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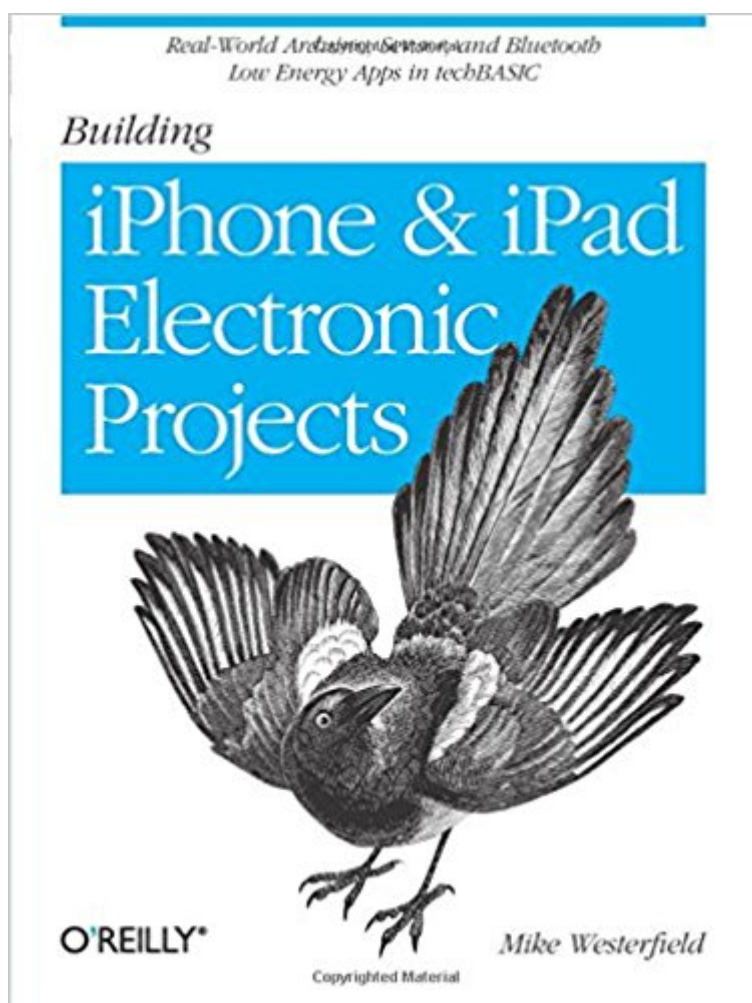
Building IPhone And IPad Electronic Projects: Real-World Arduino, Sensor, And Bluetooth Low Energy Apps In TechBASIC

Real-World Arduino, Sensors, and Bluetooth Low Energy Apps in techBASIC

Building

iPhone & iPad Electronic Projects

O'REILLY®

Mike Westerfield

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Synopsis

Why simply play music or go online when you can use your iPhone or iPad for some really fun projects, such as building a metal detector, hacking a radio control truck, or tracking a model rocket in flight? Learn how to build these and other cool things by using iOS device sensors and inexpensive hardware such as Arduino and a Bluetooth Low Energy (LE) Shield.This hands-on book shows you how to write simple applications with techBASIC, an Apple-approved development environment that runs on iOS devices. By using code and example programs built into techBASIC, youâ ™ll learn how to write apps directly on your Apple device and have it interact with other hardware.Build a metal detector with the iOS magnetometerUse the HiJack hardware platform to create a plant moisture sensorPut your iPhone on a small rocket to collect acceleration and rotation dataHack a radio control truck with Arduino and Bluetooth LECreate an arcade game with an iPad controller and two iPhone paddlesControl a candy machine with an iOS device, a micro servo, and a WiFi connection

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Customer Reviews

"Finally my iPad can interface with the real world! techBASIC is the easiest and most intuitive programming tool I have ever used. This book really makes me want to explore my creative ideas for controlling things with my iPad." -- Jarle Boe Wireless Evangelist, Texas Instruments

Mike started programming on a PDP-8 using a teletype terminal. As the personal computer

revolution got going he sold his car and rode a bike for several months to raise cash to buy an Apple II computer. He wanted to write a chess program but couldn't find a good assembler, so he took a summer off to write his own. Two years later he finished ORCA/M, which went on to become Apple Programmer's Workshop, the Apple-labeled development environment for the Apple IIGS.Born the same year as Steve Jobs and Bill Gates, Mike made the mistake of getting an education instead of getting rich. A slow learner, he graduated from the U.S. Air Force Academy in 1977 with a degree in Physics, earned an M.S. in Physics from the University of Denver, and was Working on a Ph.D. when he started making more money from his sideline software company than from the Air Force.Since then Mike has developed numerous compilers and interpreters, software for mission-critical physics packages for military satellites, plasma physics simulations for Z-pinch experiments, multimedia authoring tools for grade schoolers, disease surveillance programs credited with saving lives of hurricane Katrina refugees, advanced military simulations that protect our nation's most critical assets, and technical computing software for iOS.Mike currently runs the Byte Works, an independent software publishing and consulting firm. He is a PADI scuba instructor who lives in Albuquerque with his wife and cat, enjoying being an empty nester and spoiling his grandchildren.

Well written, with lots of good examples of code and several helpful explanations of the technology involved.

Really good book.The Web page for the book with examples does not seem to be available at the URL provided in the book.

well done and useful with just the right amount of background

The book has lots of great examples of programming your iPad/Iphone using a language called techBASIC.techBASIC is used to avoid the need for a full-blown development system using Objective C and does not require payment to Apple to join the developer program. The first few projects are based only on the iOS devices internal sensors such as accelerometer and magnetometer.Some caveats:1. The most projects require external hardware that must be purchased separately. For example, some use a $25 sensor from Texas Instruments. Others use a model rocket.2. The book only gives you access to pre-made techBASIC programs. To write your own or modify the ones in the book requires the purchase of the full-blown app for fifteen bucks on

the app store.My other issue is that the techBASIC language itself is a little cumbersome or maybe ugly is a better word. I wished it was cleaner and more Python like and I think that would make it more approachable for the newcomer to programming.Overall it is a good book with very good projects.

UPDATED REVIEW: with reference to the comments to this review, it appears this book remains relevant with iOS 8.Are you a hobbyist of the sort from which the original computer developers (Wozniak, et Al) we're cut from? If so, or if you want to experiment with the unique abilities of you iPhone or iPad to use your device to seek treasures, control remotely your cars, or whatever, you will want. The book, Building iPhone and iPad Electronic Projects - a well-written, easy to grasp text for computer/electronic hobbyists.What I greatly appreciate is that the author did not try to be cute or funny. Mike Westerfield stayed straight and true to the serious nature of instruction, without getting preachy or mundane.I highly recommend Building iPhone and iPad Elctronic Projects: Real-World Arduino, Sensor, and Bluetooh Low Energy Apps in techBasic.

I've always thought Apple missed a major opportunity by not releasing an SDK for the iPod nano 5G when it first came out. It's kind of a moot point now because the BeagleBone Black and Raspberry Pi are a lot cheaper and aren't tied to an ecosystem that's designed to enforce stability at all costs, but iOS still has a fair amount to recommend it. So, if you need a book for that... this isn't quite it. (But it'll probably serve your purpose anyway.)See, this book is mistitled. It's actually a book about the TechBASIC environment and how to use it to interact with the outside using something other than the Lightning port. The language itself is a commercial product available through the App Store, but it happens to interface with a number of peripherals, including the HiJack (a serial interface for the headphone port) and the TI SensorTag via Bluetooth Low Energy, as well as the sensors built into iOS devices. There's also some vehicle automation, including packing an iPhone into a model rocket for data gathering and controlling a model truck via Arduino and Bluetooth LE, and an iPad Pong game using two iPhones as controllers. (The tricorder bit is basically the up-and-running chapter at the beginning, covering datalogging basics.) I want to criticize the use of third-party commercial software in a book meant for makers, but to be honest, the realities of the iOS environment mean this is probably about the best way to go about using iOS for maker projects.So... if you know what's actually in the book, it will do its job fairly well. It's just not quite what its title claims it is. Enjoy.

This book is, to some degree, an inventor's dream, or at least part of one, 'cause you've got to buy other stuff in order to make the dream come true. The author, who runs a company called Byte Works, obviously has a lot of experience with both electronic hardware and the software used to command it. In fact, the software used in the book is techBASIC (created by Byte Works), a variant of the original language (actually the first I learned in high school) which is tailored for use with Apple products such as the iPhone and the iPad. In fact, techBASIC is geared to readily extract the accelerometer data from my iPhone (I tried it . . . at a cost of fifteen smackers for the techBASIC software on the Apple app store).The author has incorporated quite a few programming examples along with various "science projects" such as a barometer or a hygrometer, which requires purchase of the six-function TI SensorTag (25 smackers) and, optionally, the CC Debugger (49 smackers), all from Texas Instruments. Then there's more projects involving the Arduino (more money [but you've got to spend money to make money . . . or cool projects, anyway]).All in all, the author does a great job of explaining what you need and why you need it and also explains the techBASIC software quite well. (He also does a great job of making me feel stupid. . . .) Definitely a must-have text (and software [not included]) for anyone looking to exploit the iPhone and iPad and expand his or her knowledge of electronics and electronics control.

The book explains how to use your iphone to make all the cool projects of metal detector, tricorder (not much into star trek to appreciate its need), bluetooth low energy shield. This process helped me understand my iphone and its innards better. The author had a good consideration about his audience being from a software or hardware background but not both and maintained that bridge connection to make the readers feel at ease. That said the book still requires a good amount of coding skill. since the book is about very specific projects, it caters to a very narrow niche of makers. The book would have done with a general expanse of applications and less detail.

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