

# iOS Development

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# Agenda

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- iPhone Developer University Program
- iPad Specs
- Objective-C Primer
- Tools
- Gesture Demo
- Resources/Questions



# iPhone Developer University Program

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- RIT is registered in the University Program
- Test and debug applications on devices
- Share internal applications
- iPhone course

```
@synthesize direction;
@synthesize staticImage;
@synthesize activeImage;

- (id)initWithFrame:(CGRect)frame
    if (self = [super initWithFrame:frame])
        // Initialization code
        NSLog(@"Init me");
    }
    return self;
}

- (void)setupStaticImage:(NSString*)imageName
    self.staticImage = [self loadImageName:imageName];
    self.activeImage = [self loadImageName:imageName];
    self.image = self.staticImage;
}

// Load an image. It will display
- (UIImage *)loadImageName:(NSString*)imageName
    UIImage *image = [UIImage imageNamed:imageName];
    if(!image) {
        NSLog(@"Error loading the image");
    }
    return image;
}

- (void)touchesBegan:(NSSet *)touches
    direction = CGPointMake(0,0);
```

# iPad Specs

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- **Processor:** 1GHz A4/A5
- **Inputs:** 9.7in multi-touch screen, accelerometer, compass, microphone, Skyhook Wireless Geolocation, (aGPS)
- **Connections:** Wi-Fi, Bluetooth 2.1, (3G, EDGE)
- **Sales:** 200+ million devices

# Objective-C Primer

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- Read online “*The Objective-C 2.0 Programming Language*”
  - Extension to C
- Can mix C/C++ with Objective-C in a single file
  - Compiles with GCC
  - Use .mm file extension

# Objective-C Primer

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- C++/Java

```
public void increment(Object sender)
{
    count++;
    textField.setIntValueWithMax(count, max);
}
```

- Objective-C

```
- (void)increment:(id)sender
{
    count++;
    [textField setIntValue:count withMax:max];
}
```

# Objective-C Primer on Properties

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```
// Header file "MyFile.h"  
Foo *foo;  
...  
@property (nonatomic, retain) Foo *foo;
```

*nonatomic* - single threaded application  
*retain* - memory management

```
// Implementation file "MyFile.m"  
@synthesize foo;
```

**Creates magic setter/getter functions**

```
myFoo = [someObject foo]; // myFoo = someObject.foo  
[someObject setFoo:myFoo]; // someObject.foo = myFoo
```

# Memory Management

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- Retain counts using methods retain/release
- autorelease - lives in the scope of method

```
- (void)printHello {  
    NSString *string;  
    string = [[NSString alloc] initWithString:@"Hello"];  
    NSLog(@"%@", string);  
    [string release];  
}
```



# Tools

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- Xcode
  - iPhone SDK from **[developer.apple.com/ios](http://developer.apple.com/ios)**
  - Free
- iPhone Simulator - virtual iPhone/iPad
- Interface Builder - GUI tool



# Interface Builder Objects and Code

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- **IBOutlet** - variables to attach to Interface Builder objects

```
@property (nonatomic, retain) IBOutlet UIButton *myButton;
```

- **IBAction** - methods to attach to Interface Builder actions

- (**IBAction**) doSomethingWhenButtonPressed:(**id**) sender

# iPad Gestures Demo

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- Working with Interface Builder and Xcode



# Xcode Pro Tips (Xcode 3.X)

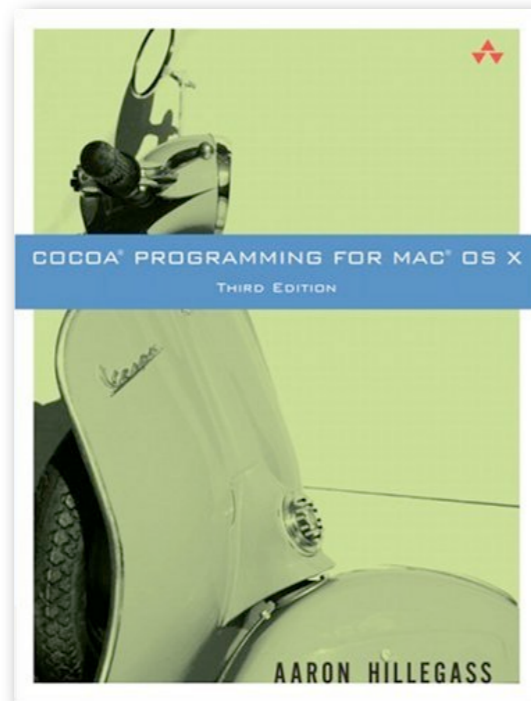
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- Header file = Command + double-click symbol
- Quick Help = Option + double-click symbol
- Reference Document = Command + Option + double-click symbol
- **Switch between header/source files = Command + Option + Up-arrow**
- Learn something you don't know == Google/Bing Search

# Resources

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- [Cocoa Programming for Mac OS X](#) by Aaron Hillegass (Third Edition)
- Stanford iPhone Course ([cs193p.stanford.edu](http://cs193p.stanford.edu))
  - Search “*iPhone Application Programming*” in iTunes



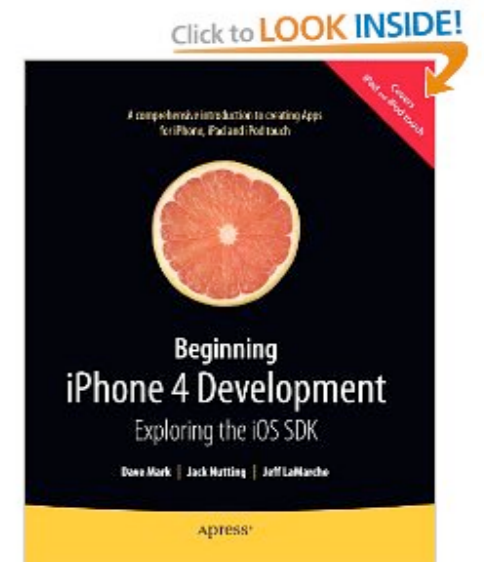
# Resources

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- Beginning iPhone 4 Development: Exploring the iOS SDK by Jeff LaMarche and David Mark

- **iPhone Blog:** <http://iphonedevdevelopment.blogspot.com>

- Great OpenGL ES resource with example code



- iPhone Programming: The Big Nerd Ranch Guide by Joe Conway and Aaron Hillegass

- Available on Amazon

