

How to Write Your First iPhone Program

by Matt Stoker

The Apple iPhone is becoming a full-fledged development platform. It's reliance on desktop-class operating system software is allowing it to become the most powerful mobile platform available. Here is how you can get in on the action, even if you have never written a line of code before! First, you need an Apple computer with an Intel processor and Mac OS X Leopard. I'm sure that Apple would be happy to help you with this step. We're going to jump right into making a program, but first we need to define a few terms.

Software Development Tools

Programming is done in a suite of programs called an Integrated Development Environment, or IDE for short. IDEs are made by hardware and software companies like Microsoft and Apple to allow programmers to make programs to run on their platforms. IDEs have a main program in them that tie of the other programs together. That is why they are called Integrated Development Environments. The three most import programs in the IDE for us are the editor, the compiler, and the simulator.

An editor is any program that allows you to write text and save that text in a simple format called plain text. Simple examples are Microsoft's Notepad, or Apple's TextEdit. Word processors like Microsoft Word or Apple Pages can be used as editors, but usually more specialized programs are that are written just for an IDE are used.

A compiler is a program that takes the code in the text files you produce in the editor, and translates it into code that the computer can run. You use the main IDE program to tell the compiler where the files are, and it does the rest. Apple compilers produce a set of files called a bundle. The bundle looks like one file to the user, but actually is a folder with files inside.

A simulator is a program that pretends to be a physical hardware device, like the iPhone. It takes the files produced by the compiler and runs them just like the device would. Sometimes simulators are called emulators, because they try to emulate the physical device.

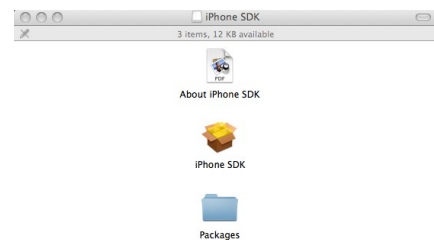
Now that we know what an IDE is, lets go get one! Apple's IDE is called Xcode, and is available for free on Apple's software development website to anyone who registers as a developer. Apple has repackaged Xcode with iPhone development resources and called it the iPhone SDK.

Registering as a Developer and Downloading Xcode

1. Open your favorite web browser and go to <http://developer.apple.com/iphone/program>.
2. Scroll to the bottom of the page and click "Download the Free SDK".
3. Click "Create Apple ID".
4. Input your information and click "Create".
5. In the downloads section, click "iPhone SDK".
6. Choose a location to save the DMG file.

Installing Xcode

1. Double click the DMG and you will be presented with a window containing the Xcode installation package.
2. Double click iPhone SDK.
3. Follow the installation instructions. The default selections for each screen are fine.



Running Xcode

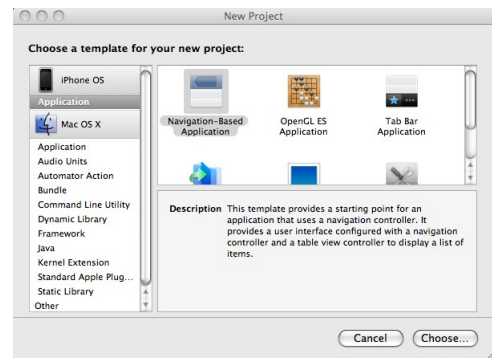
Because Xcode depends on many system-level services and includes many programs, it does not install into the Applications folder. To run Xcode and other tools that come with the iPhone SDK:

1. Double-click “Macintosh HD” on your desktop.
2. Double-click “Developer”
3. Double-click “Applications”
4. Double-click “Xcode”

Creating Your First Project

Xcode's user interface, like most Mac applications, is composed of many windows that are tied together with the main menu at the top of the screen. The first time Xcode is run, it will present a welcome screen. These screens can be helpful, but not at the moment. Close them and we will create your first iPhone project.

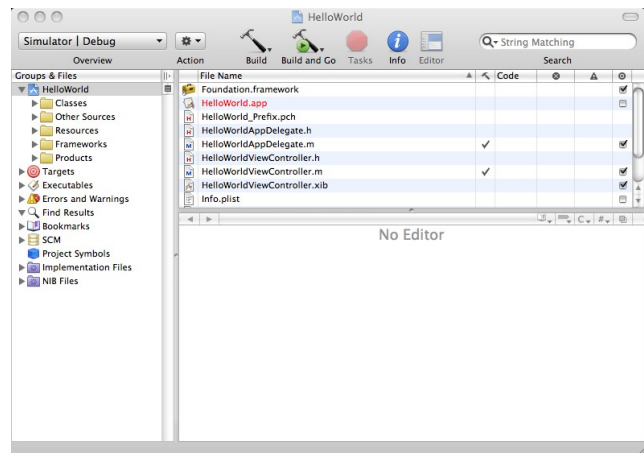
1. Click “File -> New Project”.
2. Click the “View-Based Application” icon.
3. Click “Choose”.
4. Navigate to a location where you would like to store your iPhone projects. In the text box labeled “Save As:” type “HelloWorld”.
5. Click “Save”.



Writing and Compiling Your Program

The window you are seeing now is the main IDE program. It has the editor and controls for the compiler built into it. We will now add the code to create a button and a button action.

1. Expand the “Classes” group on the left side by clicking on the small triangle next to it.
2. Click on “HelloWorldViewController.m”.
3. Scroll down to the second green code region. This is a code comment showing where to put your code if you are creating your user interface using code.
4. Highlight the whole comment from the “/*” line to the “*/” line and paste or type the following code in it's place:



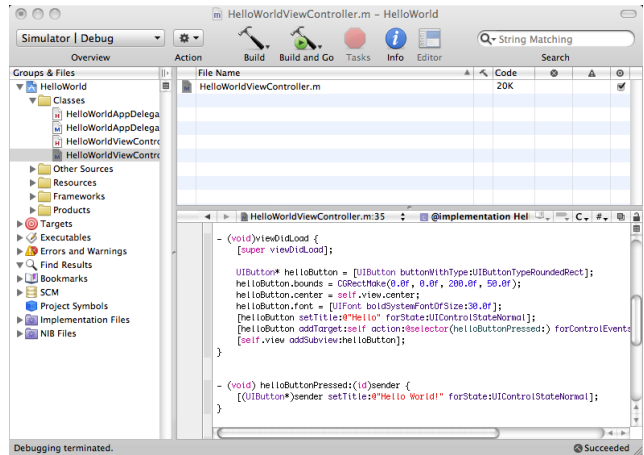
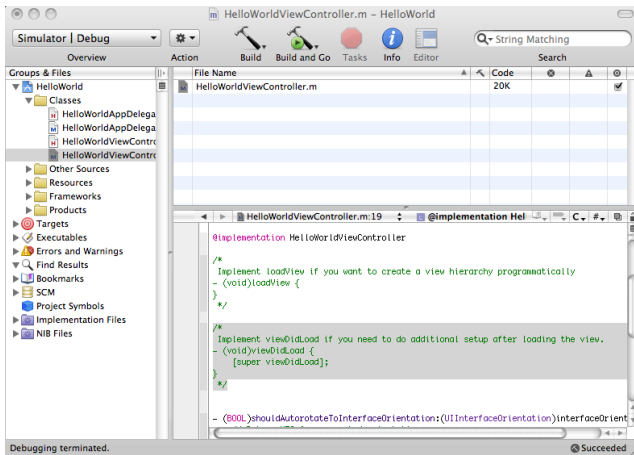
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- (void)viewDidLoad {
    [super viewDidLoad];

    UIButton* helloButton = [UIButton buttonWithType:UIButtonTypeRoundedRect];
    helloButton.bounds = CGRectMake(0.0f, 0.0f, 200.0f, 50.0f);
    helloButton.center = self.view.center;
    helloButton.font = [UIFont boldSystemFontOfSize:30.0f];
    [helloButton setTitle:@"Hello" forState:UIControlStateNormal];
    [helloButton addTarget:self action:@selector(helloButtonPressed:) forControlEvents:UIControlEventTouchUpInside];
    [self.view addSubview:helloButton];
}

- (void) helloButtonPressed:(id)sender {
    [(UIButton*)sender setTitle:@"Hello World!" forState:UIControlStateNormal];
}

```



Running Your Program

Now we have some code written for the compiler to compile and the simulator to run. To compile your code and start the simulator running your program, press the “Build and Go” button at the top. If asked to save your changes, press “Save All”. The simulator will start up and run your program. Congratulations on writing your first iPhone program!

Going Further

There is a lot to learn in the computer programming field, especially when writing for exciting platforms like the iPhone. The best way to learn to program is find a good book or tutorial online and experiment, experiment, experiment! For example, try to change the positioning, font size, or messages on the button. Add other buttons. Experiment with other controls like UILabel, UIImageView, and UITextField. The more you try, the more you'll know. Don't get discouraged if you encounter errors. Work through them by trying different things and finding additional tutorials online. Enjoy!

