



application development how to get started with Quarkus quickly. You'll become familiar with how Quarkus works within the wider Java ecosystem and discover ways to adapt this framework to your particular needs. You'll learn how to: Shorten the development cycle by enabling live reloading in dev mode Connect to and communicate with Kafka Develop with the reactive programming model Easily add fault tolerance to your services Build your application as a Kubernetes-ready container Ease development with OpenAPI and test a native Quarkus application

Quarkus Cookbook

Comprehensive Projects for Everyday Electronics

Practical Electronic Recipes with Arduino and Raspberry Pi

Arduino Projects for Amateur Radio

JavaScript Cookbook

Software and Hardware Problems and Solutions

This book will show you how to use your Arduino to control a variety of different robots, while providing step-by-step instructions on the entire robot building process. You'll learn Arduino basics as well as the characteristics of different types of motors used in robotics. You also discover controller methods and failsafe methods, and learn how to apply them to your project. The book starts with basic robots and moves into more complex projects, including a GPS-enabled robot, a robotic lawn mower, a fighting bot, and even a DIY Segway-clone. Introduction to the Arduino and other components needed for robotics Learn how to build motor controllers Build bots from simple line-following and bump-sensor bots to more complex robots that can mow your lawn, do battle, or even take you for a ride Please note: the print version of this title is black & white; the eBook is full color.

"In this practical guide, electronics guru Simon Monk takes you under the hood of Arduino and reveals professional programming secrets. Featuring coverage of the Arduino Uno, Leonardo, and Due boards, Programming Arduino Next Steps: Going Further with Sketches shows you how to use interrupts, manage memory, program for the Internet, maximize serial communications, perform digital signal processing, and much more. All of the 75+ example sketches featured in the book are available for download"--

Want to create devices that interact with the physical world? This cookbook is perfect for anyone who wants to experiment with the popular Arduino microcontroller and programming environment. You'll find more than 200 tips and techniques for building a variety of objects and prototypes such as IoT solutions, environmental monitors, location and position-aware systems, and products that can respond to touch, sound, heat, and light. Updated for the Arduino 1.8 release, the recipes in this third edition include practical examples and guidance to help you begin, expand, and enhance your projects right away—whether you're an engineer, designer, artist, student, or hobbyist. Get up to speed on the Arduino board and essential software concepts quickly Learn basic techniques for reading digital and analog signals Use Arduino with a variety of popular input devices and sensors Drive visual displays, generate sound, and control several types of motors Connect Arduino to wired and wireless networks Learn techniques for handling time delays and time measurement Apply advanced coding and memory-handling techniques

Over 60 recipes will help you build smart IoT solutions and surprise yourself with captivating IoT projects you thought only existed in Bond moviesAbout This Book- This book offers key solutions and advice to address the hiccups faced when working on Arduino-based IoT projects in the real world- Take your existing skills and capabilities to the next level by building challenging IoT applications with ease.- Be the tech disruptor you always wanted to be with key recipes that help you solve Arduino IoT related problems smarter and faster.- Put IoT to work through recipes on building Arduino-based devices that take control of your home, health, and life!Who This Book Is ForThis book is primarily for tech enthusiasts and early IoT adopters who would like to make the most of IoT and address the challenges encountered while developing IoT-based applications with Arduino. This book is also good for developers with basic electronics knowledge who need help to successfully build Arduino projects.What You Will Learn- Monitor several Arduino boards simultaneously- Tweet sensor data directly from your Arduino board- Post updates on your Facebook wall directly from your Arduino board- Create an automated access control with a fingerprint sensor- Control your entire home from a single dashboard- Make a GPS tracker that you can track in Google Maps- Build a live camera that streams directly from your robotIn DetailArduino is a powerful and very versatile platform used by millions of people around the world to create DIY electronics projects. It can be connected to a wide variety of sensors and other components, making it the ideal platform to build amazing Internet of Things (IoT) projects on the next wave in the era of computing.This book takes a recipe-based approach, giving you precise examples on how to build IoT projects of all types using the Arduino platform. You will come across projects from several fields, including the popular robotics and home automation domains. Along with being introduced to several forms of interactions within IoT, including projects that directly interact with well-known web services such as Twitter, Facebook, and Dropbox we will also focus on Machine-to-Machine (M2M) interactions, where Arduino projects interact without any human intervention. You will learn to build a few quick and easy-to-make fun projects that will really expand your horizons in the world of IoT and Arduino. Each chapter ends with a troubleshooting recipe that will help you overcome any problems faced while building these projects.By the end of this book, you will not only know how to build these projects, but also have the skills necessary to build your own IoT projects in the future.Style and approachThis book takes a recipe-based approach, giving you precise examples on how to build IoT projects using the Arduino platform. You will learn to build fun and easy projects through a task-oriented approach.

Proven Recipes for Data Analysis, Statistics, and Graphics

Arduino Development Cookbook

Programming Arduino Getting Started with Sketches

Monk's Cookbook

SQL Pocket Guide

Arduino: A Quick-Start Guide

*Get started with the extremely versatile and powerful Arduino Nano 33 BLE Sense, a smart device based on the nRF52840 from Nordic semiconductors. This book introduces you to developing with the device. You'll learn how to access Arduino I/O such as analog and digital I/O, serial communication, SPI and I2C. The book also covers how to access sensor devices on Arduino Nano 33 BLE Sense, how to interact with other external devices over BLE, and build embedded Artificial Intelligence applications. Arduino Nano 33 BLE Sense consists of multiple built-in sensors such as 9-axis inertial, humidity, temperature, barometric, microphone, gesture, proximity, light color and light intensity sensors. With this book, you'll see how this board supports the Bluetooth Low Energy (BLE) network, enabling interactions with other devices over the network. What You'll Learn Prepare and set up Arduino Nano 33 BLE Sense board Operate Arduino Nano 33 BLE Sense board hardware and software Develop programs to access Arduino Nano 33 BLE Sense board I/O Build IoT programs with Arduino Nano 33 BLE Sense board Who This Book Is For Makers, developers, students, and professionals at any level interested in developing with the Arduino Nano 33 BLE Sense board.*

*This pocket guide presents the most crucial information about SQL in a compact and easily accessible format, covering the four commonly used SQL variants--Oracle, IBM DB2, Microsoft SQL Server, and MySQL. Topics include: Data manipulation statements (SELECT, DELETE, INSERT, UPDATE, MERGE) and transaction control statements (START TRANSACTION, SAVEPOINT, COMMIT, ROLLBACK). Common SQL functions (date, numeric, math, trigonometric, string, conversion, aggregate) Such topics as literals, NULLs, CASE expressions, datatype conversion, regular expressions, grouping and summarizing data, joining tables, and writing queries (hierarchical, recursive, union, flashback) and subqueries. Instead of presenting complex and confusing syntax diagrams, the book teaches by example, showing the SQL statements and options that readers are most like to use. All example data is available on the O'Reilly web site. "If you need fast, accurate SQL information, with examples for multiple database engines, be sure to check out this book."--Chris Kempster, Senior DBA and author of SQL Server 2000 for the Oracle DBA, www.chriskempster.com*

*With millions of new users and several new models, the Raspberry Pi ecosystem continues to expand—along with a lot of new questions about the Pi's capabilities. The second edition of this popular cookbook provides more than 240 hands-on recipes for running this tiny low-cost computer with Linux, programming it with Python, and hooking up sensors, motors, and other hardware—including Arduino and the Internet of Things. Prolific hacker and author Simon Monk also teaches basic principles to help you use new technologies with Raspberry Pi as its ecosystem continues to develop. This cookbook is ideal for programmers and hobbyists familiar with the Pi through resources, including Getting Started with Raspberry Pi (O'Reilly). Python and other code examples from the book are available on GitHub. Set up your Raspberry Pi and connect to a network Work with its Linux-based operating system Program Raspberry Pi with Python Give your Pi "eyes" with computer vision Control hardware through the GPIO connector Use Raspberry Pi to run different types of motors Work with switches, keypads, and other digital inputs Use sensors to measure temperature, light, and distance Connect to IoT devices in various ways Create dynamic projects with Arduino*

*Over 60 recipes and solutions for inventors, makers, and budding engineers to create projects using the BeagleBone Black About This Book Learn how to develop applications with the BeagleBone Black and open source Linux software Sharpen your expertise in making sophisticated electronic devices Explore the BeagleBone Black with this easy-to-succeed recipe format Who This Book Is For If you are a hardware, Linux, and/or microcomputing novice, or someone who wants more power and possibilities with product prototypes, electronic art projects, or embedded computing experiments, then this book is for you. It is for Internet of Things enthusiasts who want to use more sophisticated hardware than the Raspberry Pi or the Arduino can provide. Whether you are an engineering student, a DIYer, an inventor, or a budding electronics enthusiast, this book delivers accessible, easy-to-succeed instructions for using an advanced microcomputing platform. What You Will Learn Set up and run the BeagleBone Black for the first time Learn the basics of microcomputing and Linux using the command line and easy kernel mods Make introductory projects with Python, JavaScript, BoneScript, and Node.js Explore physical computing and simple circuits using buttons, LEDs, sensors, and motors Discover the unique features of the BeagleBone Black and its real-time computing functions Build intermediate level audio and video applications Assemble and add ingredients for creating Internet of Things prototypes In Detail There are many single-board controllers and computers such as Arduino, Udoo, or Raspberry Pi, which can be used to create electronic prototypes on circuit boards. However, when it comes to creating more advanced projects, BeagleBone Black provides a sophisticated alternative. Mastering the BeagleBone Black enables you to combine it with sensors and LEDs, add buttons, and marry it to a variety of add-on boards. You can transform this tiny device into the brain for an embedded application or an endless variety of electronic inventions and prototypes. With dozens of how-tos, this book kicks off with the basic steps for setting up and running the BeagleBone Black for the first time, from connecting the necessary hardware and using the command line with Linux commands to installing new software and controlling your system remotely. Following these recipes, more advanced examples take you through scripting, debugging, and working with software source files, eventually working with the Linux kernel. Subsequently, you will learn how to exploit the board's real-time functions. We will then discover exciting methods for using sound and video with the system before marching forward into an exploration of recipes for building Internet of Things projects. Finally, the book finishes with a dramatic arc upward into outer space, when you explore ways to build projects for tracking and monitoring satellites. Style and approach This comprehensive recipe book deconstructs a complex, often confusing piece of technology, and transforms it to become accessible and fun with snappy, unintimidating prose, and extensive easy-to-succeed instructions.*

Arduino Workshop, 2nd Edition

A Year-Round Fun Food Adventure

Step-By-Step Projects for Beginners

Recipes to master Delphi for IoT integrations, cross-platform, mobile and server-side development, 3rd Edition

Beginning C for Arduino, Second Edition

Arduino Software Internals

Beginning C for Arduino, Second Edition is written for those who have no prior experience with microcontrollers or programming but would like to experiment and learn both. Updated with new projects and new boards, this book introduces you to the C programming language, reinforcing each programming structure with a simple demonstration of how you can use C to control the Arduino family of microcontrollers. Author Jack Purdum uses an engaging style to teach good programming techniques using examples that have been honed during his 25 years of university teaching. Beginning C for Arduino, Second Edition will teach you: The C programming language How to use C to control a microcontroller and related hardware How to extend C by creating your own libraries, including an introduction to object-oriented programming During the course of the book, you will learn the basics of programming, such as working with data types, making decisions, and writing control loops. You'll then progress onto some of the trickier aspects of C programming, such as using pointers effectively, working with the C preprocessor, and tackling file I/O. Each chapter ends with a series of exercises and review questions to test your knowledge and reinforce what you have learned.

If you want to build programming and electronics projects that interact with the environment, this book will offer you dozens of recipes to guide you through all the major applications of the Arduino platform. It is intended for programming or electronics enthusiasts who want to combine the best of both worlds to build interactive projects.

If you've ever wanted to build and control electronic devices then learning to program Arduino development boards is the kick start you're looking for! The Arduino Book for Beginners is a tutorial style collection of lessons designed to be simple and easy to follow which uses only the most relevant circuits and programs and assumes nothing about your prior electronics or programming experience. The book also comes with access to over 15 supplemental video lessons to help drive home concepts. These supplemental video lessons are pulled from training at Programming Electronics Academy, the premiere online training website for learning to program Arduino. What you will Learn: How to program your Arduino...from variables to arrays, for loops and if statements How to make your Arduino respond to sensors How to communicate to your computer with the Arduino How to build teleporters, levitating fortresses and nuclear reactors (maybe a stretch...) This book covers the most useful, enlightening and simplest examples to get you started on the road to hacking just about anything. What to Expect: Step-by-step instructions to walk you through building circuits and programming your Arduino Each line of code in the programs are discussed to maximize your understanding of the fundamentals Repetition of the basic programming building blocks are used to increase your retention of the material Only a handful of additional parts are necessary to complete the course lessons, many of which are reused from lesson to lesson, reducing your investment in learning how to use Arduino The simple building blocks you learn will be put together to build more complex examples Each lesson ends with suggestions of experiments to try on your own. These are generally simple changes that make you think about the operation of the Arduinos and the underlying programming language. It is doing these where you will learn the most. Get Started Now: There is no better time to jump in then now! The Arduino community is vibrant and growing.

In Beginning Arduino, you will learn all about the popular Arduino microcontroller by working your way through an amazing set of 50 cool projects. You'll progress from a complete beginner regarding Arduino programming and electronics knowledge to intermediate skills and the confidence to create your own amazing Arduino projects. Absolutely no experience in programming or electronics required! Rather than requiring you to wade through pages of theory before you start making things, this book has a hands-on approach. You will dive into making projects right from the start, learning how to use various electronic components and how to program the Arduino to control or communicate with those components. Each project is designed to build upon the knowledge learned in earlier projects and to further your knowledge in programming as well as skills with electronics. By the end of the book you will be able create your own projects confidently and with creativity. Please note: the print version of this title is black & white; the eBook is full color. You can download the color diagrams in the book from <http://www.apress.com/9781430232407>

Arduino Applied

Arduino Essentials

Electronics Cookbook

A Hands-on Introduction with 65 Projects

Beginning Arduino

Beginning Robotics with Raspberry Pi and Arduino

Quickly learn and employ practical recipes for developing real-world, cross-platform applications using Delphi. Key Features Get to grips with Delphi to build and deploy various cross-platform applications Design and deploy real-world apps by implementing a single source codebase Build robust and optimized GUI applications with ease Book Description Delphi is a cross-platform integrated development environment (IDE) that supports rapid application development on different platforms, saving you the pain of wandering amid GUI widget details or having to tackle inter-platform incompatibilities. Delphi Cookbook begins with the basics of Delphi and gets you acquainted with JSON format strings, XSLT transformations, Unicode encodings, and various types of streams. You'll then move on to more advanced topics such as developing higher-order functions and using enumerators and run-time type information (RTTI). As you make your way through the chapters, you'll understand Delphi RTL functions, use FireMonkey in a VCL application, and cover topics such as multithreading, using parallel programming library and deploying Delphi on a server. You'll take a look at the new feature of WebBroker Apache modules, join the mobile revolution with FireMonkey, and learn to build data-driven mobile user interfaces using the FireDAC database access framework. This book will also show you how to integrate your apps with Internet of Things (IoT). By the end of the book, you will have become proficient in Delphi by exploring its different aspects such as building cross-platforms and mobile applications, designing server-side programs, and integrating these programs with IoT. What you will learn Develop visually stunning applications using FireMonkey Deploy LiveBinding effectively with the right object-oriented programming (OOP) approach Create RESTful web services that run on Linux or Windows Build mobile apps that read data from a remote server efficiently Call platform native API on Android and iOS for an unpublished API Manage software customization by making better use of an extended RTTI Integrate your application with IOT Who this book is for Delphi Cookbook is for intermediate developers with a basic knowledge of Delphi who want to discover and understand all the development possibilities offered by it.

The bestselling beginner Arduino guide, updated with new projects! Exploring Arduino makes electrical engineering and embedded software accessible. Learn step by step everything you need to know about electrical engineering, programming, and human-computer interaction through a series of increasingly complex projects. Arduino guru Jeremy Blum walks you through each build, providing code snippets and schematics that will remain useful for future projects. Projects are accompanied by downloadable source code, tips and tricks, and video tutorials to help you master Arduino. You'll gain the skills you need to develop your own microcontroller projects! This new 2nd edition has been updated to cover the rapidly-expanding Arduino ecosystem, and includes new full-color graphics for easier reference. Servo motors and stepper motors are covered in richer detail, and you'll find more excerpts about technical details behind the topics covered in the book. Wireless connectivity and the Internet-of-Things are now more prominently featured in the advanced projects to reflect Arduino's growing capabilities. You'll learn how Arduino compares to its competition, and how to determine which board is right for your project. If you're ready to start creating, this book is your ultimate guide! Get up to date on the evolving Arduino hardware, software, and capabilities Build projects that interface with other devices—wirelessly! Learn the basics of electrical engineering and programming Access downloadable materials and source code for every project Whether you're a first-timer just starting out in electronics, or a pro looking to mock-up more complex builds, Arduino is a fantastic tool for building a variety of devices. This book offers a comprehensive tour of the hardware itself, plus in-depth introduction to the various peripherals, tools, and techniques used to turn your little Arduino device into something useful, artistic, and educational. Exploring Arduino is your roadmap to adventure—start your journey today!

Presents an introduction to the open-source electronics prototyping platform.

Beginning Arduino Programming allows you to quickly and intuitively develop your programming skills through sketching in code. This clear introduction provides you with an understanding of the basic framework for developing Arduino code, including the structure, syntax, functions, and libraries needed to create future projects. You will also learn how to program your Arduino interface board to sense the physical world, to control light, movement, and sound, and to create objects with interesting behavior. With Beginning Arduino Programming, you'll get the knowledge you need to master the fundamental aspects of writing code on the Arduino platform, even if you have never before written code. It will have you ready to take the next step: to explore new project ideas, new kinds of hardware, contribute back to the open source community, and even take on more programming languages.

Cisco IOS Cookbook

Exploring Arduino

Arduino Book for Beginners

Recipes to Begin, Expand, and Enhance Your Projects

*Program Arduino with ease! Using clear, easy-to-follow examples, Programming Arduino: Getting Started with Sketches reveals the software side of Arduino and explains how to write well-crafted sketches using the modified C language of Arduino. No prior programming experience is required! The downloadable sample programs featured in the book can be used as-is or modified to suit your purposes. Understand Arduino hardware fundamentals Install the software, power it up, and upload your first sketch Learn C language basics Write functions in Arduino sketches Structure data using arrays and strings Use Arduino's digital and analog inputs and outputs in your programs Work with the Standard Arduino Library Write sketches that can store data Program LCD displays Use an Ethernet shield to enable Arduino to function as a web server Write your own Arduino libraries In December 2011, Arduino 1.0 was released. This changed a few things that have caused two of the sketches in this book to break. The change that has caused trouble is that the classes 'Server' and*

'Client' have been renamed to 'EthernetServer' and 'EthernetClient' respectively. To fix this: Edit sketches 10-01 and 10-02 to replace all occurrences of the word 'Server' with 'EthernetServer' and all occurrences of 'Client' with 'EthernetClient'. Alternatively, you can download the modified sketches for 10-01 and 10-02 from here: <http://www.arduinobook.com/arduino-1-0> Make Great Stuff! TAB, an imprint of McGraw-Hill Professional, is a leading publisher of DIY technology books for makers, hackers, and electronics hobbyists. Long-awaited revision of this best-selling book on the Arduino electronics platform (35,000+ copies sold). Readers gain an in-depth understanding of the Arduino -- beyond just making simple projects. The Arduino is an affordable, flexible, open source microcontroller platform designed to make it easy for hobbyists to use electronics in homemade projects. With an almost unlimited range of input and output add-ons, sensors, indicators, displays, motors, and more, the Arduino offers you countless ways to create devices that interact with the world around you. This second edition of Arduino Workshop has been updated for the latest version of Arduino IDE. It begins with an overview of the Arduino system and then moves on to coverage of various electronic components and concepts, including revised content reflecting advances in displays, touchscreens, sensors, motors, GPS, and wireless technology. You'll learn about new hardware and find updated projects that cover areas like touchscreens and LED displays, robotics, using sensors with wireless data links, and even controlling projects remotely through a cell phone. Brand new chapters include coverage of MAX7219-based LED numeric displays, LED matrix modules, and creating your own Arduino libraries. Throughout the book, hands-on projects reinforce what you've learned and show you how to apply that knowledge. As your understanding grows, the projects increase in complexity and sophistication. Along the way, you'll learn valuable lessons in coding, including how to create your own Arduino libraries to efficiently reuse code across multiple projects. Among the book's 65 projects are useful devices like:

- A digital thermometer that charts temperature changes on an LCD
- A GPS logger that records data from your travels, which can be displayed on Google Maps
- A handy tester that lets you check the voltage of any single-cell battery
- A keypad-controlled lock that requires a secret code to open

You'll also learn to build Arduino toys and games like:

- An electronic version of the classic six-sided die
- A binary quiz game that challenges your number conversion skills
- A motorized remote control car with collision detection to keep it from crashing

Arduino Workshop will teach you the tricks and design principles of a master craftsman. Whatever your skill level, you'll have fun as you learn to harness the power of the Arduino for your own DIY projects.