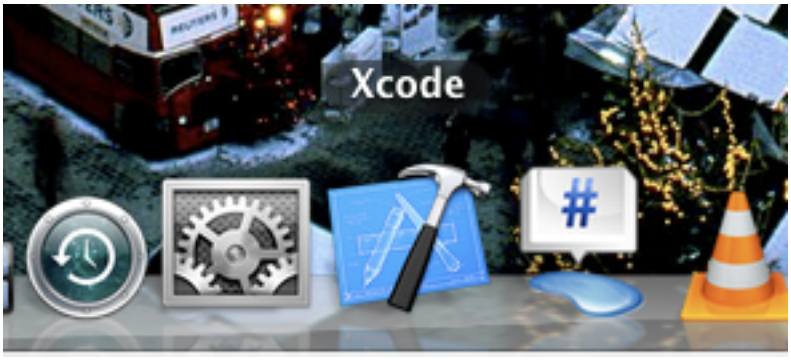
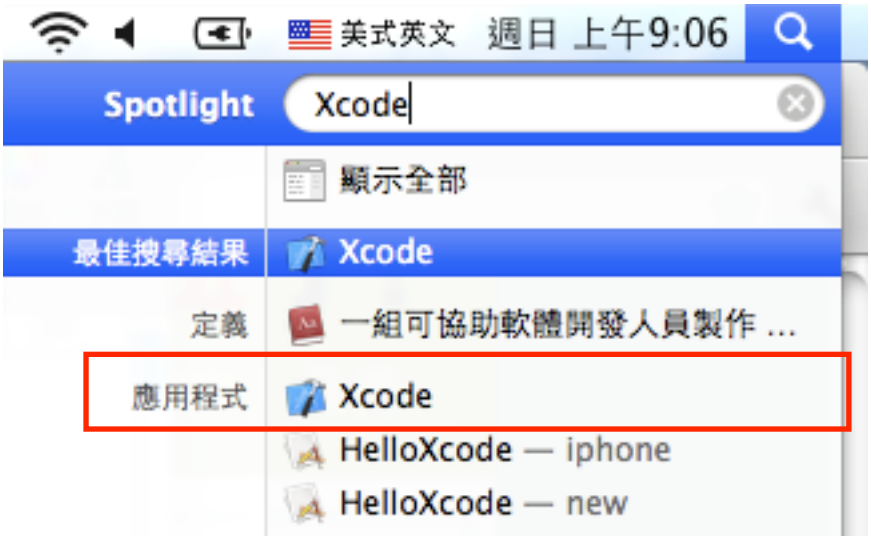
Lab Interface Builder Design

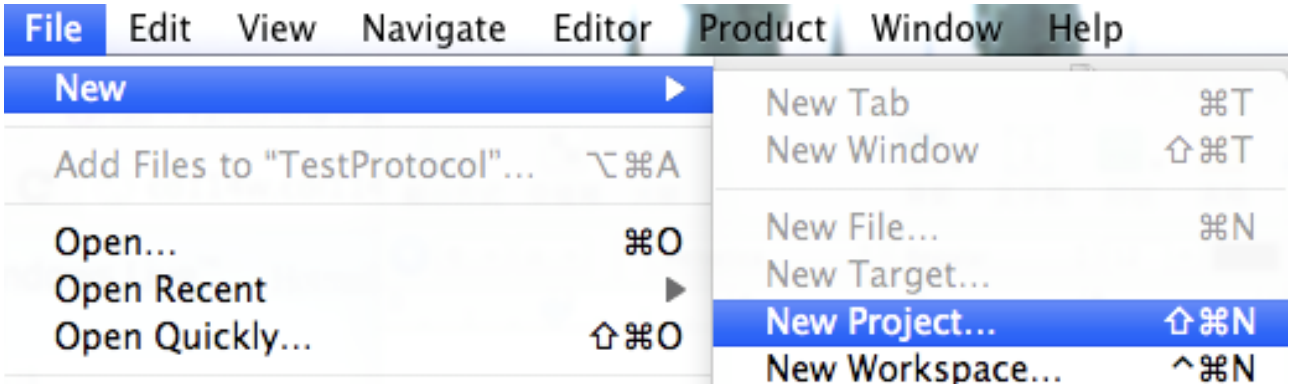
Step 1. Open Xcode from the dock.



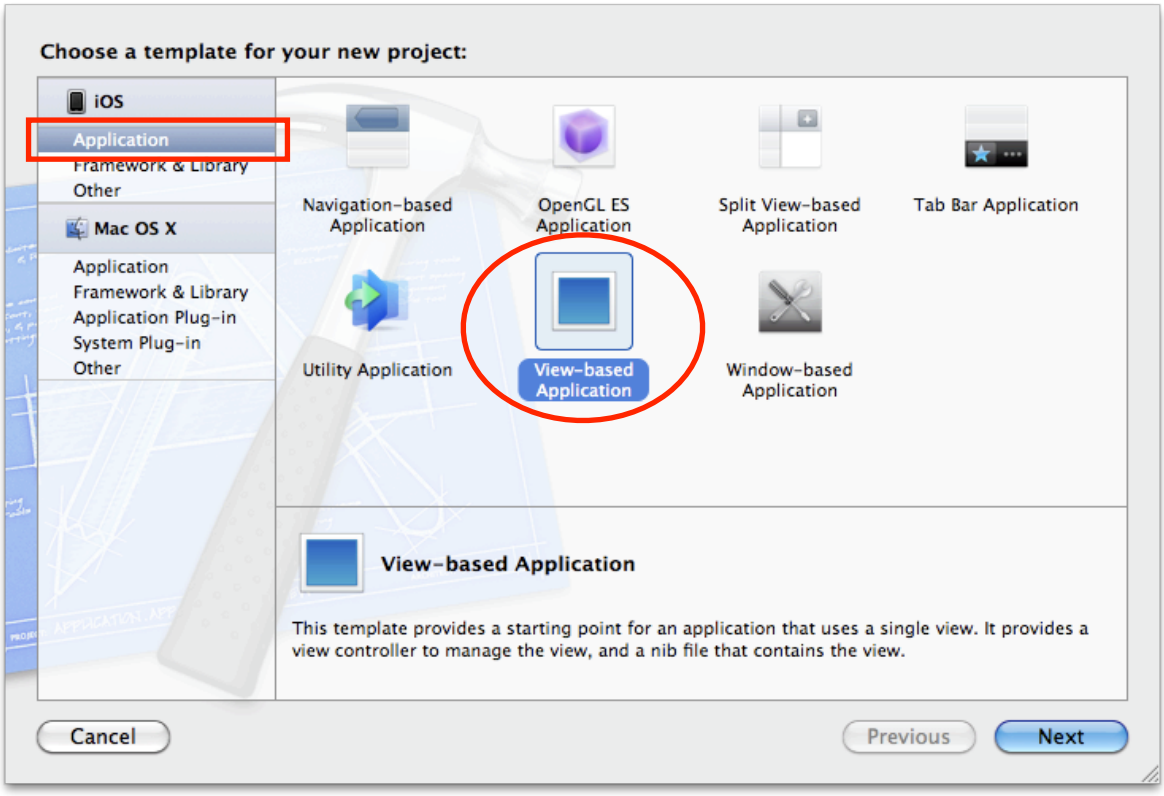
Or search Xcode application from Spotlight on the top right-hand corner of desktop, and then open it.



Step 2. Click on the tab **File > New > New Project** to create a new project.



Step 3. In the category “**Application**” for **iOS**, choose the “**View-Based Application**” that already created a view and corresponding view controller in advance.

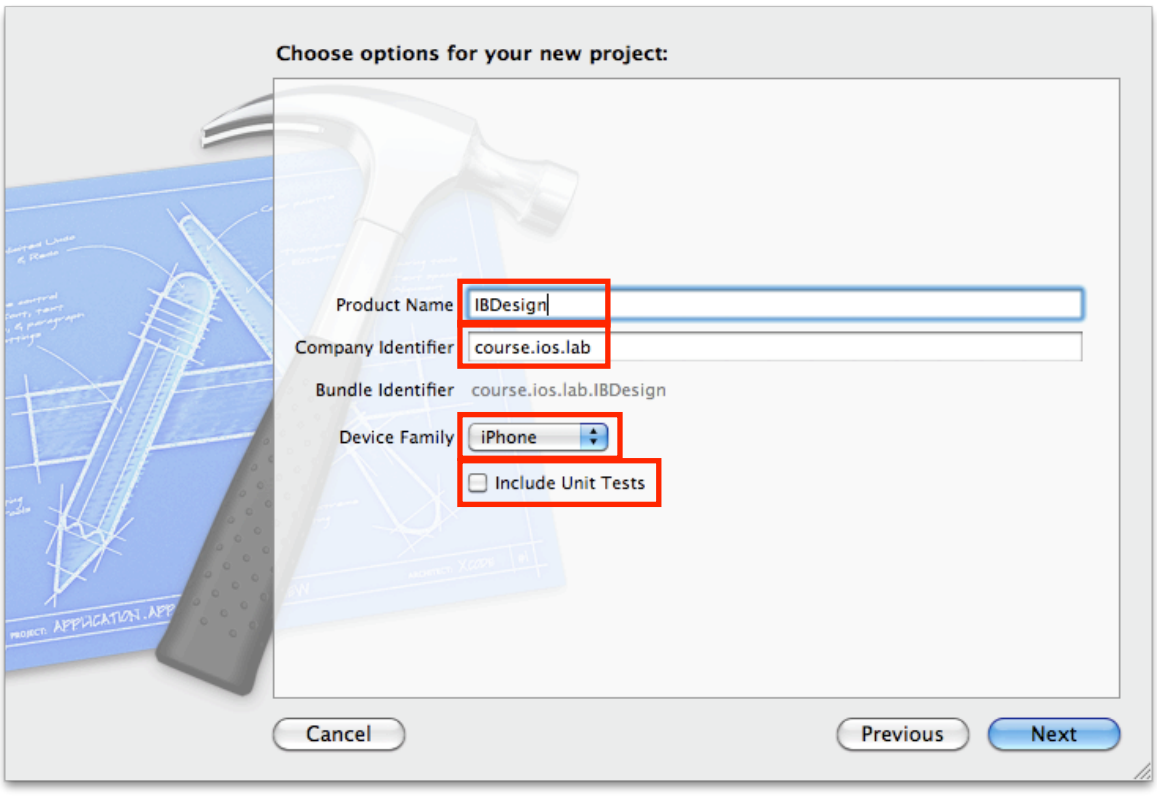


Step 4. Name this project “ **IBDesign** “

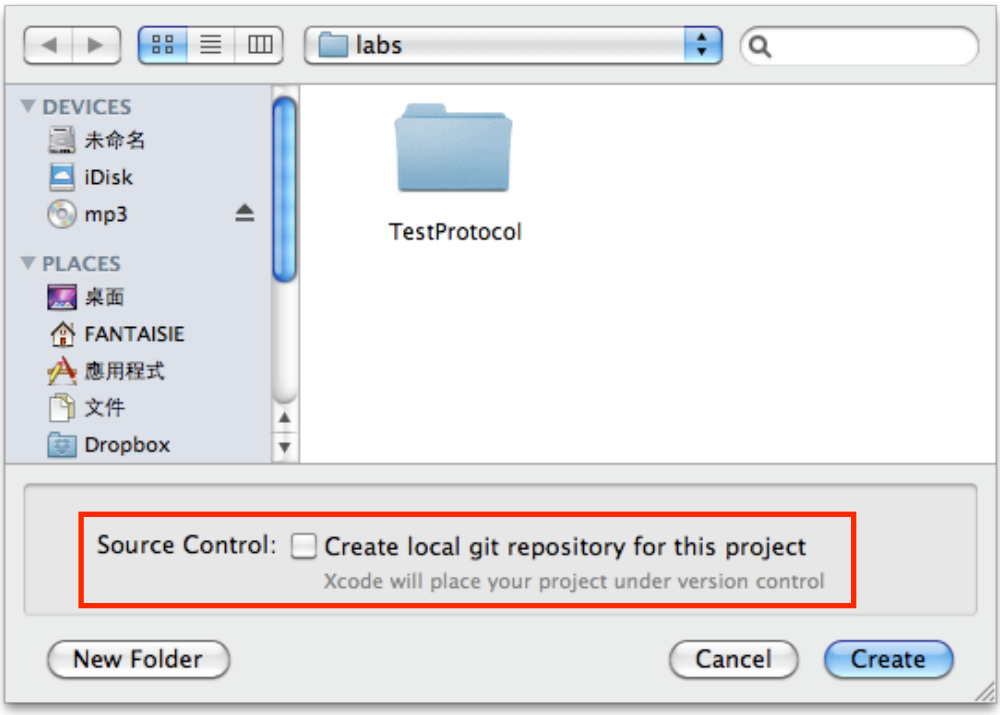
Fill in the column “Company Identifier” with “**course.ios.lab**”, which defines the name of current bundle of code

Choose the Device Family “**iPhone**”

“Include Unit Tests” is for logical tests. Do not check here.

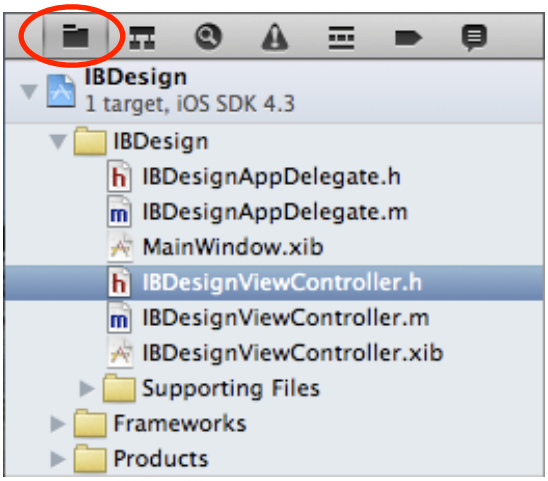


Step 5. Choose the location/directory to save this project. Do not check “Create local git repository for this project” that create a git repository for version control.



Step 6. Now the project of IBDesign is already created and opened. Note it is “iPhone 4.3 Simulator” for simulations.

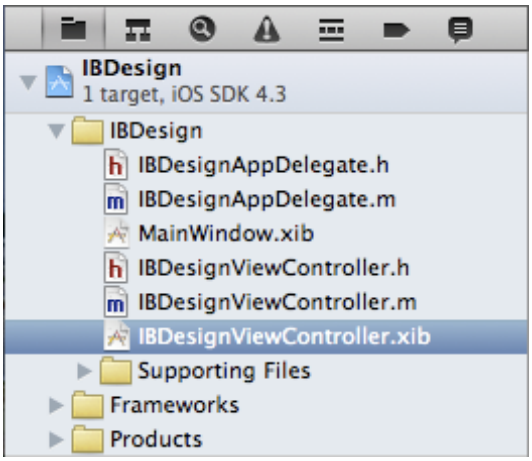
Step 7. Open the window of “Show the Project navigator” on the top left-hand side of main window of Xcode, and choose “**IBDesignViewController.h**” in the group directory of IBDesign.



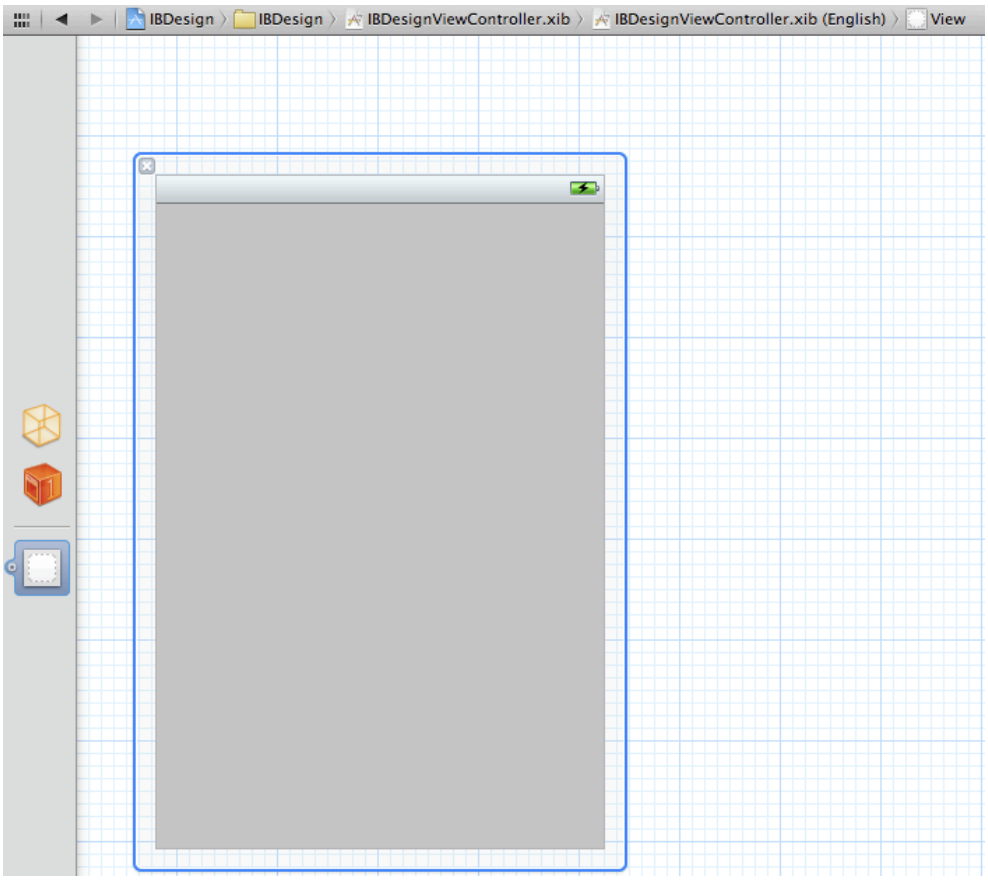
Add 2 UI elements: 1 **UIButton** and 1 **UILabel**, and 1 IBAction Method named **clicked** to response to the click event of UIButton

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

@interface IBDesignViewController : UIViewController {
    IBOutlet UIButton *button;
    IBOutlet UILabel *label;
}
-(IBAction) clicked;

@end
```

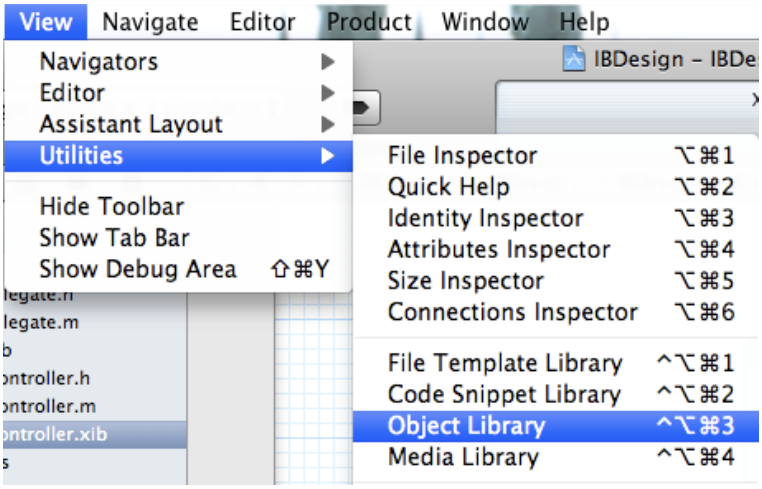
Step 8. Similarly, open the file "**IIBDesignViewController.xib**" in "Show the Project navigator" to build the GUI.



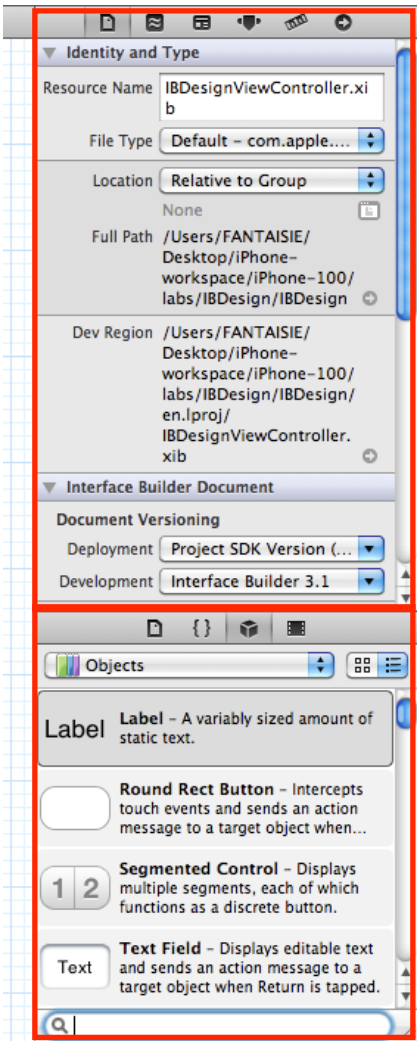
The main view corresponding to the view on iPhone screen shows in the middle of Xcode



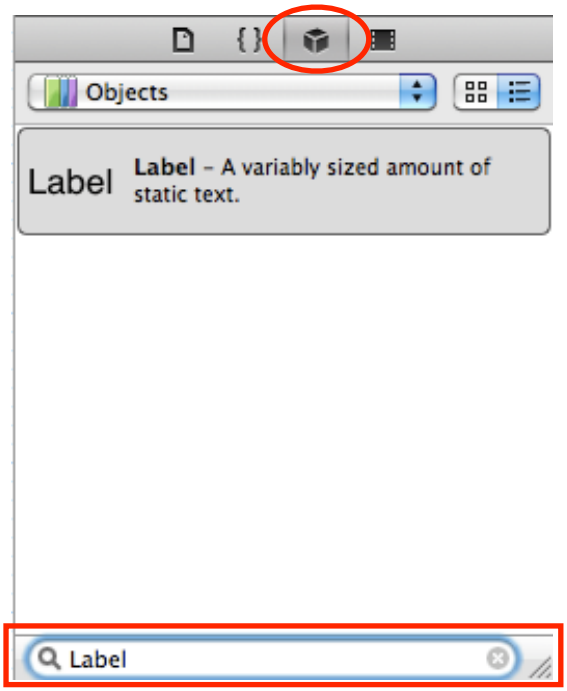
Step 9. Click on the right button of button group for selecting views show in Xcode IDE, or click on the tab **View > Utilities** to open this sub-window. You may select "**Object Library**" to search and add Ui elements by simply drag it to the view.



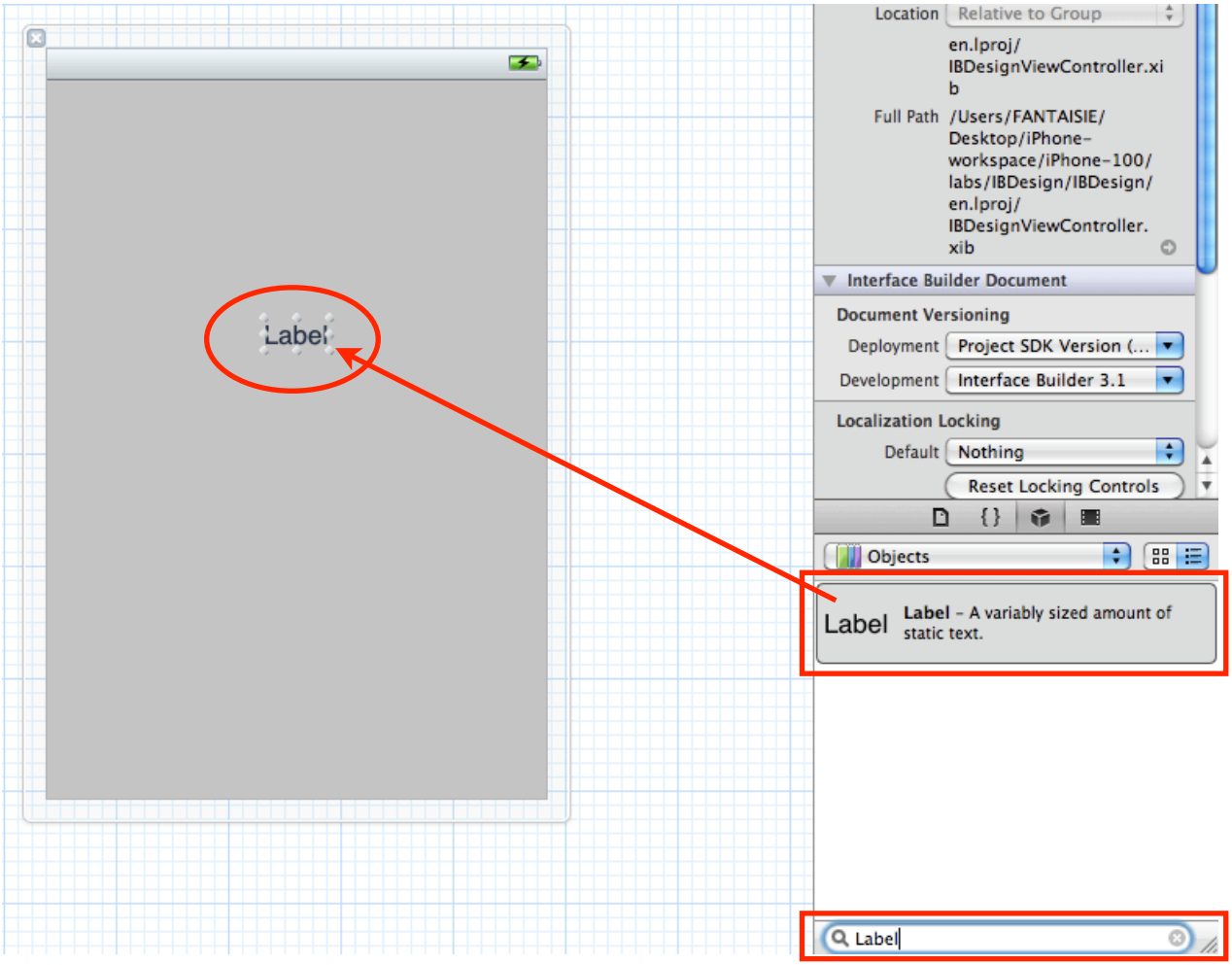
This sub-window includes setting and description of Inspectors on the top, and Libraries on the bottom.



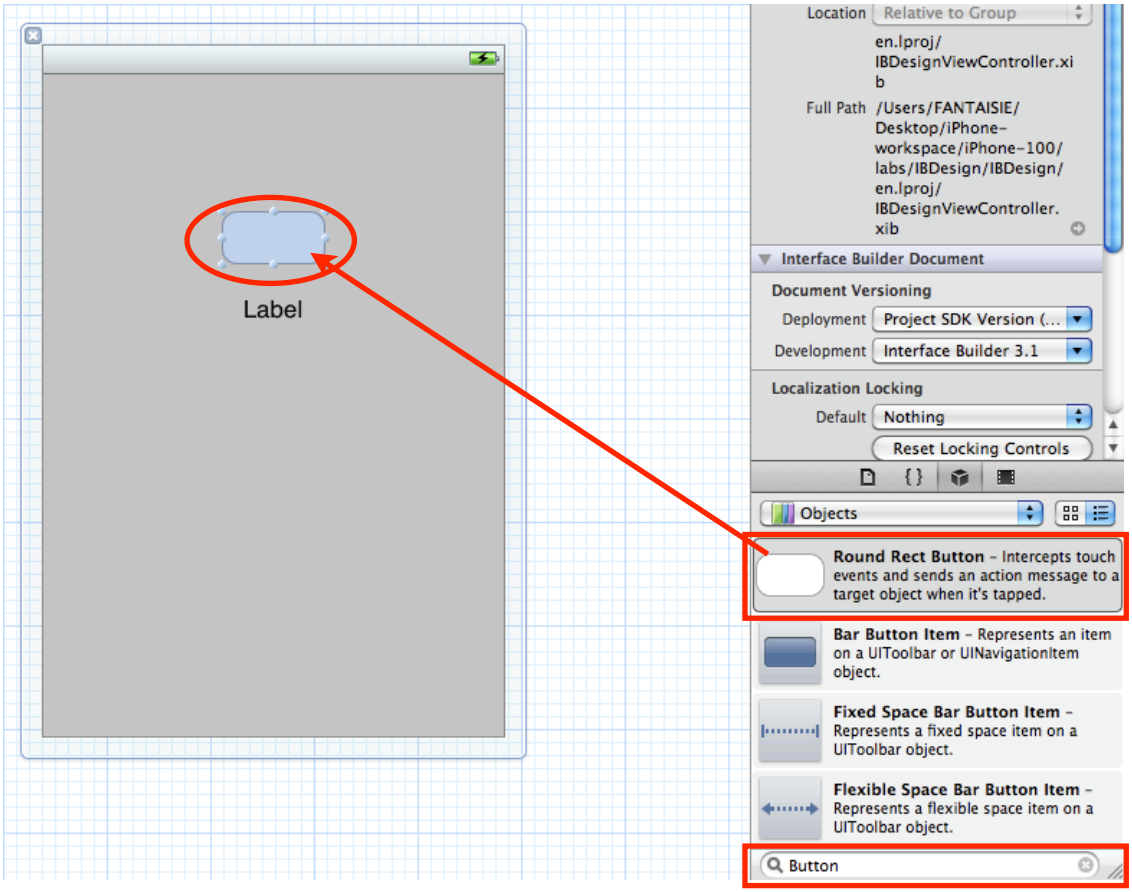
Step 10. In “Show the Object library”, search an **UILabel** and drag it to the main view to build a UILabel element on it.



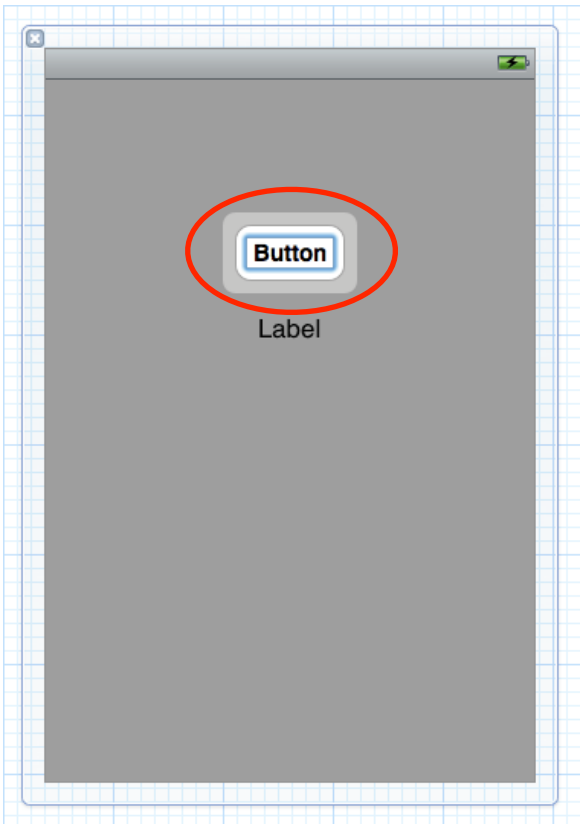
Drag it to the main View



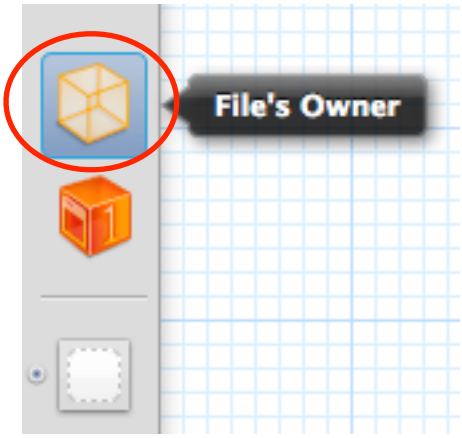
Step 11. Similarly, search an **Round Rect UIButton** and drag to the View to build an UIButton element.



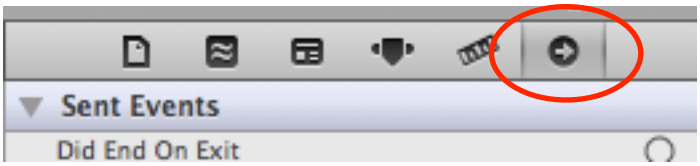
Step 12. Name the Title of the UIButton "**Button**"

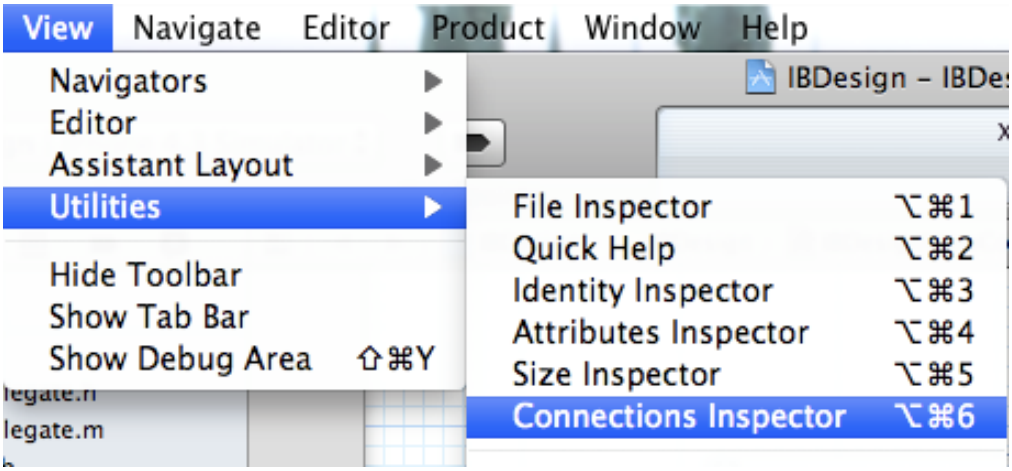


Step 13. Click on the icon of File's Owner on the left-hand side of the sub-window of IBDesignViewController.xib to open the Inspector of File's Owner.

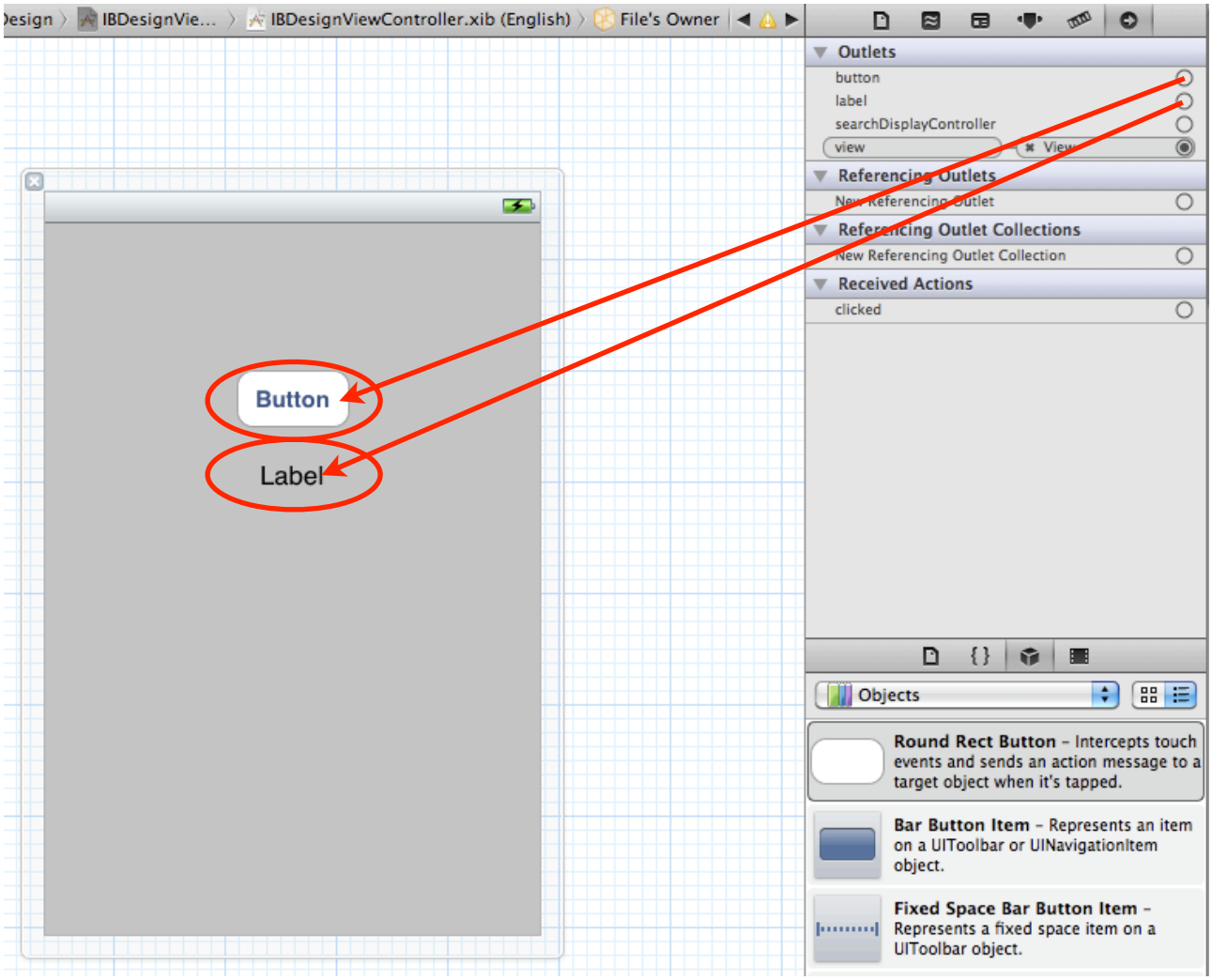


Select "Show the Connections inspector" In the sub-window of Inspector, or View > Utilities > Connections inspector to show 2 elements - **button** and **label** and IBAction Method **clicked** that all previously declared in IBDesignViewController.h.

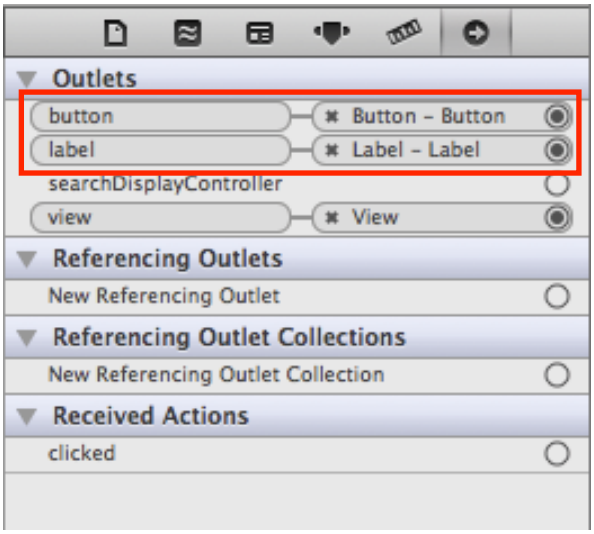




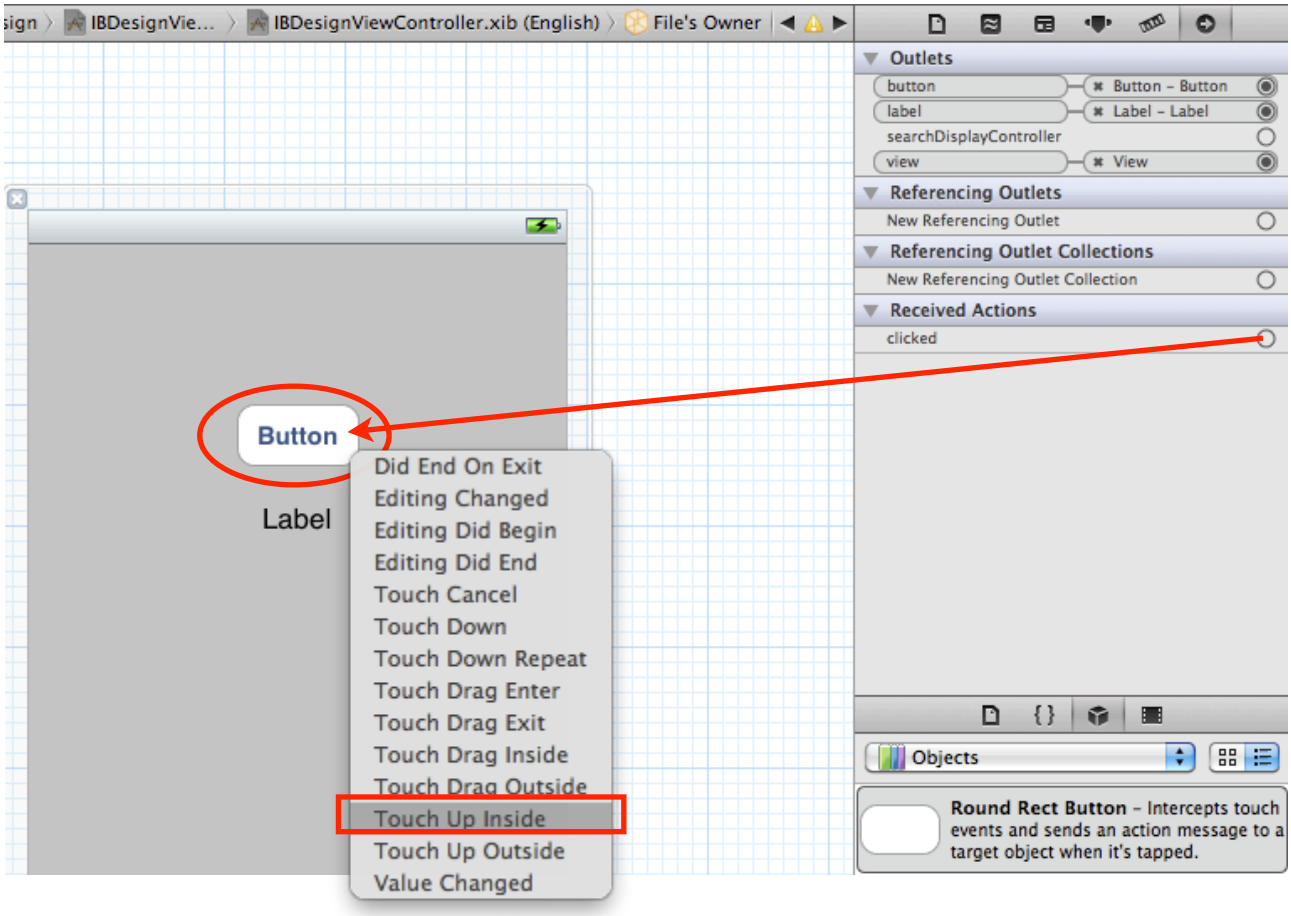
Connect these 2 UI elements to the UI elements drawn on the View.



The result after connections



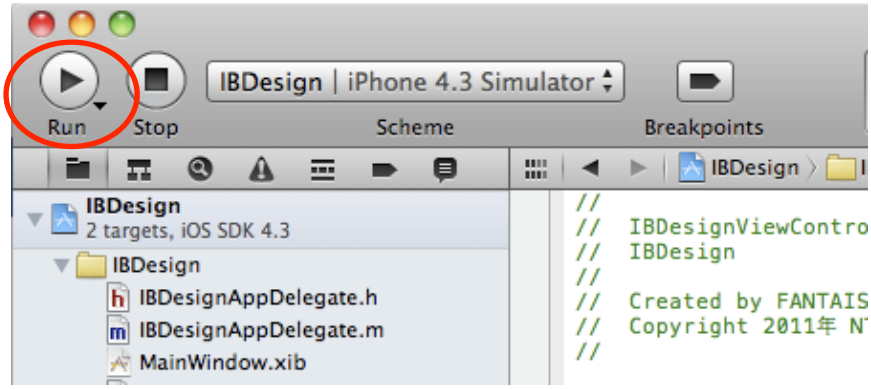
Step 14. In the column “Received Actions”, click and drag the IBAction method ”**clicked**” to the UIButton ”**Button**”. Choose the touch event “**Touch Up Inside**” for triggering.



Step 15. In “Show the Project navigator”, open the file “**IBDesignViewController.m**” down the IBDesign group directory. Add the code for method **clicked** as following below:

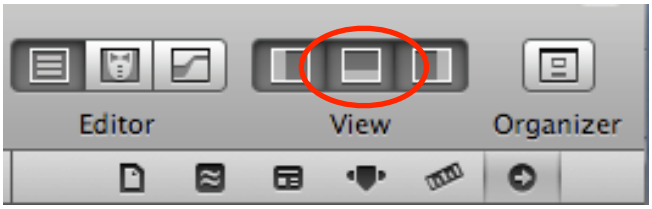
```
#import "IBDesignViewController.h"

@implementation IBDesignViewController

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

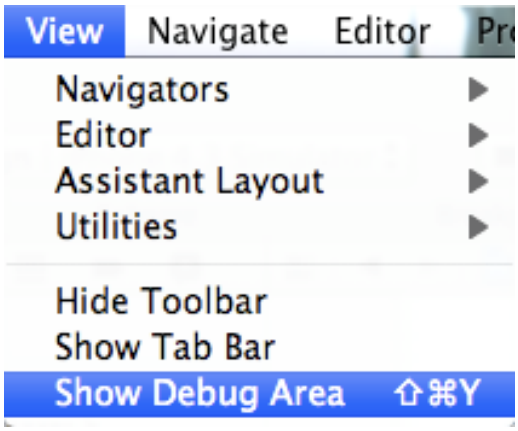
Step 16. Click **Run** on the top left-hand side of Xcode IDE (hot key ⌘**+R**) to build this project and simulate



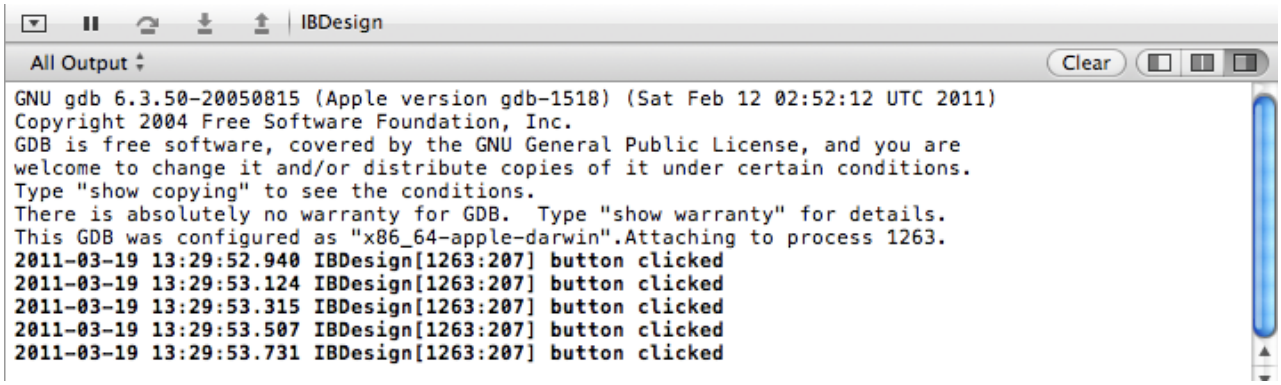
If build is succeeded a window of “Build Succeeded” will pop up

Step 17. Click the middle button of button group “View” to open the sub-window that includes the Console and Debug Area, or **View>Show Debug Area** to open it.





The text “button clicked” is printed in the Console if Button is clicked.



Step 18. If you would like to print the information on the label or change the text of the label, one line should be added to the method “clicked” to change the text.

```
#import "IBDesignViewController.h"

@implementation IBDesignViewController

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

The result