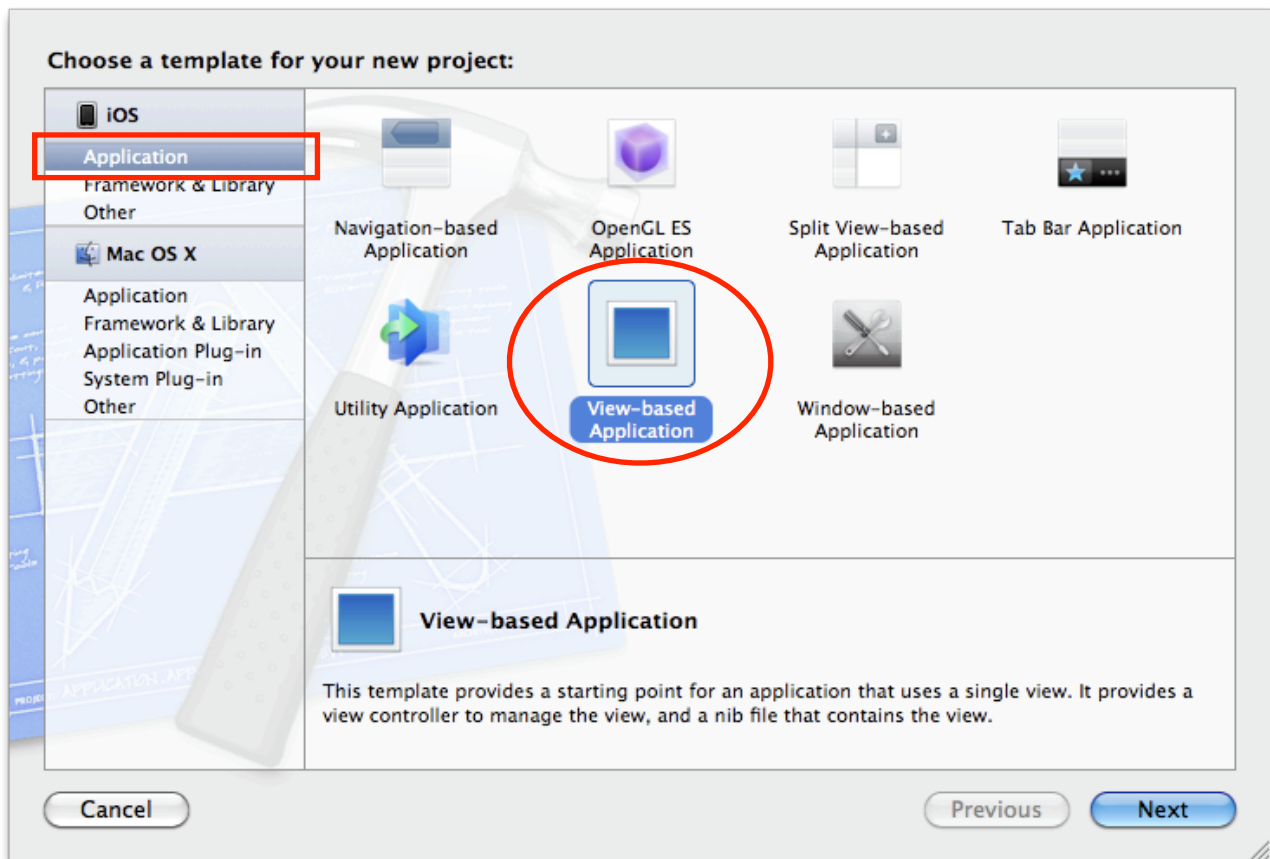# Lab Interface Builder Design

Step 1. 開啓Xcode, 選擇 File > New > New Project 來開啓一個新的專案

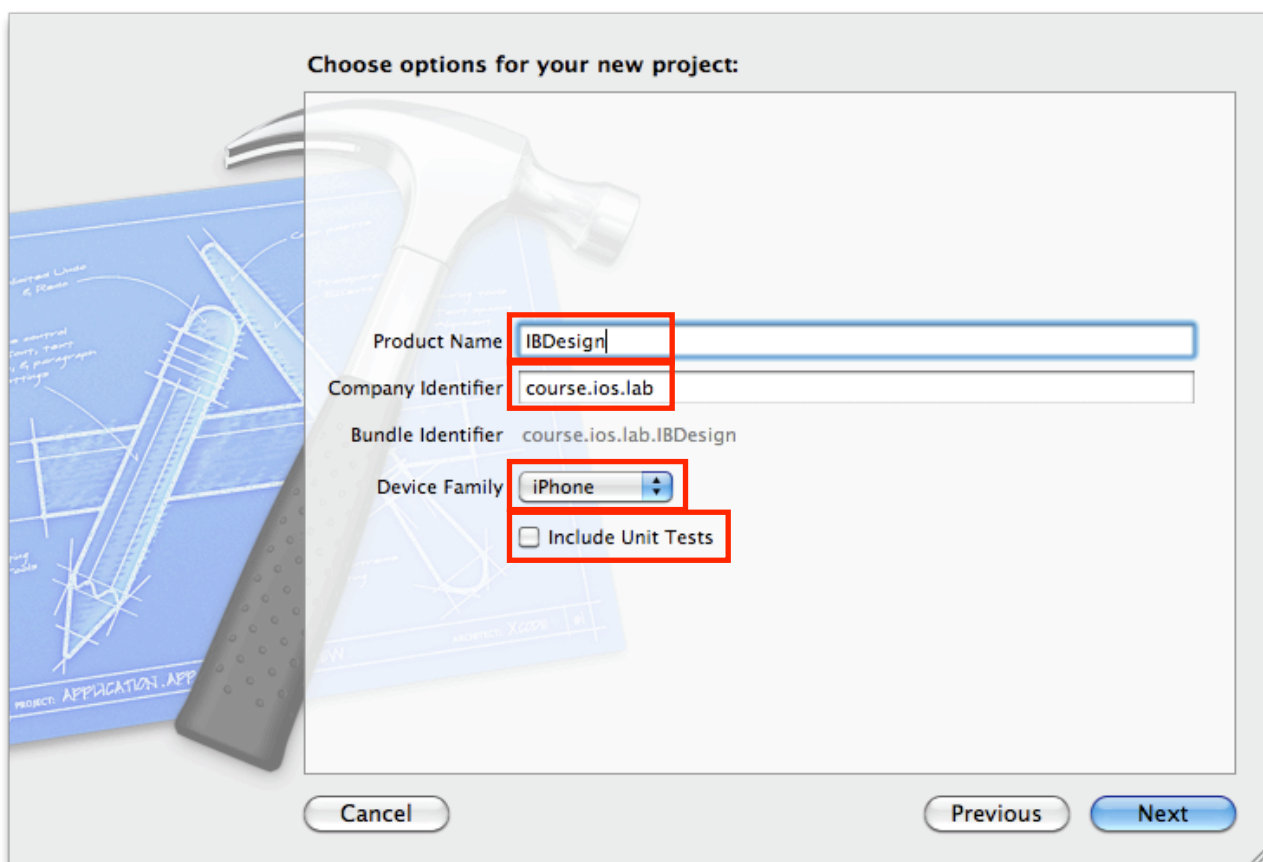Step 2. 我們選擇iOS裡的Application這個分類裡已經內建好view和view controller的View-Based Application
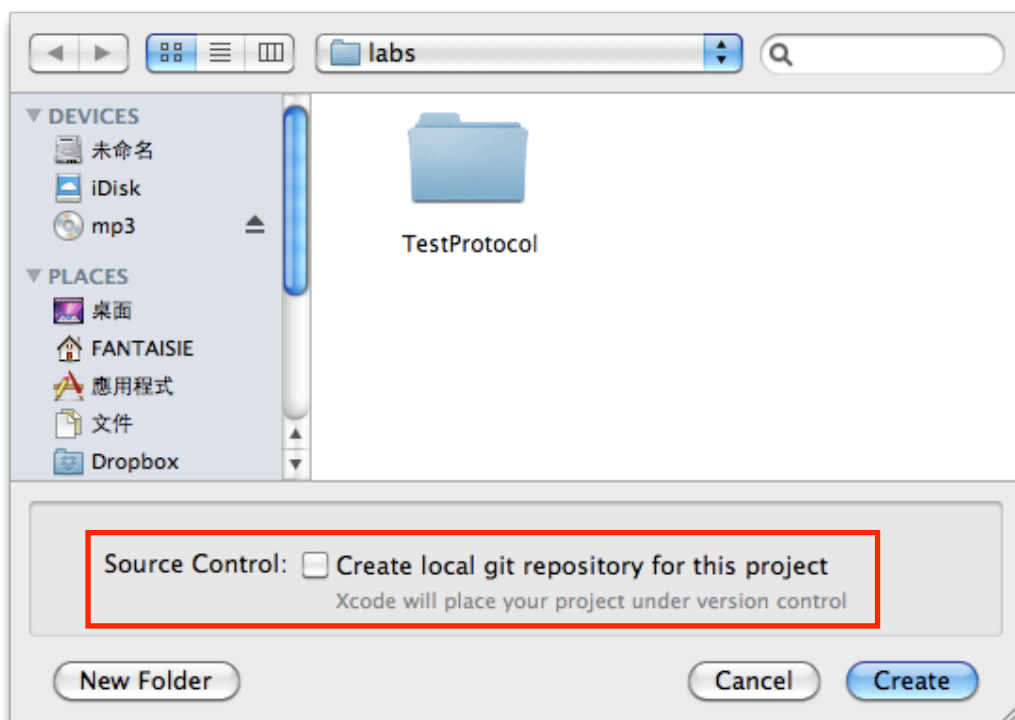
Step 3. 並將此專案命名為**IBDesign**

Company Identifier是填入Bundle的名稱,在此統一填入**course.ios.lab** (也可自行填入)
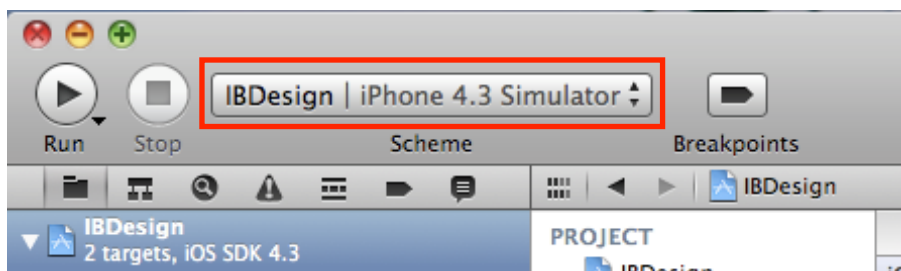
Device Family選擇**iPhone**

Include Unit Tests是做語意邏輯測試用,可勾選也可不勾選,在此我們統一**不勾選**.

Step 4.選擇存檔的位置, 在此我們不做version control,統一不勾選Create local git repository for this project
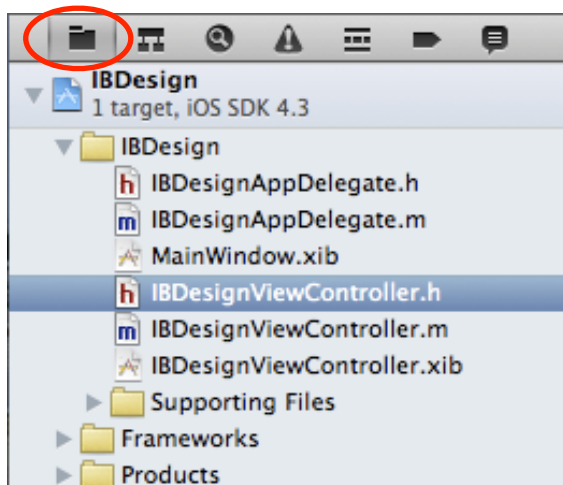
Step 5. IBDesign專案被開啟,注意我們是使用iPhone 4.3 Simulator

Step 6. 從左方視窗的Show the Project navigator裡的IBDesign資料夾下開啟

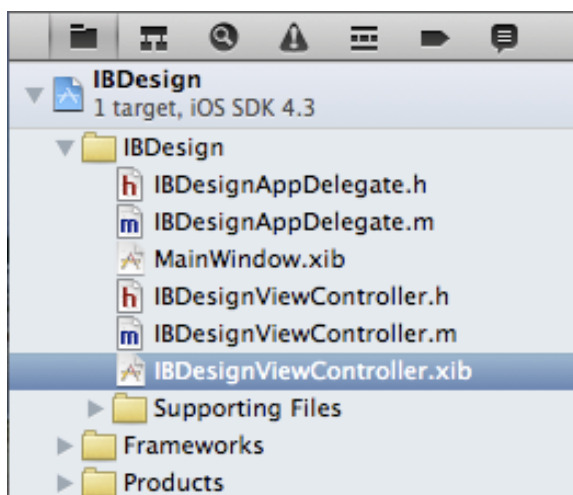IBDesignViewController.h,加入兩個UI元件**button**和**label,**和一個IBAction的Method **clicked**


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

@interface IBDesignViewController : UIViewController {
    IBOutlet UIButton *button;
    IBOutlet UILabel *label;
}

-(IBAction) clicked;

@end
```
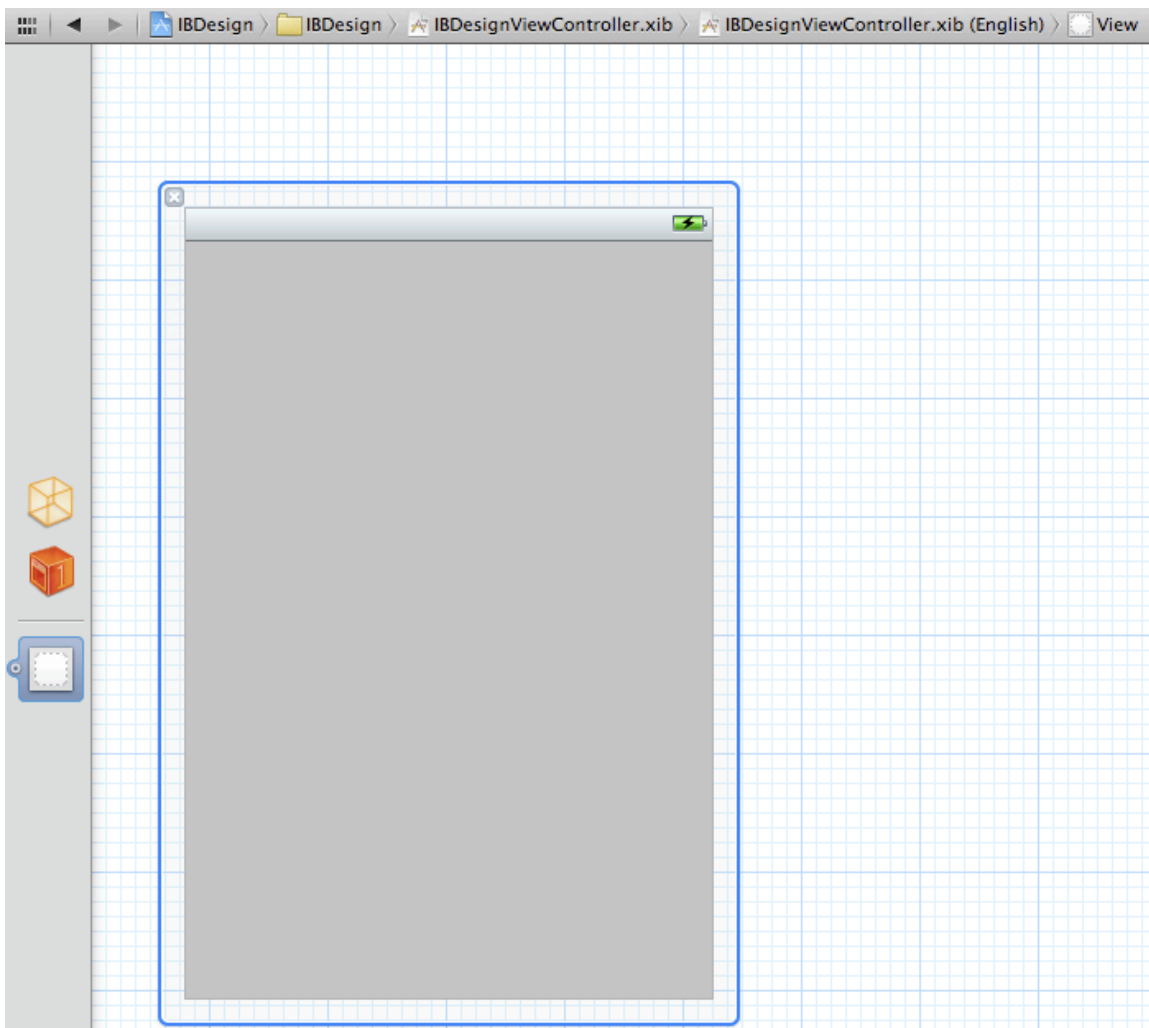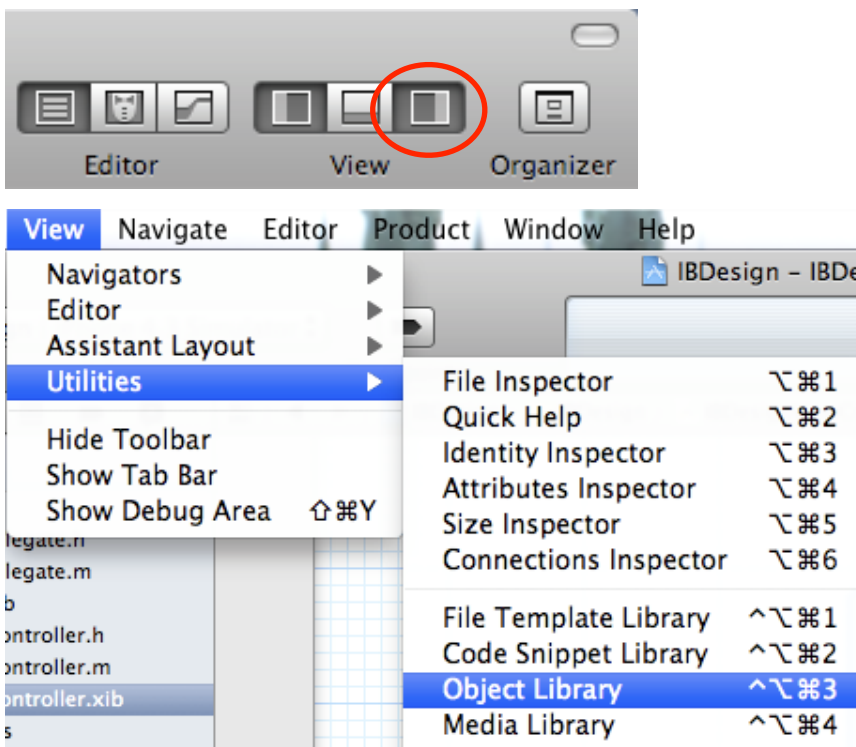
Step 7. 從左方視窗的Show the Project navigator裡的IBDesign資料夾開啟
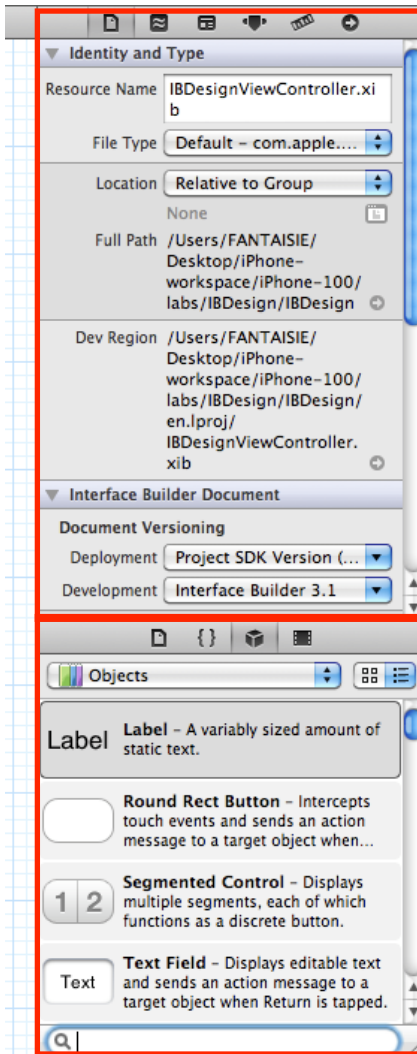IIBDesignViewController.xib來建構GUI
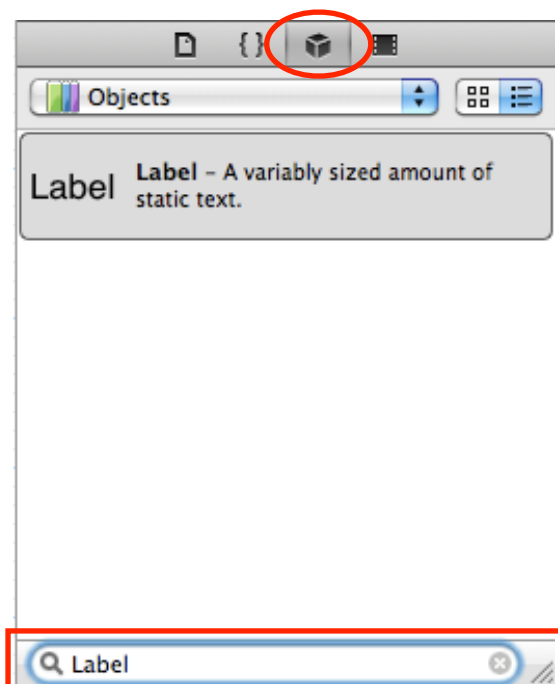
開啟後會出現一個對應iPhone視窗的View視窗

Step 8. 在Xcode視窗右上角選擇顯示視窗點下View右邊按鍵,或是View > Utilities 裡選擇任意選擇一個選項即會打開這個視窗分頁,在此選擇Object Library來方便選擇和新增UI元件
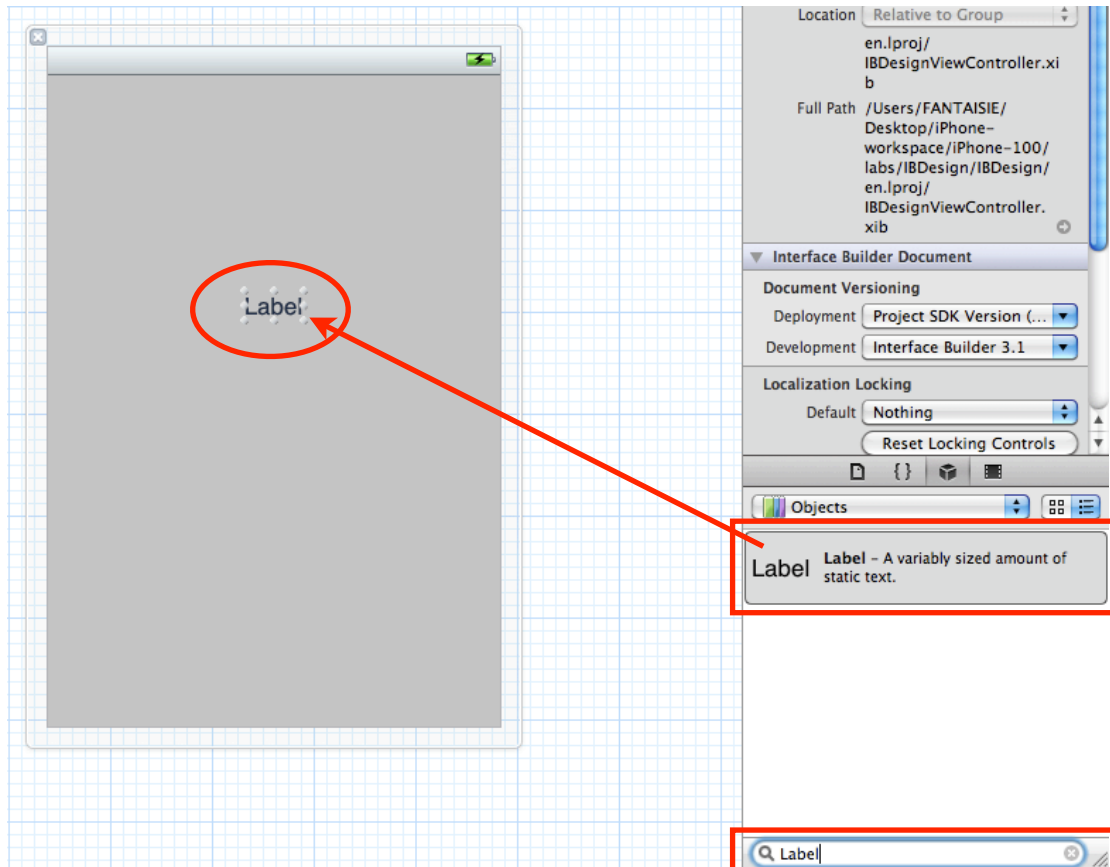
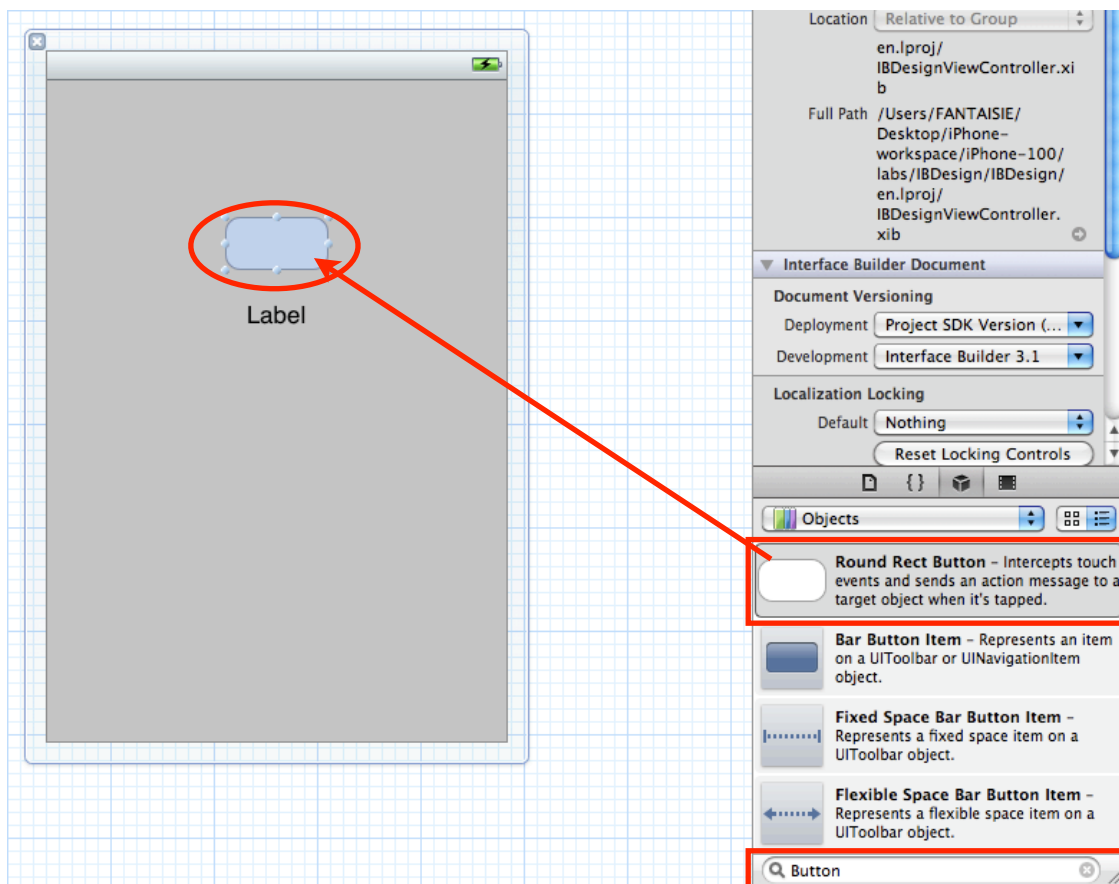在主視窗分頁就開啓一個右邊的視窗分頁,上面是一些Inspector,下面是一些Library

Step 9. 在下方(記得選擇Show the Object library)搜尋Label來加入一個標籤並拖曳到View視窗來建構一個UILabel元件
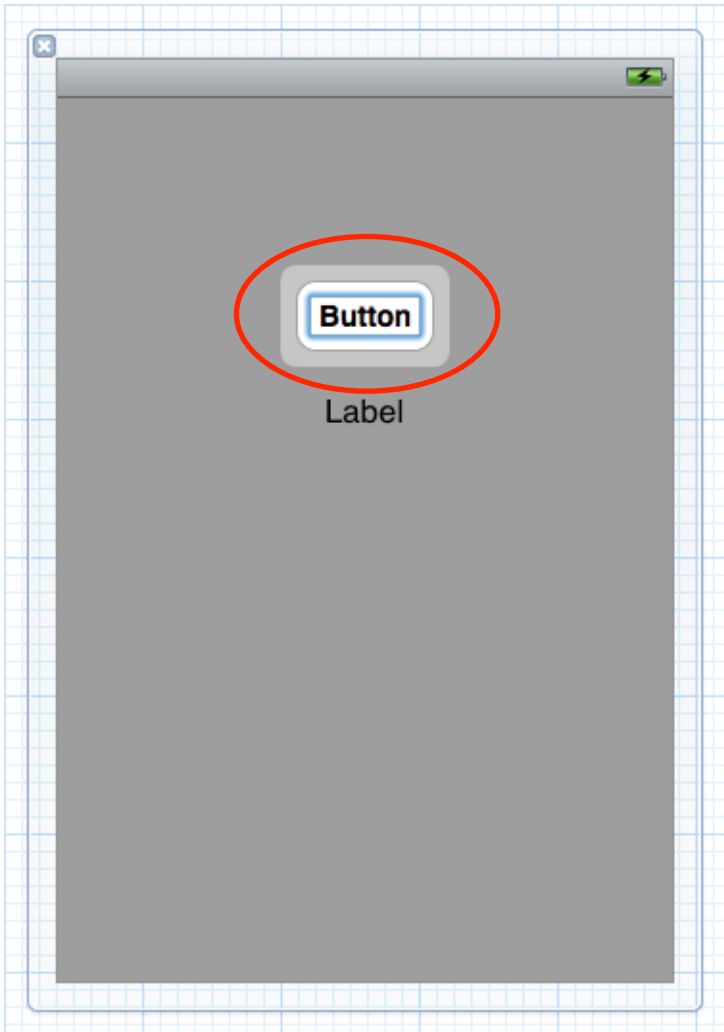
拖拉到主視窗的View中

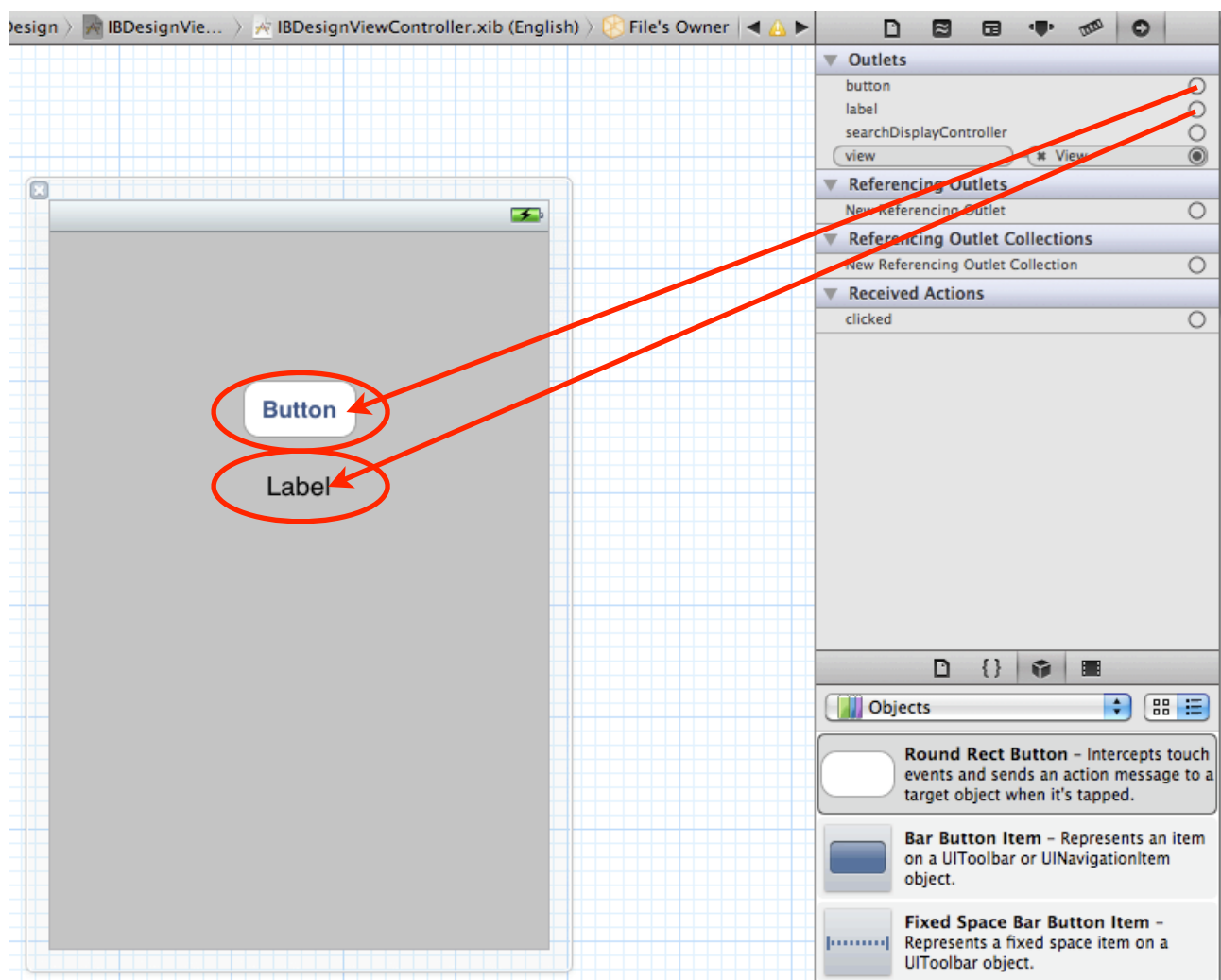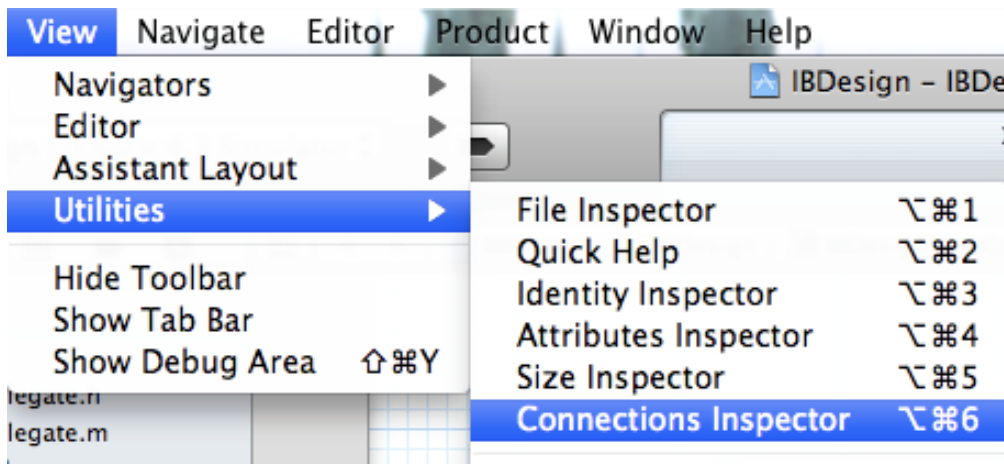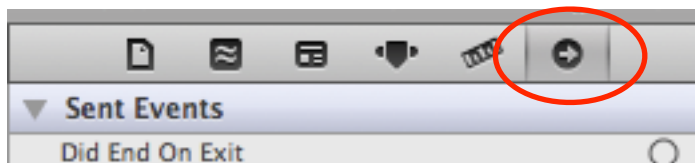Step 10. 搜尋Button並拖曳到View視窗來建構一個Button元件,選擇Round Rect Button

Step 11. 將按鍵的Title命名為Button

Step 12. 在IBDesignViewController.xib的視窗分頁左邊選擇File's Owner,來開啟File's Owner的Inspector
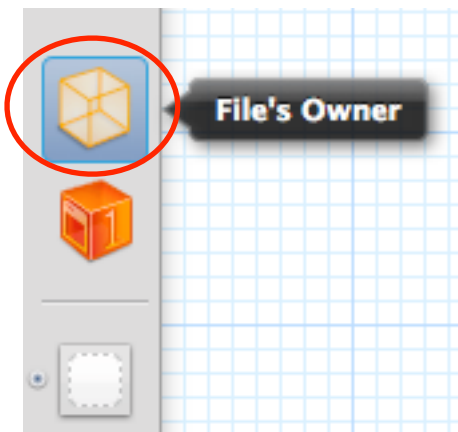
並在Inspector視窗裡選擇Show the Connections inspector或是在View > Utilities裡選擇
Connections inspector, 可見到我們新加的兩個元件**button**和**label**和新加的Method **clicked**,
把新加的元件和View上的元件做連結

連結後結果如下
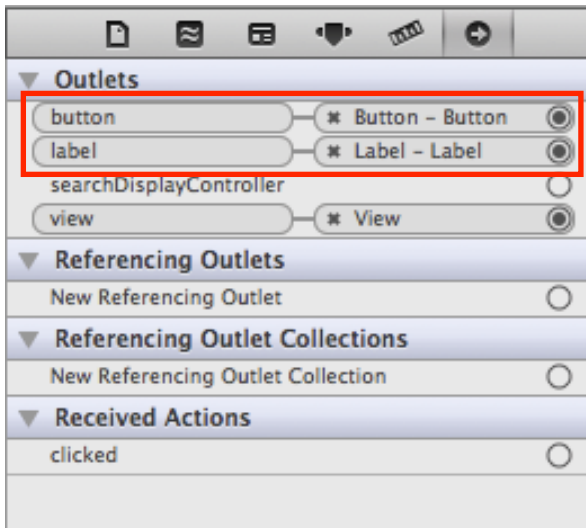
Step 13. 將Received Actions裡的"clicked"連結到按鍵"Button"並選擇Touch Up Inside
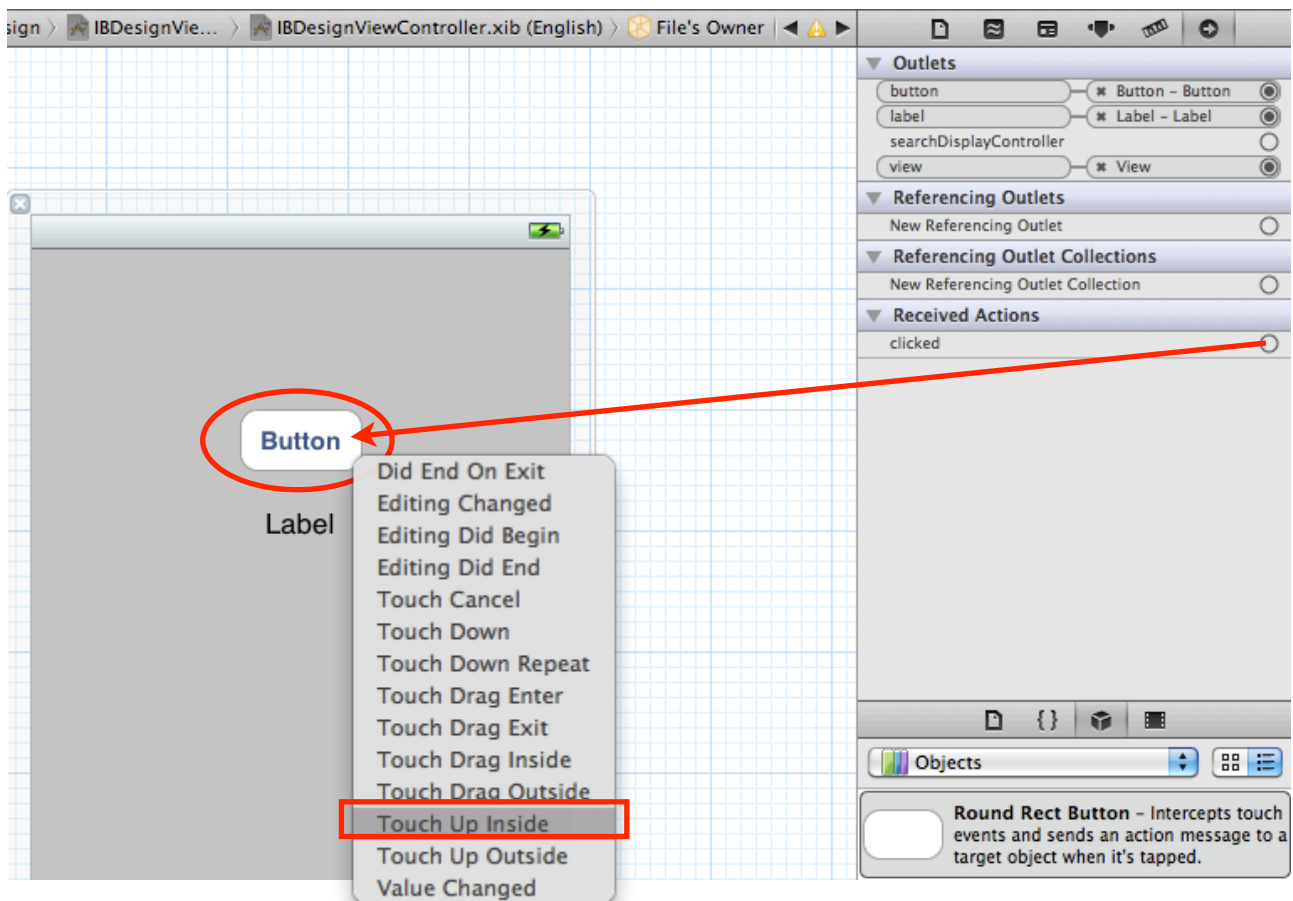
Step 14. 從左方視窗的Show the Project navigator裡的IBDesign資料夾下的 IBDesignViewController.m加入如下**clicked**裡的程式

```
#import "IBDesignViewController.h"

@implementation IBDesignViewController

- (IBAction) clicked
{
    NSLog(@"button clicked");
}
```

Step 15. 主畫面左上方執行Run (或是⌘+R) 來執行編譯和模擬

若編譯成功會出現跳出pop-up視窗

Step 16. 由View裡中間的button開啟包含Console的Debug Area,或是在 View>Show Debug Area 來開啟Console

若按按鍵"Button"可由Console內看到印出的資訊


```
GNU gdb 6.3.50-20050815 (Apple version gdb-1518) (Sat Feb 12 02:52:12 UTC 2011)
Copyright 2004 Free Software Foundation, Inc.
GDB is free software, covered by the GNU General Public License, and you are
welcome to change it and/or distribute copies of it under certain conditions.
Type "show copying" to see the conditions.
There is absolutely no warranty for GDB.  Type "show warranty" for details.
This GDB was configured as "x86_64-apple-darwin".Attaching to process 1263.
2011-03-19 13:29:52.940 IBDesign[1263:207] button clicked
2011-03-19 13:29:53.124 IBDesign[1263:207] button clicked
2011-03-19 13:29:53.315 IBDesign[1263:207] button clicked
2011-03-19 13:29:53.507 IBDesign[1263:207] button clicked
2011-03-19 13:29:53.731 IBDesign[1263:207] button clicked
```
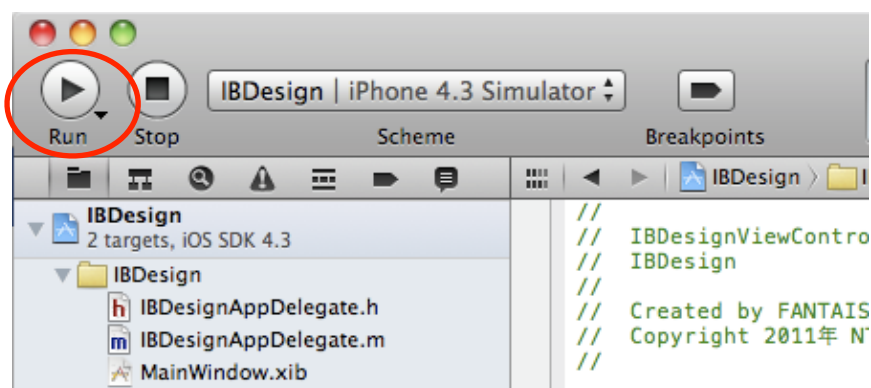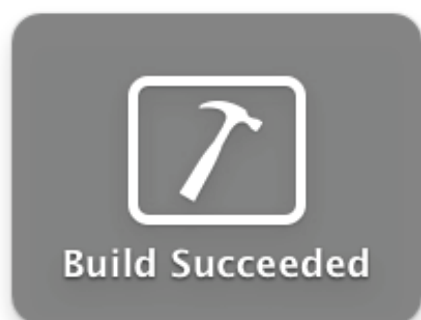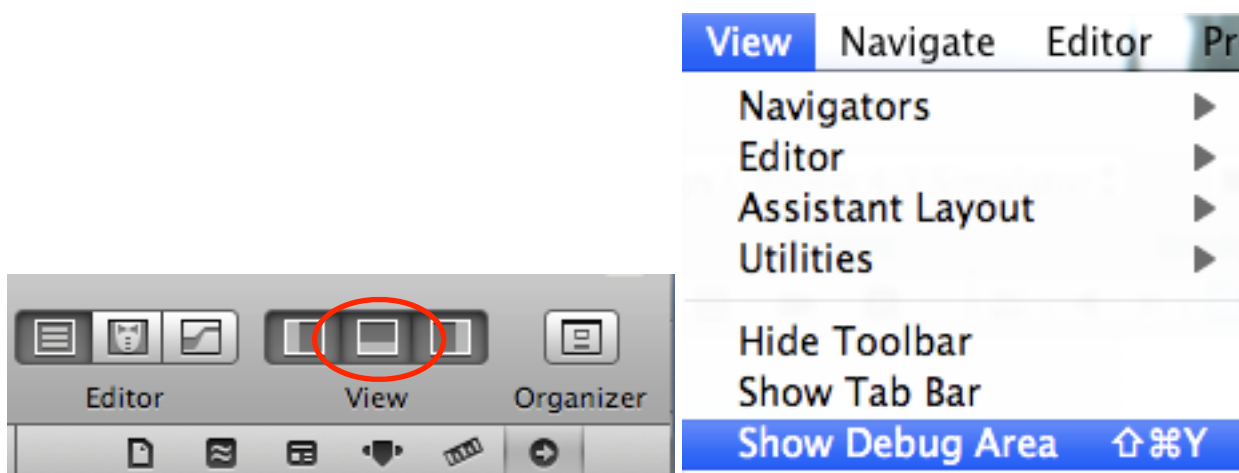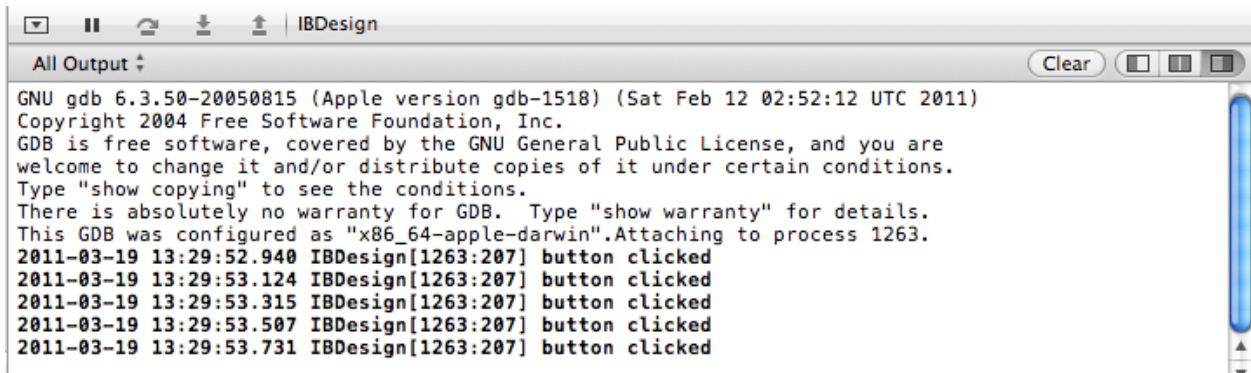
Step 17. 若要由標籤"Label"印出資訊,我們加入一行程式改變label的文字

```objc
#import "IBDesignViewController.h"

@implementation IBDesignViewController

- (IBAction) clicked
- {
    NSLog(@"button clicked");
    label.text = @"Hello!!";
}
```

Step 18. 模擬結果如下