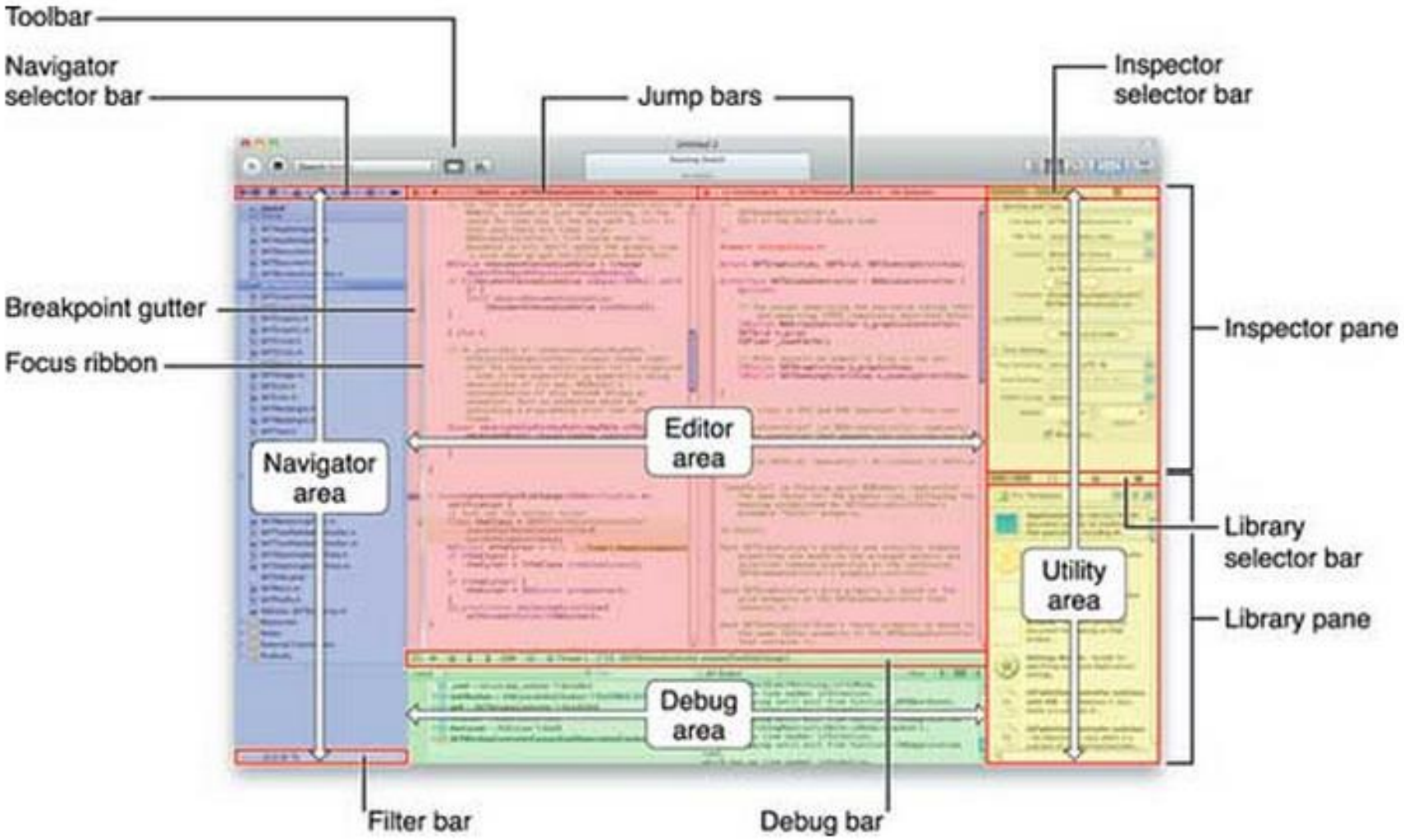
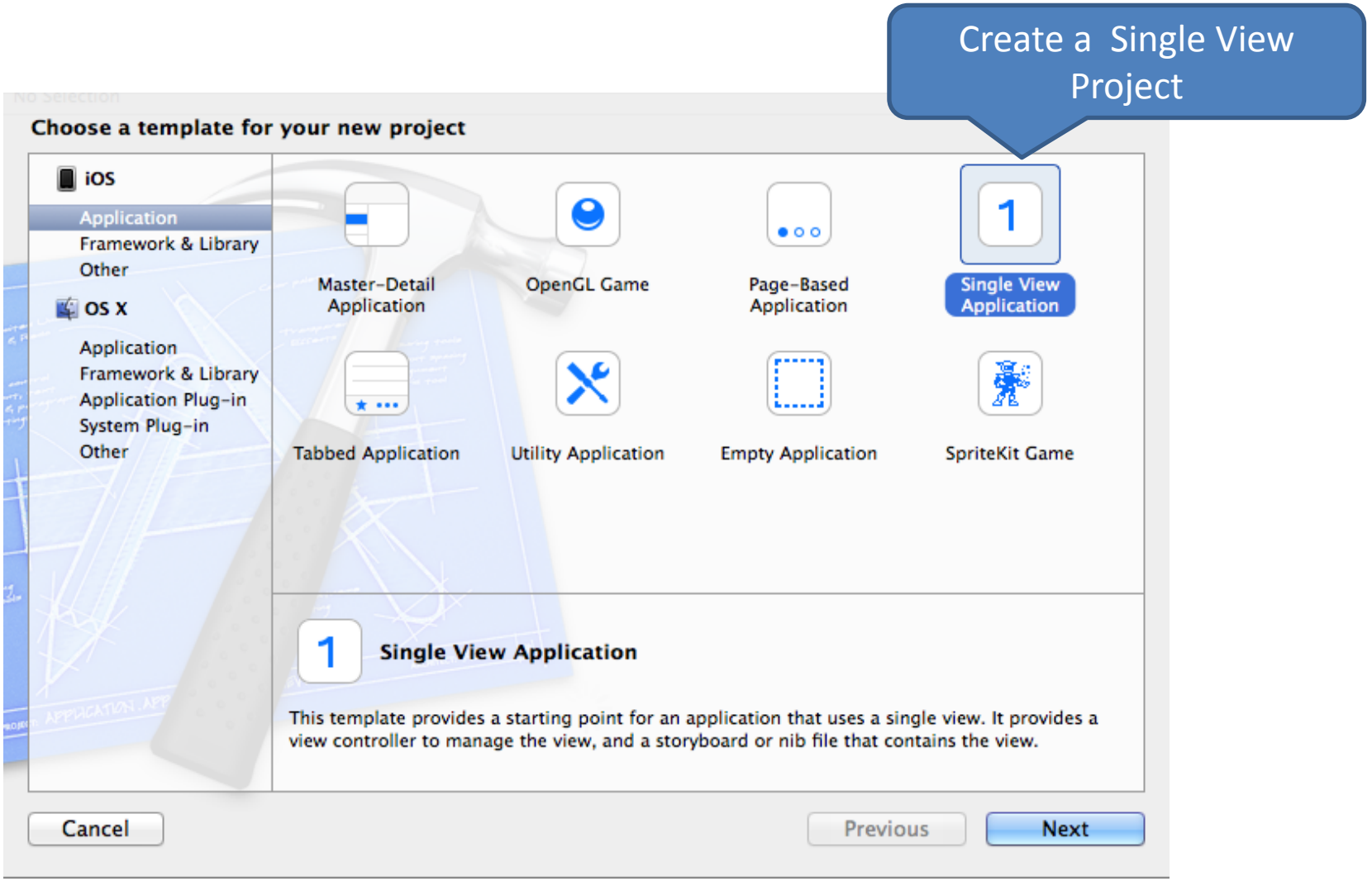
iPhone Apps Development using Objective C & Xcode (Lesson 3)

By Dannis Mok

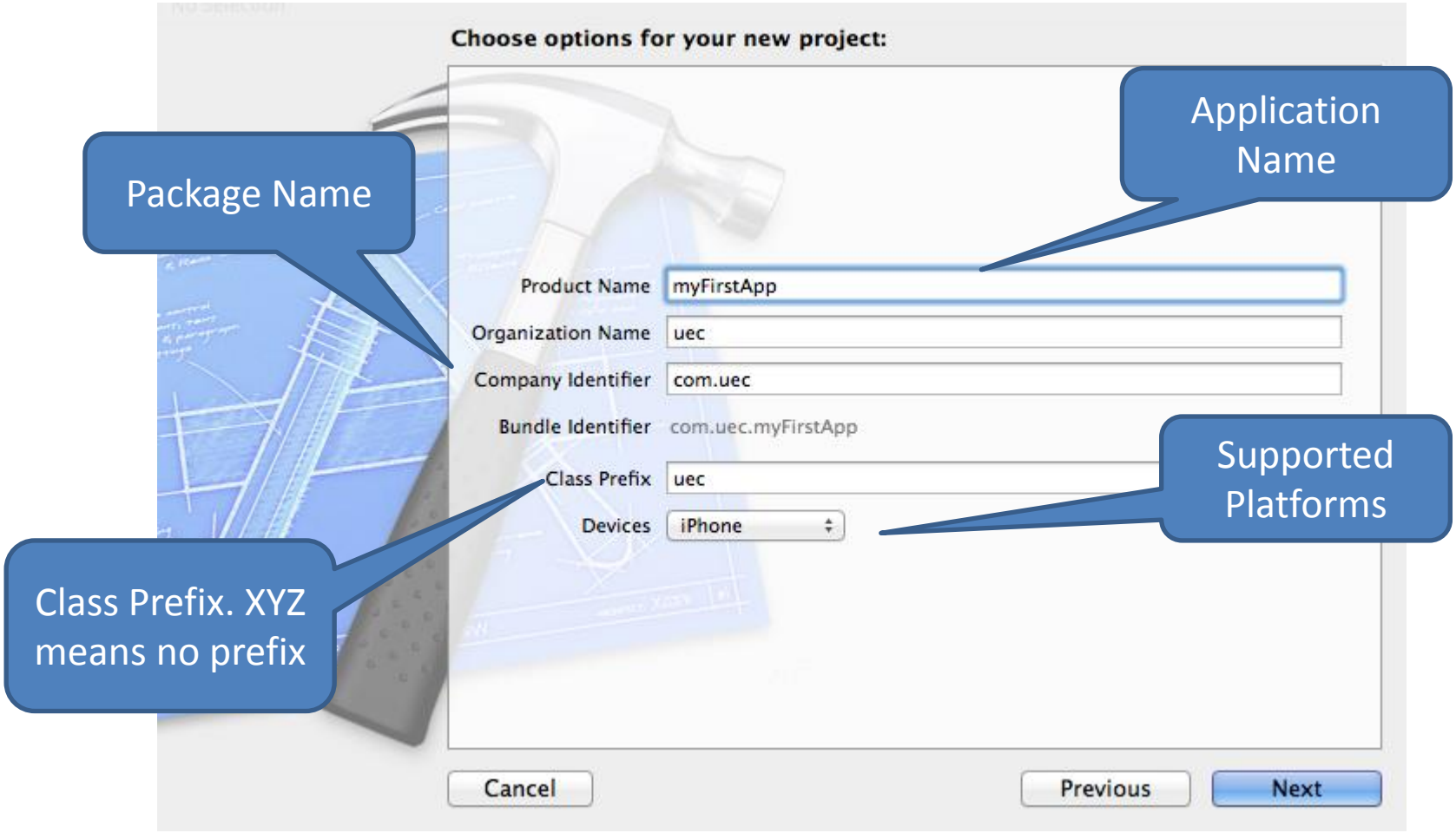
Xcode Project Screen



Creating the first project

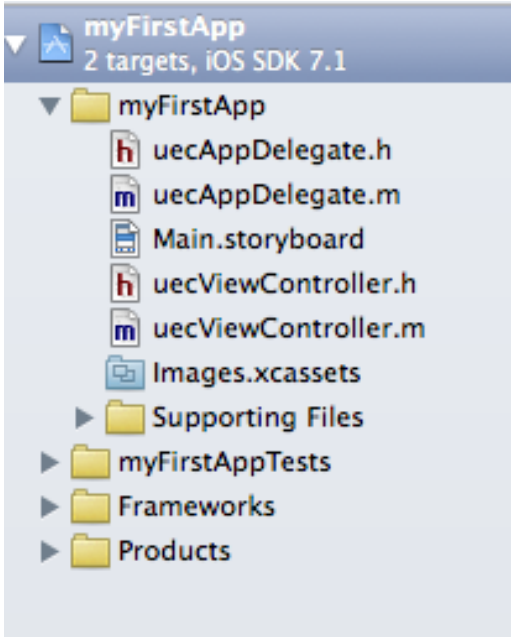


Creating the first project



Default Files

- ViewController.h
  - inherits the UIViewController which provides the fundamental view management model for the iOS applications.
- ViewController.m
  - Do initial setup in viewDidLoad which is called after view loads
  - didReceiveMemoryWarning method is called in case of memory warning.



Default Files

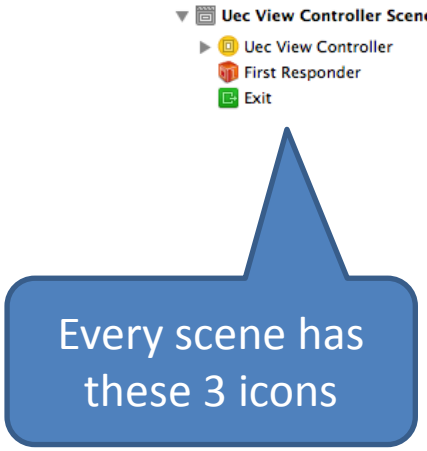
- AppDelegate.h
  - AppDelegate inherits from UIResponder that handles iOS events
  - Implements the delegate methods of UIApplication delegate which provide key application events like finished launching, about to terminate and so on.
  - UIWindow object to manage and co-ordinate the various views on the iOS device screen. It's like the base view over which all other views are loaded. Generally there is only one window for an application.
  - UIViewController to handle the screen flow.

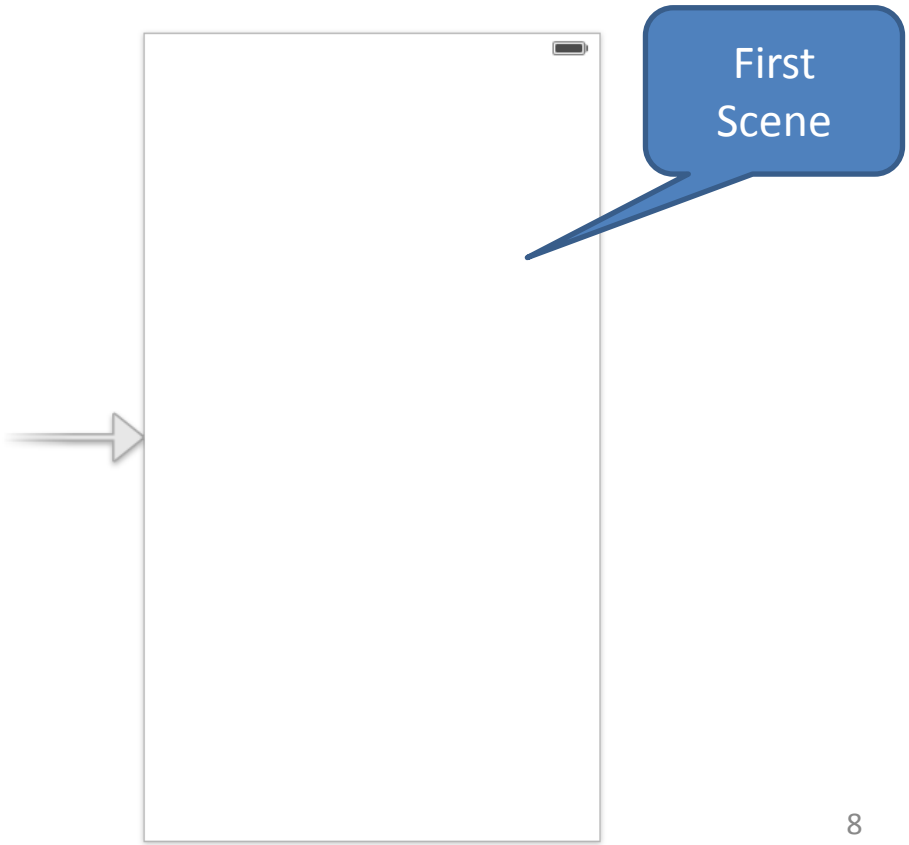
Default Files

- AppDelegate.m
  - UIApplication delegates defined here. All the methods defined above are UI application delegates and contains no user defined methods.
  - UIWindow object is allocated to hold the application is allocated.
  - UIViewController is allocated made as window's initial view controller.
  - To make window visible makeKeyAndVisible method is called.

MainStoryBoard.storyboard

- Contains the Interface Builder for creating interface for the apps

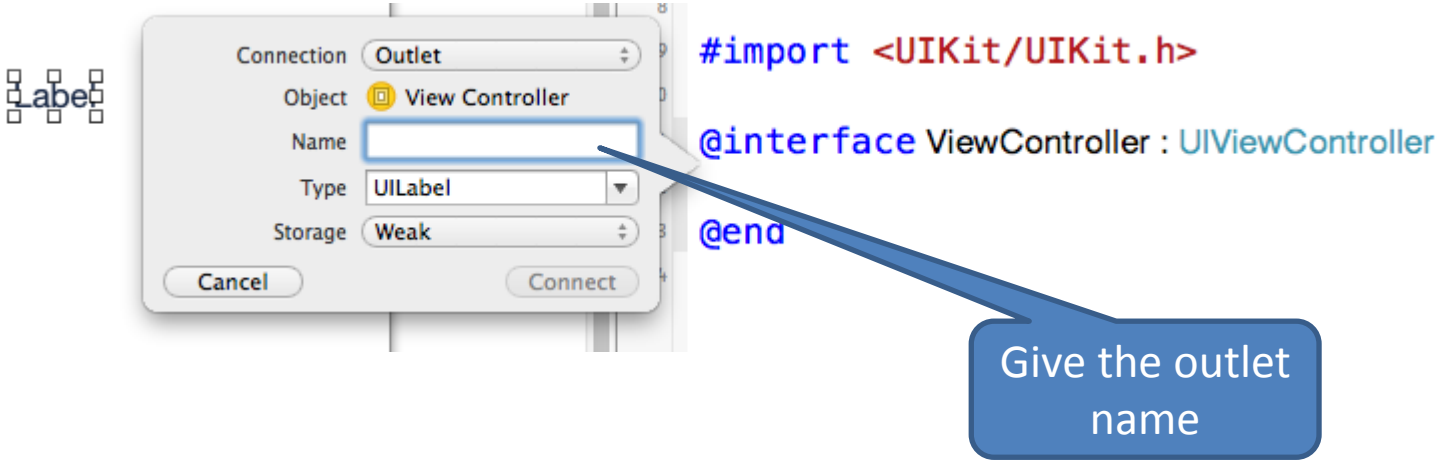




IBOutlet

- IBOutlet is a indicator to the compiler that this UILabel is connected to the code and its values can be affected by the code

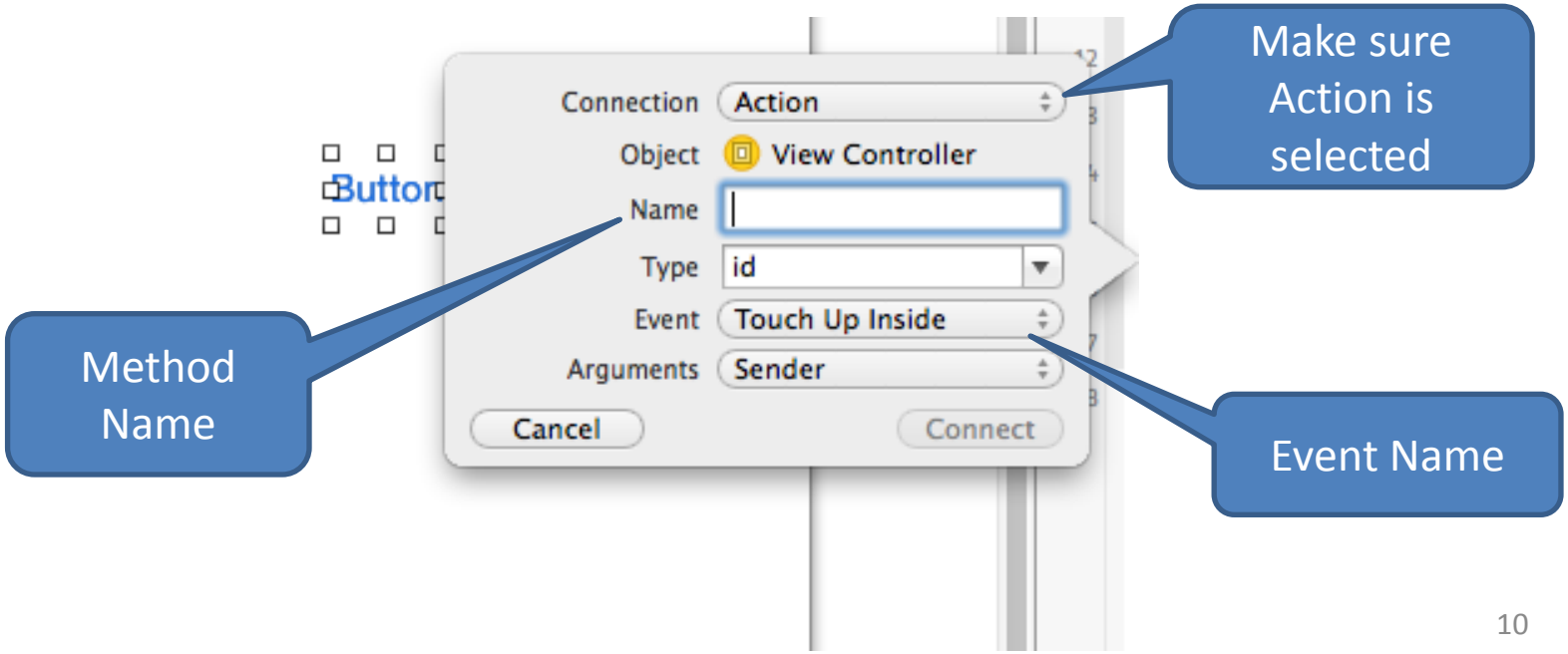
- Control-drag/Right button drag from the UILabel element to the ViewController.h file to create the IBOutlet automatically.



IBAction

- IBAction is another indicator to the compiler that an event associated with the UIButton will trigger the named method in the code

- Create similar to the IBOutlet



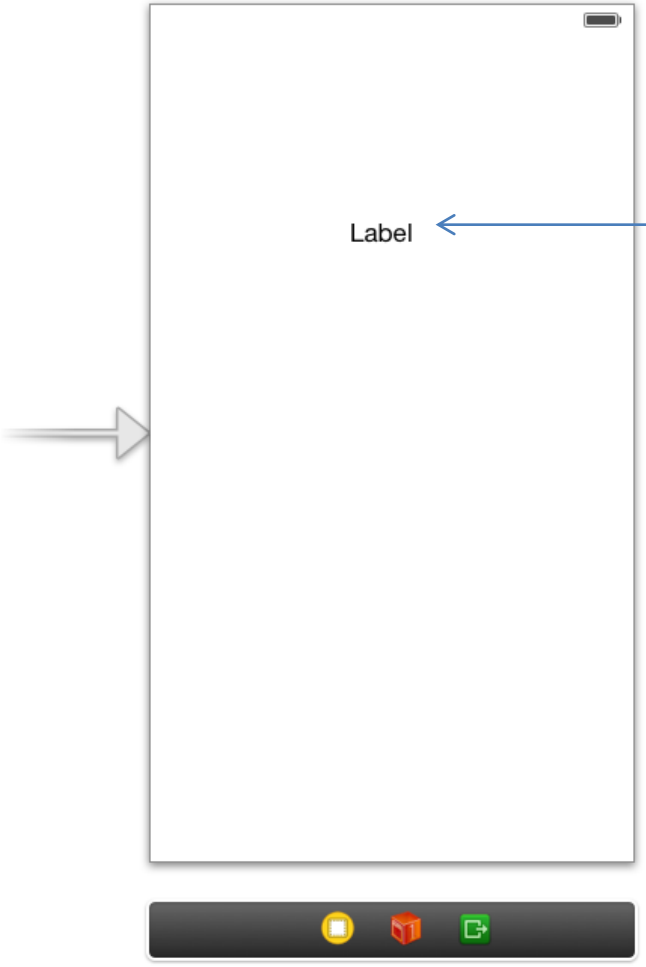
IBOutlet and IBAction

- IBOutlets and IBActions are defined in the ViewController.h and need to be implemented in the ViewController.m

```
9  #import <UIKit/UIKit.h>
10
11 @interface ViewController : UIViewController
12
13 @property (weak, nonatomic) IBOutlet UILabel *myLabel;
14
15 - (IBAction)changeLabel:(id)sender;
16
17 @end
18
```

Exercise 1

Create a Label



ViewController.h

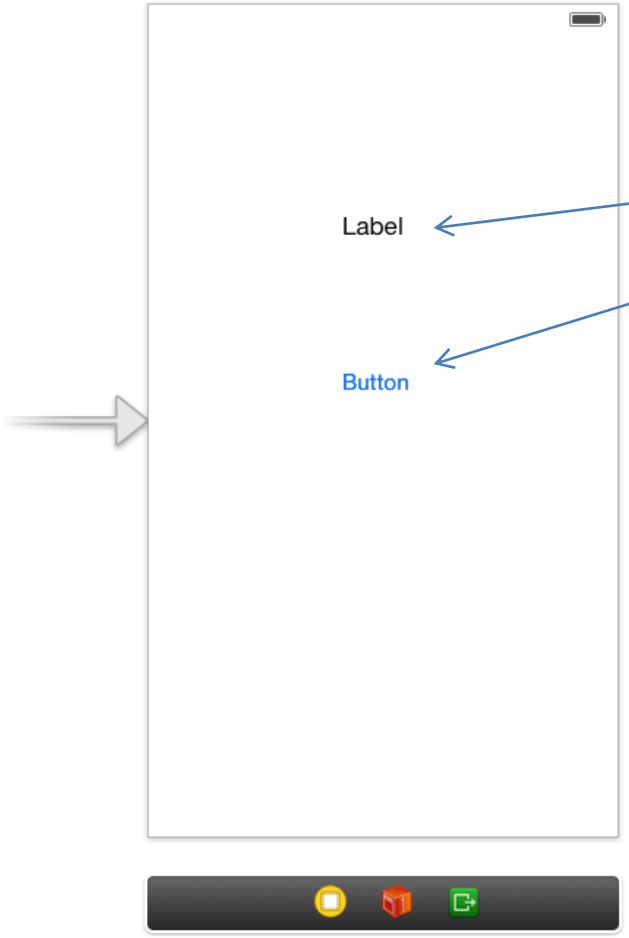
```
@interface ViewController : UIViewController

@property (weak, nonatomic) IBOutlet UILabel *myLabel;
```

ViewController.m

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

    self.myLabel.text = @"Hello";


}
```

Exercise 2

Use a Button to change Label Content



ViewController.h

```
@interface ViewController : UIViewController

@property (weak, nonatomic) IBOutlet UILabel *myLabel;

- (IBAction)changeLabel:(id)sender;


@end
```

ViewController.m

```
- (IBAction)changeLabel:(id)sender {

   self.myLabel.text = @"I am clicked";


}
@end
```

UIButton – More Info

Button State	Description
UIControlStateNormal	Normal State
UIControlStateHightlighted	Button in selected
UIControlStateDisabled	Button is disabled

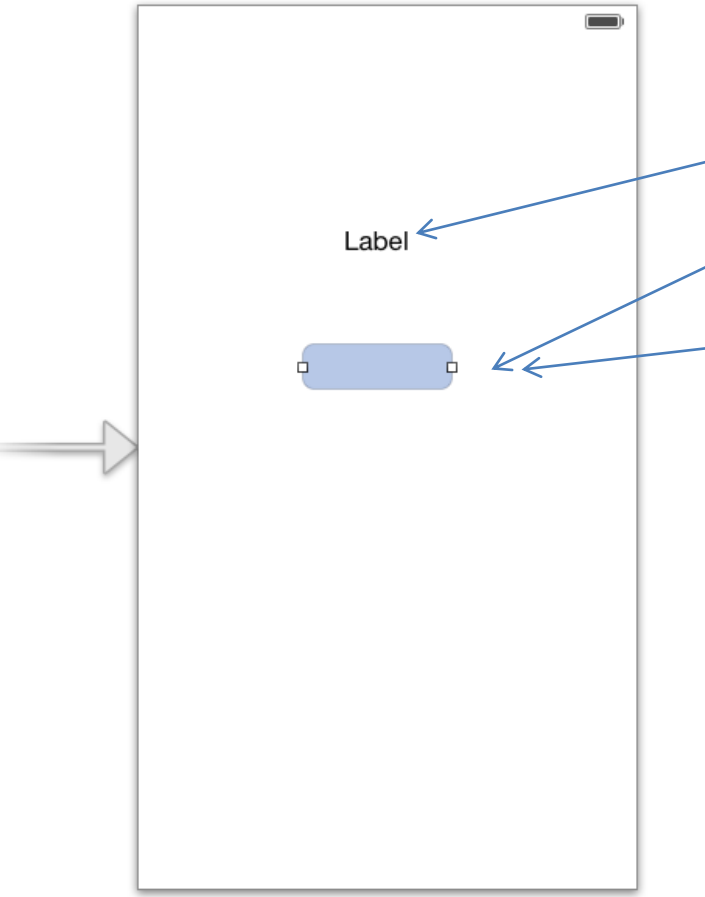
Example

- [myButton setTitle:@"Press Me" forState:UIControlStateNormal];
- [myButton setTitle@"Disabled" forState:UIControlStateDisabled];

Button Event	Description
Touch Up Inside	Triggered when finger lift up
Touch Down	Triggered when touch down
Touch Down Repeat	Triggered when touch 2 times

Exercise 3

Use a TextField to enter information



ViewController.h

```
@property (weak, nonatomic) IBOutlet UILabel *myLabel;

@property (weak, nonatomic) IBOutlet UITextField *
    myTextField;

- (IBAction)changeLabel:(id)sender;
```

ViewController.m

```
- (IBAction)changeLabel:(id)sender {

    self.myLabel.text = self.myTextField.text;


}
```

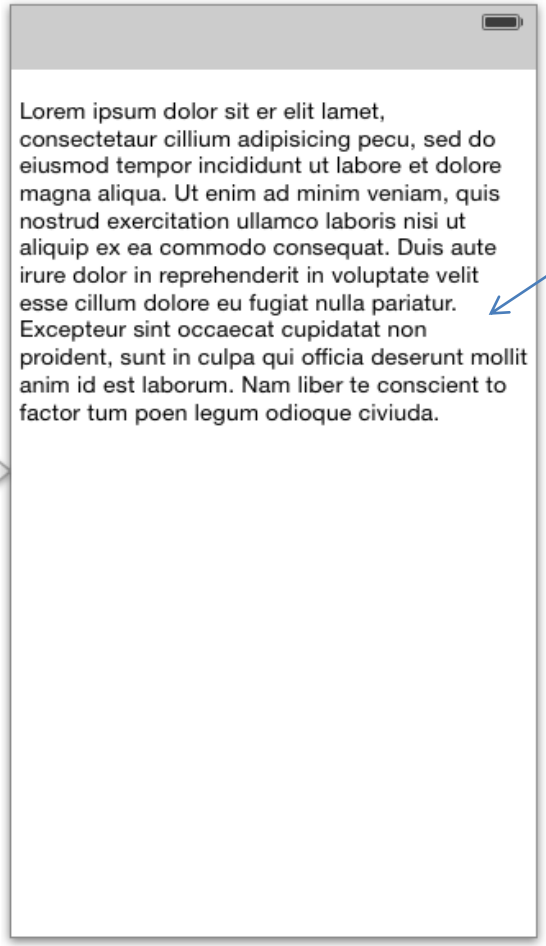
UITextField – More Info

Example

- myTextField.placeholder = @”Please enter your name”;
- myTextField.textAlignment = UITextAlignmentCenter;
- myTextField.textColor = [UIColor greenColor];
- myTextField.font = [UIFont systemFontOfSize:14];
- myTextField.minimumFontSize = 10.0
- myTextField.keyboardType = UIKeyboardTypeNumberPad

Exercise 4

Using UITextView to show info

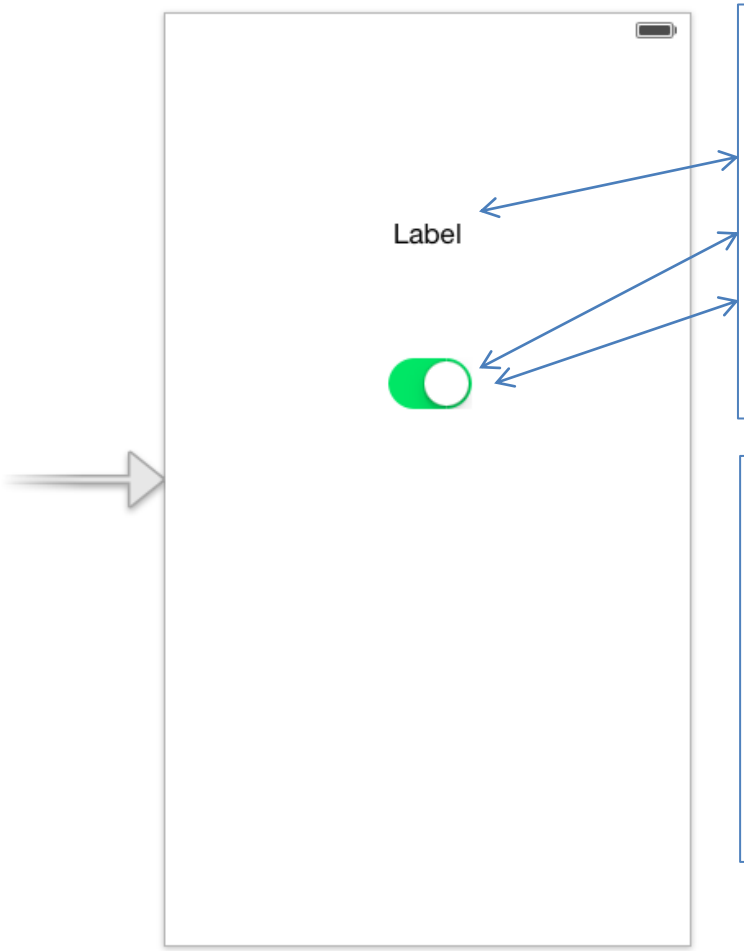



```
#import <UIKit/UIKit.h>

@interface ViewController : UIViewController


@property (weak, nonatomic) IBOutlet UITextView *myTextView;



@end
```

```
@synthesize myTextView;

- (void)viewDidLoad
{
    [super viewDidLoad];

    self.myTextView.text = @"";

    int i=0;

    for(i=0; i<200; i++) {

        self.myTextView.text = [self.myTextView.text
            stringByAppendingString:@"Hello !"];

    }



    // Do any additional setup after loading the view,
        typically from a nib.
}
```

Exercise 5

Using UISwitch to select option

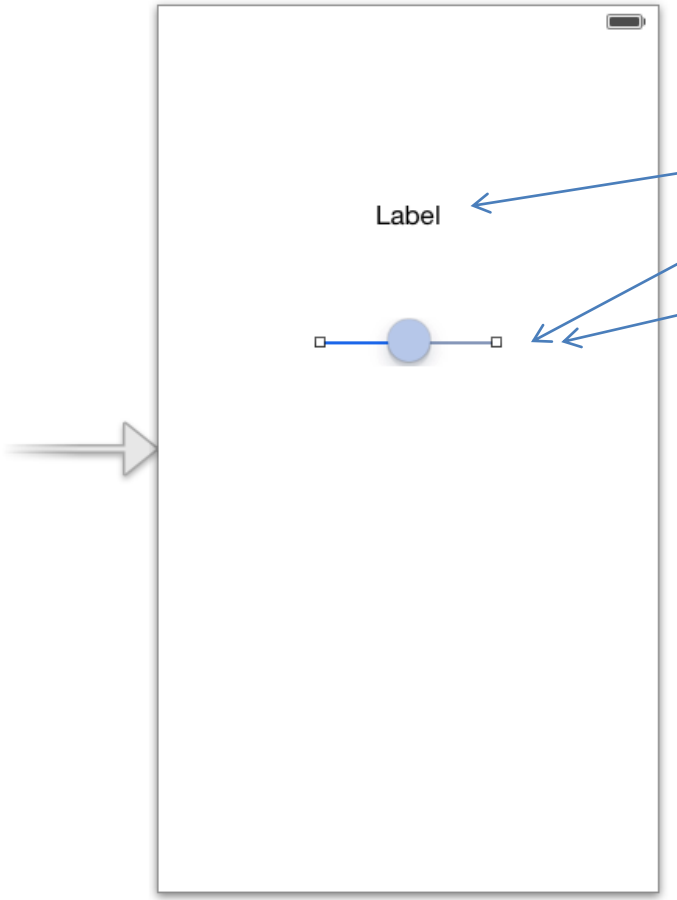



```
#import <UIKit/UIKit.h>

@interface ViewController : UIViewController

@property (weak, nonatomic) IBOutlet UILabel *myLabel;

@property (weak, nonatomic) IBOutlet UISwitch *mySwitch;

- (IBAction)changeSwitch:(id)sender;

@end
```

```
- (IBAction)changeSwitch:(id)sender {

    if(self.mySwitch.on == YES) {

        self.myLabel.text = @"On";

    } else {

        self.myLabel.text = @"Off";

    }
}
```

Exercise 6

Using the UISlider to change options




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

@interface ViewController : UIViewController

@property (weak, nonatomic) IBOutlet UILabel *myLabel;

@property (weak, nonatomic) IBOutlet UISlider *mySlider;

- (IBAction)changeSlider:(id)sender;

@end
```

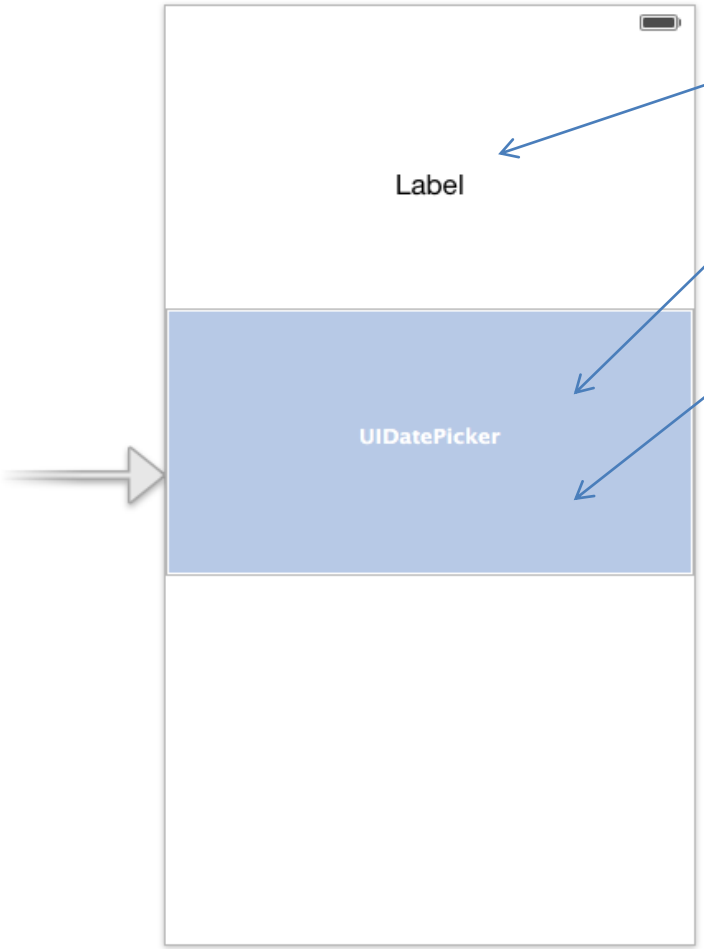
```
- (IBAction)changeSlider:(id)sender {

    self.myLabel.text = [NSString stringWithFormat:@"%f",
        self.mySlider.value];

}
```

UISlider Options

```
@synthesize myLabel, mySlider;

- (void)viewDidLoad
{
    [super viewDidLoad];

    self.mySlider.maximumValue = 10.0;

    self.mySlider.minimumValue = 1.0;

    self.mySlider.continuous = NO;

    // Do any additional setup after loading the view,
        typically from a nib.
}
```

Exercise 7

Using the UIDatePicker



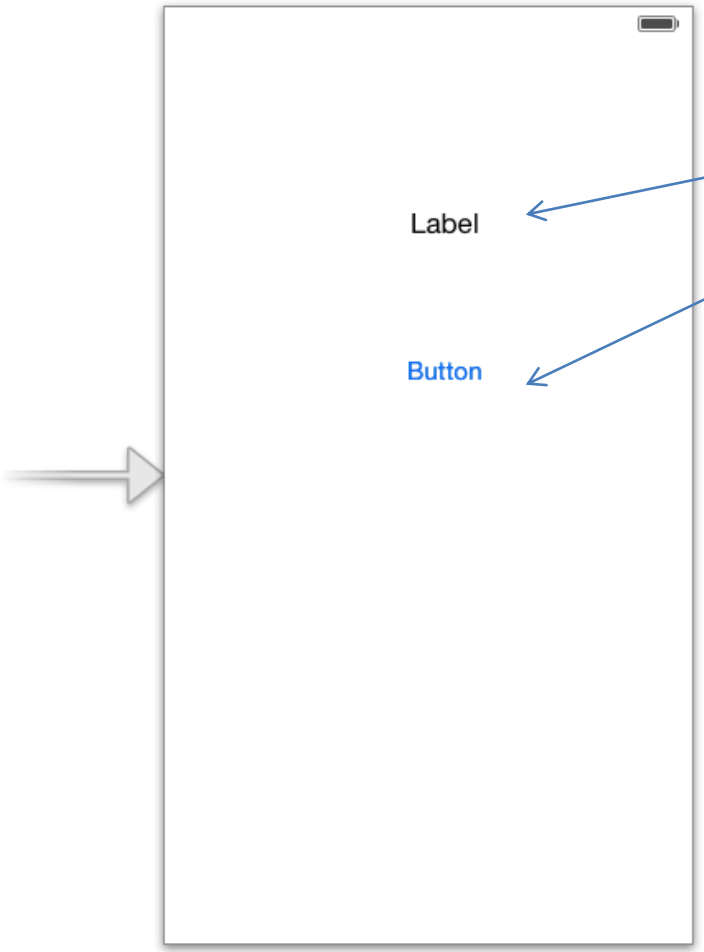

```
@property (weak, nonatomic) IBOutlet UILabel
    *myLabel;

@property (weak, nonatomic) IBOutlet
    UIDatePicker *myDatePicker;

- (IBAction)changeDatePicker:(id)sender;
```

```
- (IBAction)changeDatePicker:(id)sender {

    NSDateFormatter *df = [[NSDateFormatter
        alloc] init];

    df.dateFormat = @"yyyy/MM/dd:HH:mm";


    self.myLabel.text=[df stringFromDate:
        self.myDatePicker.date];

}
```

UIDatePicker Options

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

    self.myDatePicker.datePickerMode =
        UIDatePickerModeDateAndTime;

    self.myDatePicker.date = [NSDate
        dateWithTimeIntervalSinceNow:0];


    self.myDatePicker.minuteInterval = 10;

    // Do any additional setup after loading the view,
        typically from a nib.
}
```

Exercise 8 - UIAlertView

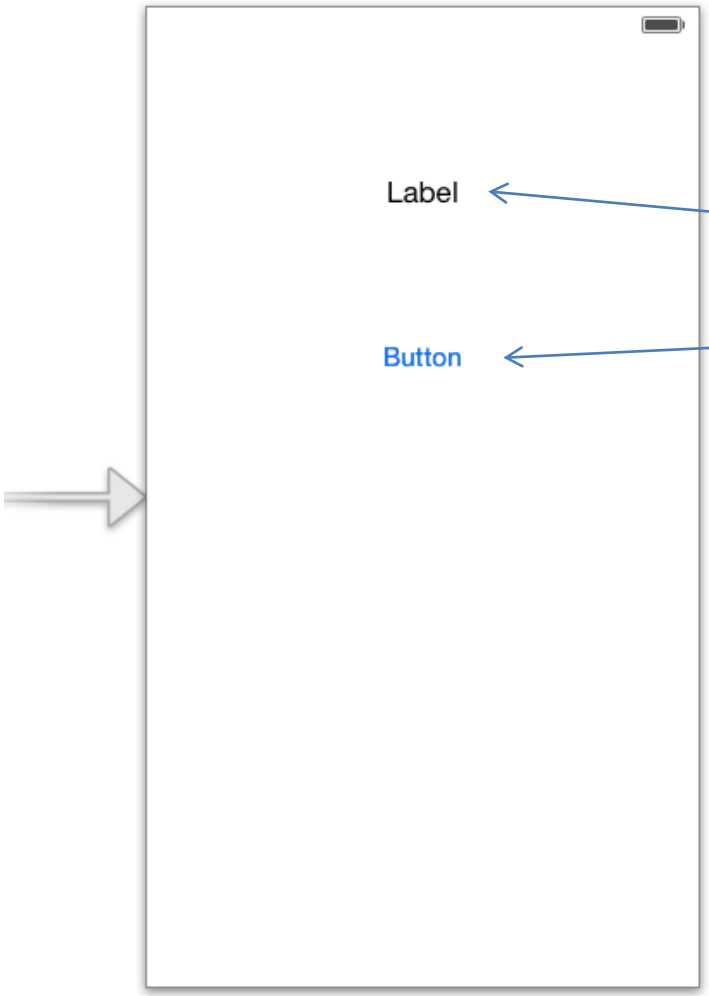



```
#import <UIKit/UIKit.h>

@interface ViewController : UIViewController


@property (weak, nonatomic) IBOutlet UILabel
    *myLabel;

- (IBAction)clickMe:(id)sender;



@end
```

UIAlertView Implementation

```
- (IBAction)clickMe:(id)sender {

    UIAlertView *alert = [[UIAlertView
        alloc]initWithTitle:@"Alert Text" message:@"OK
        Cancel Test" delegate:self
        cancelButtonTitle:@"Cancel" otherButtonTitles:@"OK",
        nil];

    [alert show];

}

-(void) alertView:(UIAlertView *) alertView
    clickedButtonAtIndex:(NSInteger)buttonIndex {

    if(buttonIndex == 1) {

        self.myLabel.text = @"OK";

    } else {

        self.myLabel.text = @"Cancel";

    }


}
```

Exercise 9 - UIActionSheet

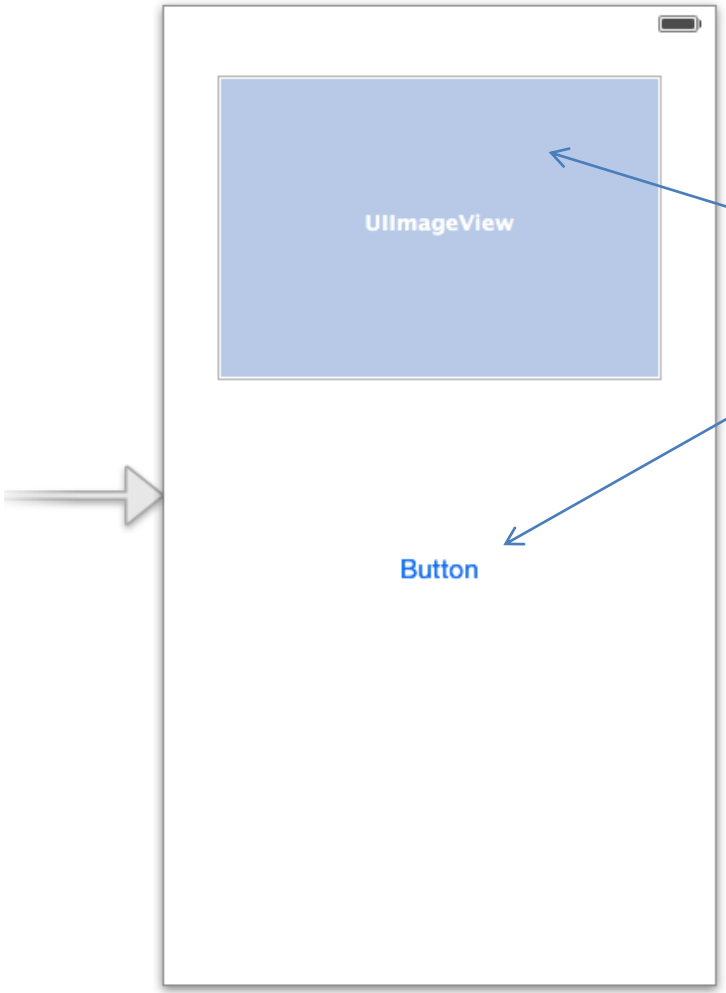



```
#import <UIKit/UIKit.h>

@interface ViewController : UIViewController
    <UIActionSheetDelegate>

@property (weak, nonatomic) IBOutlet UILabel
    *myLabel;


- (IBAction)clickButton:(id)sender;


@end
```

UIActionSheet Implementation

```
- (IBAction)clickButton:(id)sender {

    UIActionSheet *mysheet = [[UIActionSheet
        alloc]initWithTitle:@"My Info Sheet"
        delegate:self
        cancelButtonTitle:@"Cancel"
        destructiveButtonTitle:@"Attention"
        otherButtonTitles:@"Process
        1",@"Process 2",nil];

    [mysheet showInView:self.view];


}


-(void)actionSheet:(UIActionSheet *)
    actionSheet clickedButtonAtIndex:
    (NSInteger)buttonIndex {

    self.myLabel.text = [NSString
        stringWithFormat:@"Button = %d",
        buttonIndex];



}
```

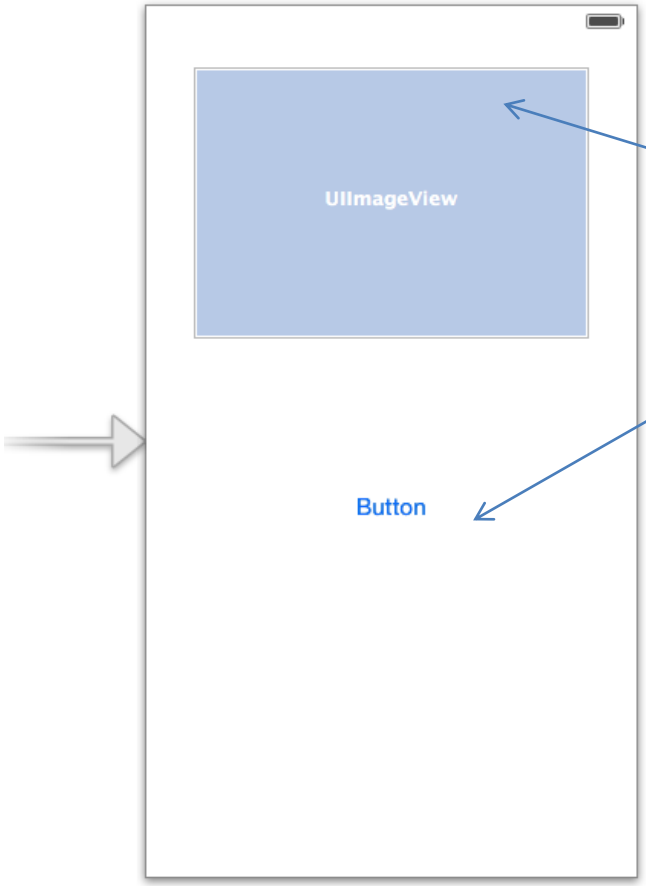
Exercise 10 – UIImageView




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

@interface ViewController : UIViewController


@property (weak, nonatomic) IBOutlet
    UIImageView *myImageView;


- (IBAction)buttonClick:(id)sender;


@end
```

```
- (IBAction)buttonClick:(id)sender {

    self.myImageView.image = [UIImage
        imageNamed:@"flower1.jpeg"];



}
```

Exercise 11 – UIImageView Animation

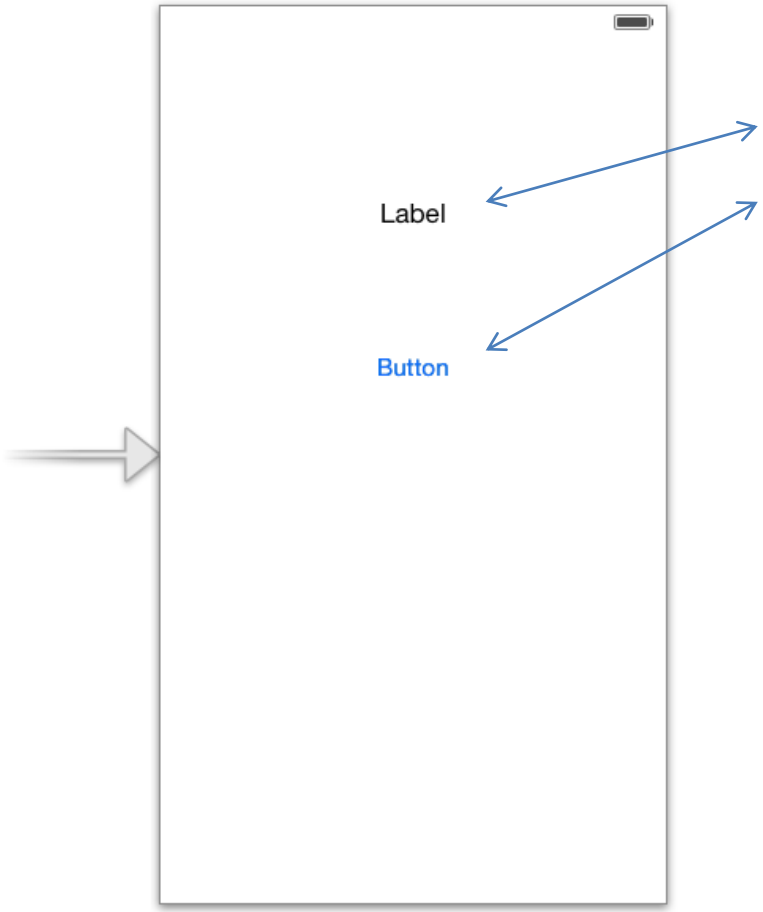



```
#import <UIKit/UIKit.h>

@interface ViewController : UIViewController


@property (weak, nonatomic) IBOutlet
    UIImageView *myImageView;


- (IBAction)buttonClick:(id)sender;


@end
```

UIImageView Animation

```
- (IBAction)buttonClick:(id)sender {

    NSArray *imageArray = [NSArray
        arrayWithObjects:[UIImage
        imageNamed:@"flower1.jpeg"],[UIImage
        imageNamed:@"flower2.jpeg"],[UIImage
        imageNamed:@"flower3.jpeg"],[UIImage
        imageNamed:@"flower4.jpeg"],nil];

    self.myImageView.animationImages =
        imageArray;

    self.myImageView.animationDuration = 1.0
        ;

    self.myImageView.animationRepeatCount=3;

    [self.myImageView startAnimating];


}
```

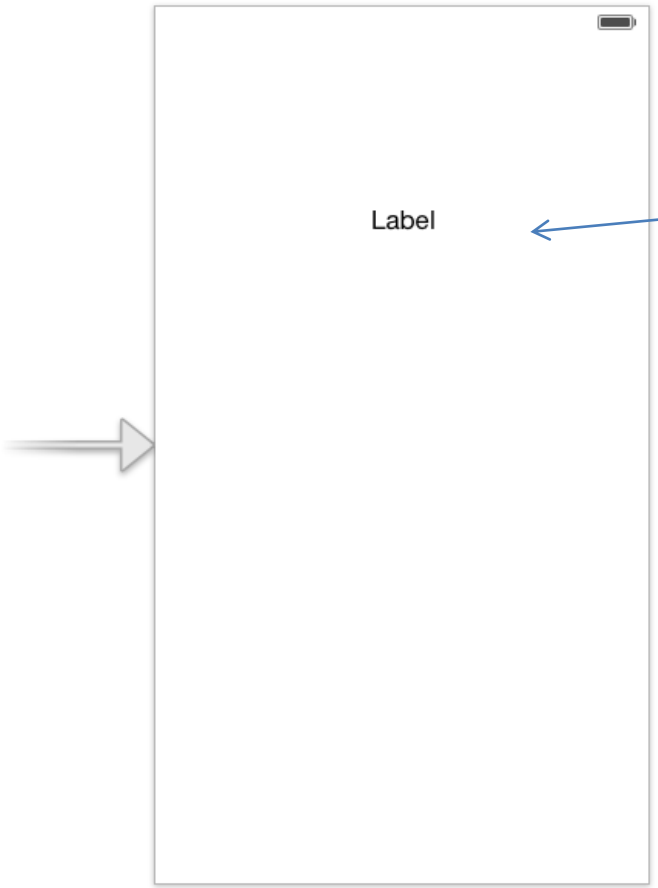
Exercise 12 - UIView Animation




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

@interface ViewController : UIViewController

@property (weak, nonatomic) IBOutlet UILabel *myLabel;

- (IBAction)buttonClick:(id)sender;


@end
```

```
- (IBAction)buttonClick:(id)sender {

    self.myLabel.center = CGPointMake(50,50);

    [UIView beginAnimations:nil context:nil];

    [UIView setAnimationDuration:2];

    self.myLabel.center = CGPointMake(160,240);

    self.myLabel.transform = CGAffineTransformMakeRotation
        (270 * M_PI /100);

    self.myLabel.transform = CGAffineTransformMakeScale(30.0
        , 20.0);

    [UIView commitAnimations];


}
```

Exercise 13 - NSTimer




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

@interface ViewController : UIViewController

@property (weak, nonatomic) IBOutlet UILabel *myLabel;


@end
```

NSTimer Implementation

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

    [NSTimer scheduledTimerWithTimeInterval:0.05 target:self
        selector:@selector(moveLabel:) userInfo:nil repeats:
        YES];

}

-(void)moveLabel:(NSTimer *)timer {

    float wx = self.myLabel.center.x;

    float wy = self.myLabel.center.y;


    wx +=10;

    if(320 < wx) {

        wx = 0;

    }

    wy +=5;

    if(460 < wy) {

        wy = 0;

    }

    self.myLabel.center = CGPointMake(wx,wy);
}
```