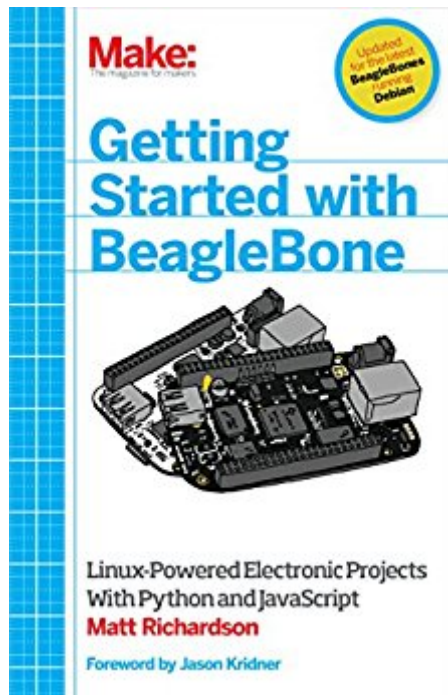# Getting Started With BeagleBone: Linux-Powered Electronic Projects With Python And JavaScript

Synopsis

Many people think of Linux as a computer operating system, running on users' desktops and powering servers. But Linux can also be found inside many consumer electronics devices. Whether they're the brains of a cell phone, cable box, or exercise bike, embedded Linux systems blur the distinction between computer and device. Many makers love microcontroller platforms such as Arduino, but as the complexity increases in their projects, they need more power for applications, such as computer vision. The BeagleBone is an embedded Linux board for makers. It's got built-in networking, many inputs and outputs, and a fast processor to handle demanding tasks. This book introduces you to both the original BeagleBone and the new BeagleBone Black and gets you started with projects that take advantage of the board's processing power and its ability to interface with the outside world.

Book Information

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Customer Reviews

This book is an introduction to both programming and electric toying of this powerful development

board.Linux platform is well equipped to the point even bash shell scripting can be used to do a decent hardware hacking control. I believe targeted audience is a weekend hacker and not serious C/C++ programmer. If that is a case, this books serves its target audience well.There is only one thing that really bothers me.Following a tradition of Raspberry Pi and Arduino , the first physical demonstration of the board is made on how to turn LED on.Matt tells us to use 100 ohm resistor in series of LED. the GPIO pin is set up to source the current. With 3.3V output and 100 ohm resistor with LED Vf of about 1.8V, the resulting current will be around 15mA. This is OK for LED that is usually rated for 20 mA but appears to be way over the spec'ed source current of 4mA for this TI SOC. The setup does work (I did try it) and did not destroy my beaglebone but this is probably because the TI chip's design margin and not the GPIOs intended usage. Therefore I would not follow this if I were to use more than a single LED in the same fashion. Adafruit.com's tutorial (written by Simon Monk) recommends the use of 470 ohm resistor instead and warns against the use of lesser value resistor because "it could burn your beaglebone". Derek Molloy's youtube video even shows the set up where GPIO output is buffered by a small signal transistor to turn LED on. Needless to say, I am most comfortable with Derek's solution.Other than this concern, the book succeeds in showing around the Beaglebone's vast playing ground. I liked the book for covering the broad spectrum of methods to enjoy this board in a relatively small number of pages.

This was my first shot at the BeagleBone Black. After a bunch is dismal how to do it books over the Raspberry Matt Richardsons book was real breath of fresh air. Everything he suggested worked the first time. His descriptions and explanations were exact and understandable. In a few hours I was reading my Emails and downloaded some business data. After many hours of frustration with the Raspberry books I managed to get an LED to blink.If you want to get off to good start with open source devices buy the BeagleBone Black and get a copy of this book.

Matt Richardson a prominent Maker who also wrote the excellent Getting Started manual on Raspberry Pi and is a Masters student at NYU's Interactive Telecommunications Program has prepared an excellent handbook on the powerful Beaglebone (and Beaglebone Black). The Beaglebone most recently released for $45 in the Beaglebone Black model has several advantages over both existing Arduino models and the Raspberry Pi. Like the Pi the Beaglebone runs the powerful Linux operating system on a faster and more powerful processor. Like the Arduino the I/O capabilities of this compact processor card include Analog I/O with a built in Analog to Digital Converter and several PWM outputs (this is unlike the Raspberry Pi which has no built-in ADC and

only a single PWM output). In addition, the Beaglebone has a Javascript-based I/O control in the Bonescript Language and a Web-Hosted IDE for developing Bonescript Code known as Cloud9.Mr. Richardson certainly includes a full description of all one needs to get started with the Beaglebone include hardware gozinta's, software setup and use of the IDE as well as Python interfaces; but he also goes well beyond other getting started books in this compact 127 page edition. Projects include a networked outlet timer, use of Python and Bonescript and the Linux Shell to control the board and interfaces, and use of the Xively Internet of Things service (formerly known as COSM or Pachube).I highly recommend this Getting Started++ guide to the powerful and extensible Beaglebone architecture to both those new to Linux embedded systems and hardware enthusiasts.--Ira Laefsky MS Engineering/MBA IT & HCI Consultant & Researcherformerly on the Senior Consulting Staff of Arthur D. Little, Inc. and Digital Equipment Corporation

Surprised how quick you can get your project going with this book.I am not so novice (engineer that worked with Unix and Linux for years), but I still learned things I did not know.But what's really great, is that it's fast... in very little time you can get started with linux, ssh, turn on LED's, Python scripts etc...Withing 4 hours you learned all you need to get your internet controlled project started. I highly recommended it for the beginner, but also for the intermediate user.Not to be fooled: this book is not a complete user manual, it just scratches the surface of all the potential of this Beablebone, but it's super fast to do, and touches many aspects of it (GPIO, PWM, Analog I/O, ethernet, python, JS, HDMI, cron, Cloud IDE).

This Make: Getting Started Guide is everything I expected it to be. It has a very thorough instructions on how to get up and running. It covers various ways to "program" GPIO pins such as shell scripting, using the Adafruit GPIO python library, and using bonescript which is based on node.js . I was particularly interested in learning about the BeagleBone because I am curious about the upcoming Arduino Tre and I wanted to know the rationale for combine a BeagleBone and Arduino board into one big board. Although the BeagleBone appears to excel in the Linux side of functionality, programming the GPIO pins appears to be very cumbersome and somewhat Byzantine depending on the chosen method. Furthermore the GPIO's on this system seem quite fragile compared to an Arduino, especially when you need to use the ADC. From reading this book I can clearly see the motivation for the upcoming Arduino Tre.

Getting Started with BeagleBone: Linux-Powered Electronic Projects With Python and JavaScript

Python: PYTHON CRASH COURSE - Beginner's Course To Learn The Basics Of Python Programming In 24 Hours!: (Python, Python Programming, Python for Dummies, Python for Beginners, python crash course) Python: Learn Python In A DAY! - The Ultimate Crash Course to Learning the Basics of Python In No Time (Python, Python Course, Python Development, Python Books, Python for Beginners) Javascript: A Pocket Key to JavaScript for beginners (JavaScript Programming, JavaScript Beginners, JavaScript for web developers, JavaScript Beginners Guide, Java Programming for Beginners) JavaScript: QuickStart Guide - The Simplified Beginner's Guide To JavaScript (JavaScript, JavaScript Programming, JavaScript and Jquery) Javascript: Beginner to Expert with Javascript Programming (Javascript, Javascript Programming, Javascript for Beginners, Java, Java Programming, Java for Beginners,) Javascript: Learn Javascript In A DAY! - The Ultimate Crash Course to Learning the Basics of the Javascript Programming Language In No Time (Javascript, ... JSON, Javascript Development Book 1) PYTHON: Python in 8 Hours, For Beginners, Learn Python Fast! A Smart Way to Learn Python, Plain & Simple, Learn Python Programming Language in Easy Steps, A Beginner's Guide, Start Coding Today! Python: Learn Web Scraping with Python In A DAY! - The Ultimate Crash Course to Learning the Basics of Web Scraping with Python In No Time (Web Scraping ... Python Books, Python for Beginners) Python: Learn Python FAST - The Ultimate Crash Course to Learning the Basics of the Python Programming Language In No Time (Python, Python Programming, ... (Learn Coding Fast with Hands-On Project 7) LINUX: Linux Command Line, Cover all essential Linux commands. A complete introduction to Linux Operating System, Linux Kernel, For Beginners, Learn Linux in easy steps, Fast! A Beginner's Guide Programming Raspberry Pi 3: Getting Started With Python (Programming Raspberry Pi 3, Raspberry Pi 3 User Guide, Python Programming, Raspberry Pi 3 with Python Programming) JAVASCRIPT: Easy JavaScript Programming For Beginners. Your Step-By-Step Guide to Learning JavaScript Programming (JavaScript Series) Linux: Linux Guide for Beginners: Command Line, System and Operation (Linux Guide, Linux System, Beginners Operation Guide, Learn Linux Step-by-Step) Getting Started with Intel Edison: Sensors, Actuators, Bluetooth, and Wi-Fi on the Tiny Atom-Powered Linux Module (Make : Technology on Your Time) Programming #45: Python Programming Professional Made Easy & Android Programming In a Day! (Python Programming, Python Language, Python for beginners, ... Programming Languages, Android Programming) Getting Started Making Metal Jewelry (Getting Started series) Getting Started with Geese (Getting Started with... Book 4) Linux: Linux Mastery. The Ultimate Linux Operating System and Command Line Mastery (Operating System, Linux) JAVASCRIPT: JavaScript in 8 Hours, For Beginners, Learn JavaScript Fast! A Smart Way to Learn JS, Plain & Simple, Learn JS Programming Language in

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