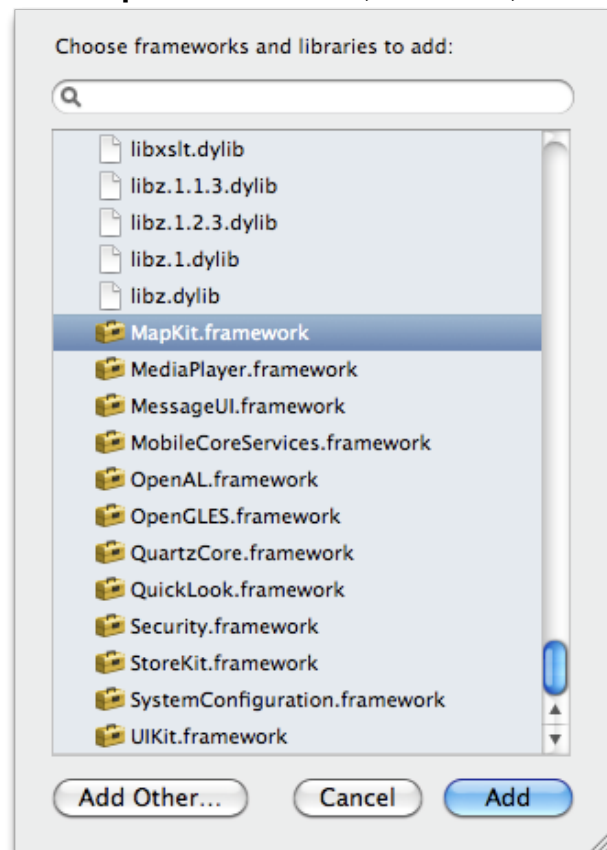
點選 **Build Phases** 這個Tab



開啓 Link Binary With Libraries, 點 + 號來加入Existing Framework



選擇 **MapKit.framework** , 然後 Add, 就加入到我們的Project裡了

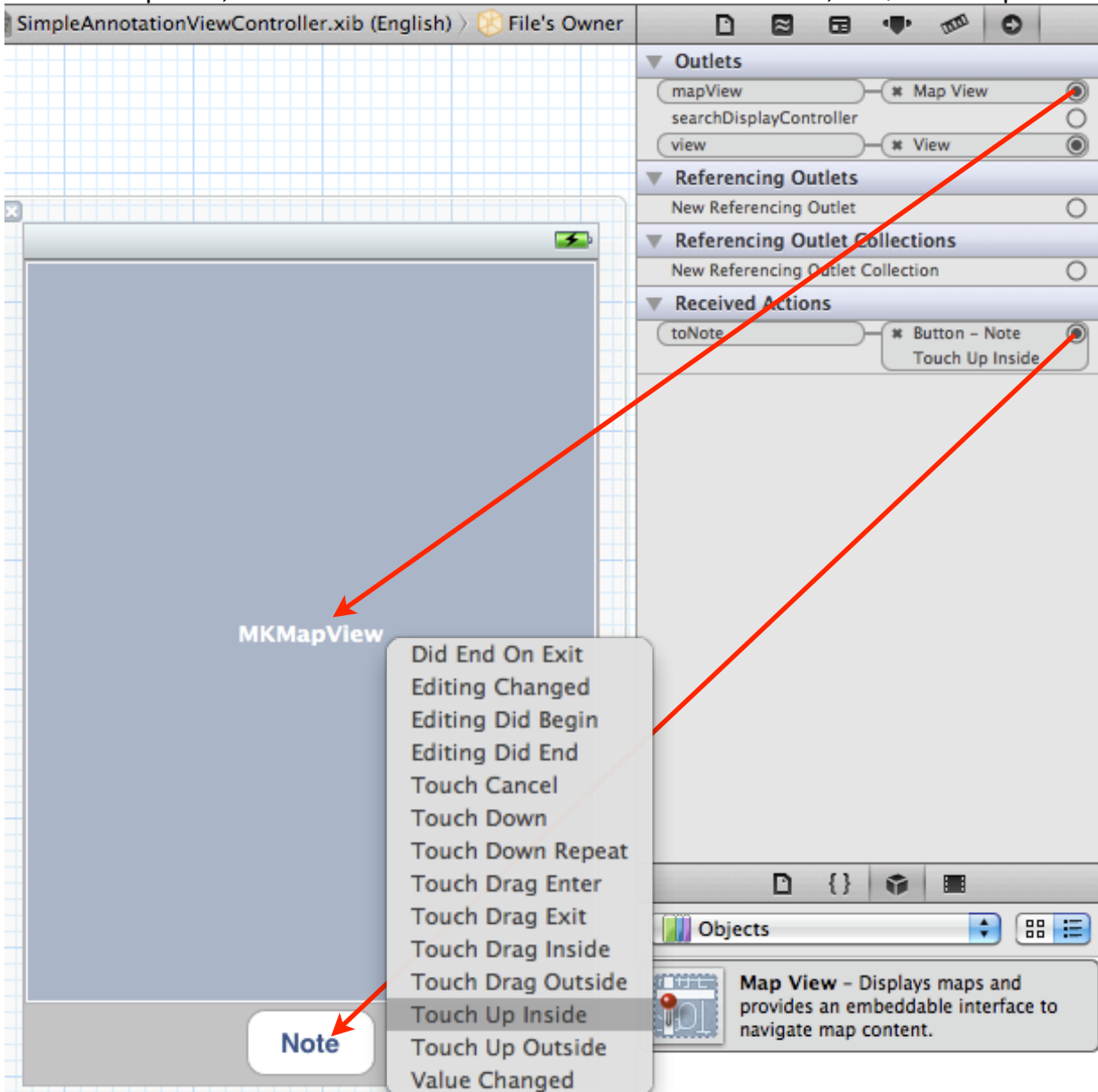


Step 3. 在 SimpleAnnotationViewController.h 裡,import <mapkit/mapkit.h> , 並加入 **<MKMapViewDelegate>**使SimpleAnnotationViewController可實作MKMapView的protocol,並加入一個有MKMapView和其他的相關的設定struct,

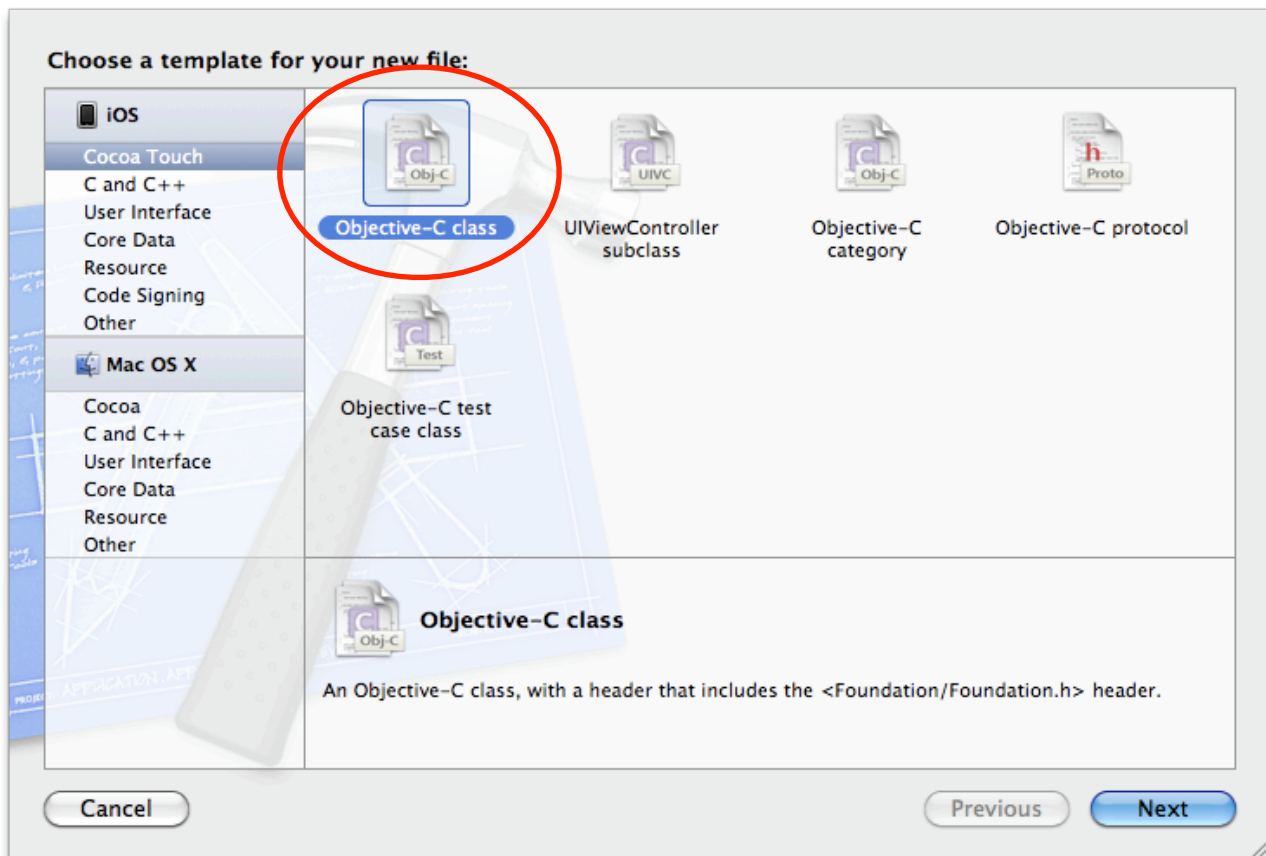
```
#import <UIKit/UIKit.h>
#import <mapkit/mapkit.h>
```

```
@interface SimpleAnnotationViewController : UIViewController
<MKMapViewDelegate> {
    IBOutlet MKMapView *mapView;
    CLLocationCoordinate2D currentLocation;
}
- (IBAction) toNote;
@end
```

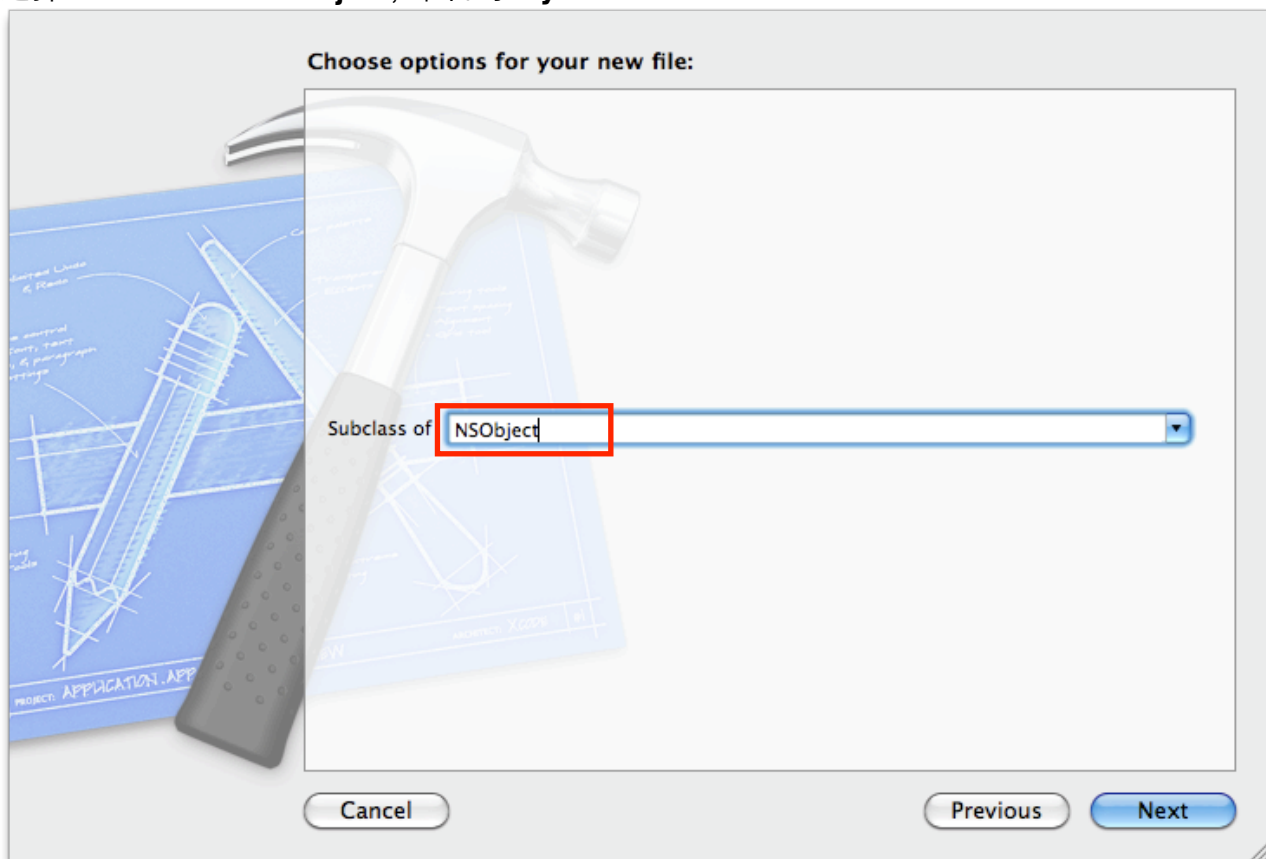
Step 4. 開啓 SimpleAnnotationViewController.xib ,在View裡加入一個MKMapView(拖拉調整到適合大小)和一個Button, 將Button的Title命名為Note,並連接code裡的mapView到View裡的MKMapView,以及toNote這IBAction連接到下面的Note Button, 選擇Touch Up Inside

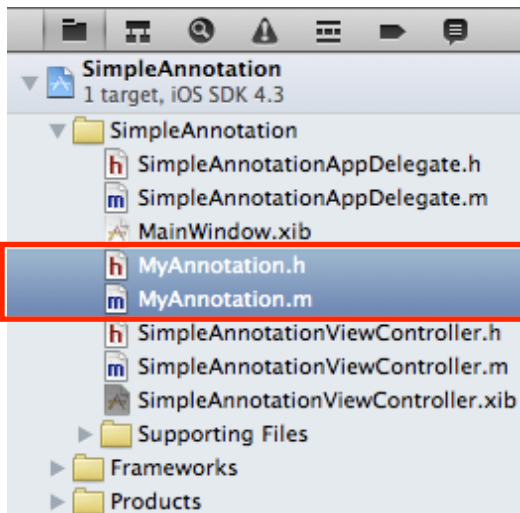


Step 5. 加入一個iOS 裡的 Cocoa Touch Class的Objective-C class



選擇 Subclass of **NSObject**, 命名為 **MyAnnotation**





Step 6. 在MyAnnotation.h 裡面import <MapKit/MapKit.h>, 並加入<MKAnnotation>去實作這個protocol. 加入我們使用到的title和subtitle以及Annotation的coordinate, 並使用property.

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

@interface MyAnnotation : NSObject<MKAnnotation> {
    NSString * title;
    NSString * subtitle;
    CLLocationCoordinate2D coordinate;
}
@property (retain, nonatomic) NSString * title;
@property (retain, nonatomic) NSString * subtitle;
@property (assign, nonatomic) CLLocationCoordinate2D coordinate;
@end
```

Step 7. 在MyAnnotation.m 裡面作對應property的synthesize title, subtitle, coordinate這三個變數

```
#import "MyAnnotation.h"

@implementation MyAnnotation
@synthesize title, subtitle, coordinate;
@end
```

Step 8. 回到 SimpleAnnotationViewController.m 裡先import MyAnnotation.h, 並將ViewDidLoad的mark去掉, 對我們self(SimpleAnnotationViewController)作delegate, 即可實作MKMapView的方法, 並將showUserLocation這個參數設為YES(在simulator GPS定位點預設為Apple公司所在地)

```
#import "SimpleAnnotationViewController.h"
#import "MyAnnotation.h"

@implementation SimpleAnnotationViewController

- (void)viewDidLoad {
    [super viewDidLoad];
    mapView.delegate = self;
    mapView.showsUserLocation = YES;
}
```

Step 9. 實作 mapView: viewForAnnotation:{} 這個method去除了原先UserLocation的annotation維持藍色外,其他將annotation預設的紅色改為綠色,並設定動animatesDrop動畫啓動.

```
- (MKAnnotationView *) mapView:(MKMapView *)mView viewForAnnotation:(id
<MKAnnotation>) annotation{

    if (annotation.coordinate.latitude ==
mView.userLocation.coordinate.latitude
        && annotation.coordinate.longitude ==
mView.userLocation.coordinate.longitude) {
        return nil;
    }
    MKPinAnnotationView *newAnnotation = [[MKPinAnnotationView alloc]
initWithAnnotation:annotation reuseIdentifier:@"annotation1"];
    newAnnotation.pinColor = MKPinAnnotationColorGreen;
    newAnnotation.animatesDrop = YES;
    newAnnotation.canShowCallout=YES;

    return newAnnotation;
}
```

Step 10. 實作toNote這個IBAction, 在mapView加入兩個annotation並分別設定title和subtitle, 最後在判斷userLocation已經定位好並Visible後方可加入我們兩個annotation並將span調整到我們適合觀察的範圍.

```
-(IBAction) toNote{
    CLLocation *currentLocation = mapView.userLocation.coordinate;

    CLLocationCoordinate2D tmpCoordinate;
    MyAnnotation * anno1 = [MyAnnotation new];
    anno1.title = @"Hospital";
    anno1.subtitle = @"National US Hospital";
    tmpCoordinate.latitude = currentLocation.latitude+ 0.005;
    tmpCoordinate.longitude = currentLocation.longitude + 0.005;
    anno1.coordinate = tmpCoordinate;

    MyAnnotation * anno2 = [MyAnnotation new];
    anno2.title = @"School";
    anno2.subtitle = @"National Elementary School";
    tmpCoordinate.latitude = currentLocation.latitude- 0.005;
    tmpCoordinate.longitude = currentLocation.longitude- 0.005;
    anno2.coordinate = tmpCoordinate;

    if(mapView.userLocationVisible){
        CLLocationCoordinate2D coordination =
mapView.userLocation.coordinate;
        MKCoordinateSpan mySpan = {0.05f, 0.05f};
        MKCoordinateRegion toRegion = {coordination, mySpan};
        [mapView setRegion:toRegion animated:YES];
        [mapView addAnnotation:anno1];
        [mapView addAnnotation:anno2];
    }
}
```


Step 11. Run (⌘+R)

一開始的GPS定位點預設為Apple公司所在地Cupertino，在按下Note後就會Zoom In並加入我們兩個Annotation，點入即可看到我們加入的title和subtitle。

