

Python Per Raspberry La Guida Alluso Di Python Per Raspberry Pi

Piccolo ed economico, Raspberry Pi è il sogno di qualunque appassionato di informatica, ma anche di robotica: basato su software open source, questo microcomputer si alimenta come uno smartphone, è completamente programmabile e ha un costo irrisorio. Questo manuale, il primo in italiano, accompagna alla scoperta e all'utilizzo di Raspberry Pi in applicazioni didattiche, hobbistiche e ludiche. Che tu lo voglia utilizzare al posto di un PC o come componente di un progetto hardware imparerai a installare il sistema operativo, a collegare Raspberry Pi a TV, hard disk, mouse, tastiere e altre periferiche esterne, a scrivere semplici programmi e a realizzare prototipi interattivi funzionanti. La trattazione dei temi più complessi – tra cui le basi indispensabili dell'elettronica e della programmazione – è resa più semplice grazie a diagrammi, esempi e immagini.

Congratulazioni! Se vuoi esplorare il mondo del Raspberry Pi 4 siamo sicuri che scoprirai un universo in cui programmare e costruire giochi, controllare robot e macchine e condividere le tue esperienze con altri entusiasti del Raspberry Pi. Il Raspberry Pi 4 ha capacità sorprendenti e può essere usato come media center, file server, console da retrogaming, router, blocco per i popup a livello di rete, solo per iniziare, ma anche molto di più! Ci sono centinaia di progetti in rete per costruire tablet, laptop, telefoni, robot, specchi intelligenti, per fare foto ai limiti dello spazio, per eseguire esperimenti sulla Stazione Spaziale Internazionale. Con il Pi 4, che è più veloce, può decodificare i video in 4k, ha un migliore storage via USB 3.0 e una rete più veloce con la Gigabit Ethernet, ci si può fare molto di più. Il Pi 4 è anche il primo Pi che supporta due schermi insieme, fino a due display 4K@30, perfetto per i creativi che hanno bisogno di più spazio sul desktop. Non serve essere uno scienziato per iniziare a sviluppare un progetto proprio: il MANUALE COMPLETO RASPBERRY PI 4 ti aiuterà a rivoluzionare il modo in cui intendi l'informatica! Ecco un'anteprima di cosa imparerai: -Configurare il Raspberry Pi 4-Installare il software-Installare Windows 10 sul Raspberry Pi 4-I comandi del Raspberry Pi-Come costruire un robot-Come creare dei giochi-Installare i pacchetti-Creare ed eseguire uno script di shell-Basi di programmazione in Python-Eseguire programmi python-Progetti Raspberry pi-Molto, molto altro! Sei pronto a imbarcarti nella più grande avventura digitale e a sfruttare al massimo il tuo Raspberry Pi 4? Aggiungi ora questo libro alla tua libreria!

This book provides a complete and comprehensive reference/guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. The text illustrates the breadth of the modeling and analysis capabilities that are supported by the software and support of complex real-world applications. Pyomo is an open source software package for formulating and solving large-scale optimization and operations research problems. The text begins with a tutorial on simple linear and integer programming models. A detailed reference of Pyomo's modeling components is illustrated with extensive examples, including a discussion of how to load data from data sources like spreadsheets and databases. Chapters describing advanced modeling capabilities for nonlinear and stochastic optimization are also included. The Pyomo software provides familiar modeling features within Python, a powerful dynamic programming language that has a very clear, readable syntax and intuitive object orientation. Pyomo includes Python classes for defining sparse sets, parameters, and variables, which can be used to formulate algebraic expressions that define objectives and constraints. Moreover, Pyomo can be used from a command-line interface and within Python's interactive command environment, which makes it easy to create Pyomo models, apply a variety of optimizers, and examine solutions. The software supports a different modeling approach than commercial AML (Algebraic Modeling Languages) tools, and is designed for flexibility, extensibility, portability, and maintainability but also maintains the central ideas in modern AMLs.

Learn How To Get The Most Out Of Your Raspberry Pi With This Ultimate Guide! Do you want to get the most out of the worlds fastest selling computer? Learn the fundamentals of the raspberry pi today! Basic and Advanced Raspberry Pi Guide!! You Will Learn The Following: What Is The Raspberry Pi The Benefits of using the Raspberry Pi Downloading and using the Raspberry Pi Downloading software on the Raspberry Pi Tips And Tricks To Getting The Most From Your Raspberry Pi All Round Guide To Becoming Raspberry Pi Geek And Much Much More! Whether you just want to learn more about the raspberry pi or already understand it and want extra help becoming more aware of what it can do, this book is for you. So don't delay it any longer. Take This Opportunity By Buying This Raspberry Pi Guide Now! Don't Delay And Scroll Up To Buy With 1 Click

Get started with the smallest, cheapest, and highest-utility Pi ever—Raspberry Pi Zero About This Book Get started with Raspberry Pi Zero and put all of its exciting features to use Create fun games and programs with little or no programming experience Learn to use this super-tiny PC to control hardware and software for work, play, and everything else Who This Book Is For This book is for hobbyists and programmers who are taking their first steps toward using Raspberry Pi Zero. No programming experience is required, although some Python programming experience might be useful. What You Will Learn Understand how to initially download the operating system and set up Raspberry Pi Zero Find out how to control the GPIO pins of Raspberry Pi Zero to control LED circuits Get to grips with adding hardware to the GPIO to control more complex hardware such as motors Add USB control hardware to control a complex robot with 12 servos Include speech recognition so that projects can receive commands Enable the robot to communicate with the world around it by adding speech output Control the robot from a distance and see what the robot is seeing by adding wireless communication Discover how to build a Robotic hand and a Quadcopter In Detail Raspberry Pi Zero is half the size of Raspberry Pi A, only with twice the utility. At just three centimeters wide, it packs in every utility required for full-fledged computing tasks. This practical tutorial will help you quickly get up and running with Raspberry Pi Zero to control hardware and software and write simple programs and games. You will learn to build creative programs and exciting games with little or no programming experience. We cover all the features of Raspberry Pi Zero as you discover how to configure software and hardware, and control external devices. You will find out how to navigate your way in Raspbian, write simple Python scripts, and create simple DIY programs. Style and approach This is a practical and fun 'getting started' tutorial that will guide you through everything new that the Raspberry Pi has to offer.

Leverage Python and Raspberry Pi to create complex IoT applications capable of creating and detecting movement and measuring distance, light, and a host of other environmental conditions Key Features Learn the fundamentals of electronics and how to integrate them with a Raspberry Pi Understand how to build RESTful APIs, WebSocket APIs, and MQTT-based applications Explore alternative approaches to structuring IoT applications with Python Book Description The age of connected devices is here, be it fitness bands or smart homes. It's now more important than ever to understand how hardware components interact with the internet to collect and analyze user data. The Internet of Things (IoT), combined with the popular open source language Python, can be used to build powerful and intelligent IoT systems with intuitive interfaces. This book consists of three parts, with the first focusing on the "Internet" component of IoT. You'll get to grips with end-to-end IoT app development to control an LED over the internet, before learning how to build RESTful APIs, WebSocket APIs, and MQTT services in Python. The second part delves into the fundamentals behind electronics and GPIO interfacing. As you progress to the last part, you'll focus on the "Things" aspect of IoT, where you will learn how to connect and control a range of electronic sensors and actuators using Python. You'll also explore a variety of topics, such as motor control, ultrasonic sensors, and temperature measurement. Finally, you'll get up to speed with advanced IoT programming techniques in Python, integrate with IoT visualization and automation platforms, and build a comprehensive IoT project. By the end of this book, you'll be well-versed with IoT development and have the knowledge you need to build sophisticated IoT systems using Python. What

you will learn Understand electronic interfacing with Raspberry Pi from scratch Gain knowledge of building sensor and actuator electronic circuits Structure your code in Python using Async IO, pub/sub models, and more Automate real-world IoT projects using sensor and actuator integration Integrate electronics with ThingSpeak and IFTTT to enable automation Build and use RESTful APIs, WebSockets, and MQTT with sensors and actuators Set up a Raspberry Pi and Python development environment for IoT projects Who this book is for This IoT Python book is for application developers, IoT professionals, or anyone interested in building IoT applications using the Python programming language. It will also be particularly helpful for mid to senior-level software engineers who are experienced in desktop, web, and mobile development, but have little to no experience of electronics, physical computing, and IoT.

You've bested creepers, traveled deep into caves, and maybe even gone to The End and back—but have you ever transformed a sword into a magic wand? Built a palace in the blink of an eye? Designed your own color-changing disco dance floor? In *Learn to Program with Minecraft®*, you'll do all this and more with the power of Python, a free language used by millions of professional and first-time programmers! Begin with some short, simple Python lessons and then use your new skills to modify Minecraft to produce instant and totally awesome results. Learn how to customize Minecraft to make mini-games, duplicate entire buildings, and turn boring blocks into gold. You'll also write programs that: –Take you on an automated teleportation tour around your Minecraft world –Build massive monuments, pyramids, forests, and more in a snap! –Make secret passageways that open when you activate a hidden switch –Create a spooky ghost town that vanishes and reappears elsewhere –Show exactly where to dig for rare blocks –Cast a spell so that a cascade of flowers (or dynamite if you're daring!) follows your every move –Make mischief with dastardly lava traps and watery curses that cause huge floods Whether you're a Minecraft megafan or a newbie, you'll see Minecraft in a whole new light while learning the basics of programming. Sure, you could spend all day mining for precious resources or building your mansion by hand, but with the power of Python, those days are over! Requires: Windows 7 or later; OS X 10.10 or later; or a Raspberry Pi. Uses Python 3

Learn how to develop your own applications to monitor or control instrumentation hardware. Whether you need to acquire data from a device or automate its functions, this practical book shows you how to use Python's rapid development capabilities to build interfaces that include everything from software to wiring. You get step-by-step instructions, clear examples, and hands-on tips for interfacing a PC to a variety of devices. Use the book's hardware survey to identify the interface type for your particular device, and then follow detailed examples to develop an interface with Python and C. Organized by interface type, data processing activities, and user interface implementations, this book is for anyone who works with instrumentation, robotics, data acquisition, or process control. Understand how to define the scope of an application and determine the algorithms necessary, and why it's important Learn how to use industry-standard interfaces such as RS-232, RS-485, and GPIB Create low-level extension modules in C to interface Python with a variety of hardware and test instruments Explore the console, curses, TkInter, and wxPython for graphical and text-based user interfaces Use open source software tools and libraries to reduce costs and avoid implementing functionality from scratch

Expand your basic knowledge of Python and use PyGame to create fast-paced video games with great graphics and sounds. This second edition shows how you can integrate electronic components with your games using the build-in general purpose input/output (GPIO) pins and some Python code to create two new games. You'll learn about object-oriented programming (OOP) as well as design patterns, such as model-view-controller (MVC) and finite-state machines (FSMs). Whether using Windows, macOS, Linux, or a Raspberry Pi, you can unleash the power of Python and PyGame to create great looking games. The book also includes complete code listings and explanations for "Bricks," "Snake," and "Invaders"--Three fully working games. These allow you to get started in making your own great games and then modify them or build your own exciting titles. The concepts are further explained using games such as "Copycat," where the player must concentrate and repeat the sequence of lights, and "Couch Quiz," in which PyGame and electronic components create a quiz game for 4 players.

Scopri tutti i segreti e tutte le funzionalità del Raspberry Pi! Ti piacerebbe conoscere tutte le potenzialità di Raspberry Pi? Vuoi imparare a costruire progetti e scoprire come funzionano i computer? Vuoi scoprire come fare per progettare giochi e costruire robot? Con le sue grandissime funzionalità e il metodo semplice, il Raspberry Pi è diventato un fenomeno che interessa persone di tutte le età. Grazie a questo libro scoprirai tutto quello che è necessario sapere sul vostro Raspberry Pi. Dopo una prima introduzione per familiarizzare con esso, capitolo dopo capitolo ti verranno date tutte le istruzioni per imparare a programmare, creare progetti e costruire robot. Questo computer grande quanto una carta di credito è in grado di fare notevoli attività dalla navigazione in internet, all'ascolto di musica ma non solo, è infatti progettato per insegnare a tutti come programmare con i vari linguaggi. Le istruzioni chiare e dettagliate e gli esempi pratici ti condurranno in un percorso di apprendimento facile e veloce. Alla fine della lettura sarai in grado di ottenere il massimo dal tuo Raspberry Pi. Ecco che cosa otterrai da questo libro: - Che cosa è Raspberry Pi - Da cosa è composto: tutte le sue parti - Le porte e le periferiche: caratteristiche e funzionalità - I passaggi per configurare il software di Raspberry Pi - Come eseguire Raspbian - Il desktop: caratteristiche e interfaccia - Gli step per l'utilizzo del Browser - Come gestire i file salvati - Le principali sottodirectory - I passaggi per programmare con Python - Condizioni e variabili - GPIO - Come accendere un Led - I passaggi per installare programmi - Come connettere audio, rete e display - E molto di più! La società moderna ha sempre più bisogno di programmatori. Raspberry Pi è tutto quello che serve per creare progetti entusiasmanti e funzionali. Quindi cosa aspetti? Scorri verso l'alto e fai clic su "Acquista ora"!

Il volume offre un percorso di progetti per esplorare le infinite possibilità di Raspberry Pi, Single Board Computer più famoso al mondo

Best-selling author Al Sweigart shows you how to easily build over 80 fun programs with minimal code and maximum creativity. If you've mastered basic Python syntax and you're ready to start writing programs, you'll find *The Big Book of Small Python Projects* both enlightening and fun. This collection of 81 Python projects will have you making digital art, games, animations, counting programs, and more right away. Once you see how the code works, you'll practice re-creating the programs and experiment by adding your own custom touches. These simple, text-based programs are 256 lines of code or less. And whether it's a vintage screensaver, a snail-racing game, a clickbait headline generator, or animated strands of DNA, each project is designed to be self-contained so you can easily share it online. You'll create: • Hangman, Blackjack, and other games to play against your friends or the computer • Simulations of a forest fire, a million dice rolls, and a Japanese abacus • Animations like a virtual fish tank, a rotating cube, and a bouncing DVD logo screensaver • A first-person 3D maze game • Encryption programs that use ciphers like ROT13 and Vigenère to conceal text If you're tired of standard step-by-step tutorials, you'll love the learn-by-doing approach of *The Big Book of Small Python Projects*. It's proof that good things come in small programs!

Raspberry Pi Cookbook for Python Programmers is written in a Cookbook format, presenting examples in the style of recipes. This allows you to go directly to your topic of interest, or follow topics throughout a chapter to gain a thorough in-depth knowledge. The aim of this book is to bring you a broad range of Python 3 examples and practical ideas which you can develop to suit your own requirements. By modifying and combining the examples to create your own projects you learn far more effectively with a much greater understanding. Each chapter is designed to become a foundation for further experimentation and discovery of the topic, providing you with the tools and information to jump right in. Readers are expected to be familiar with programming concepts and Python (where possible Python 3 is used), although beginners should manage with the help of a good Python reference book and background reading. No prior knowledge of the Raspberry Pi or electronics is required; however for the hardware sections you will need some basic electronic components/household tools to build some of the projects.

La guida completa per imparare il computing e la programmazione con Raspberry Pi. Nato come un metodo facile e divertente per giovani appassionati e adulti curiosi, il Raspberry Pi si è presto evoluto in computer incredibilmente robusto, dalle dimensioni di una carta di credito, che può essere usato per qualunque attività: dalla riproduzione di video HD, all'hacking dell'hardware, fino alla programmazione vera e propria. Questo libro, best seller internazionale scritto da uno dei creatori del Raspberry Pi, vi offre tutto quel che dovete sapere sul vostro Raspberry Pi.

Understand how Node-RED, the free and open-source flow-based programming tool, is used for handling IoT data and how it allows programmers of any level to interconnect I/O, APIs, and online services in new and exciting ways. This book is a comprehensive introduction to Node-RED and will get you up to speed with building web apps in no time.

The new edition of an introduction to computer programming within the context of the visual arts, using the open-source programming language Processing; thoroughly updated throughout. The visual arts are rapidly changing as media moves into the web, mobile devices, and architecture. When designers and artists learn the basics of writing software, they develop a new form of literacy that enables them to create new media for the present, and to imagine future media that are beyond the capacities of current software tools. This book introduces this new literacy by teaching computer programming within the context of the visual arts. It offers a comprehensive reference and text for Processing (www.processing.org), an open-source programming language that can be used by students, artists, designers, architects, researchers, and anyone who wants to program images, animation, and interactivity. Written by Processing's cofounders, the book offers a definitive reference for students and professionals.

Tutorial chapters make up the bulk of the book; advanced professional projects from such domains as animation, performance, and installation are discussed in interviews with their creators. This second edition has been thoroughly updated. It is the first book to offer in-depth coverage of Processing 2.0 and 3.0, and all examples have been updated for the new syntax. Every chapter has been revised, and new chapters introduce new ways to work with data and geometry. New "synthesis" chapters offer discussion and worked examples of such topics as sketching with code, modularity, and algorithms. New interviews have been added that cover a wider range of projects. "Extension" chapters are now offered online so they can be updated to keep pace with technological developments in such fields as computer vision and electronics. Interviews SUE.C, Larry Cuba, Mark Hansen, Lynn Hershman Leeson, Jürg Lehni, LettError, Golan Levin and Zachary Lieberman, Benjamin Maus, Manfred Mohr, Ash Nehru, Josh On, Bob Sabiston, Jennifer Steinkamp, Jared Tarbell, Steph Thirion, Robert Winter

Nato come un metodo facile e divertente per giovani appassionati, il piccolo ma straordinario Raspberry Pi, con oltre 9 milioni di unità vendute, è diventato presto un fenomeno che interessa tutte le età. Raspberry Pi. La guida ufficiale vi offre tutto quello che dovete sapere sul vostro Raspberry Pi, con istruzioni passo passo realizzate dal creatore del Pi stesso, un autentico guru nel settore. Questo computer dalle dimensioni simili a quelle di una carta di credito può essere usato per qualunque attività: dalla riproduzione di video HD, all'hacking dell'hardware, fino alla programmazione vera e propria. Non avete esperienza? Nessun problema! Le istruzioni chiare e i suggerimenti pratici vi guideranno attraverso i vari passaggi, così che possiate ottenere il massimo dal vostro Raspberry Pi. Aggiornato alle ultime versioni della scheda Raspberry Pi e del relativo software, questa nuova edizione ti mostrerà come: installare il software e connettere display, audio, rete e molto altro; padroneggiare la terminologia e le convenzioni di Linux; scrivere il vostro software usando Scratch e Python; installare, eseguire ed esplorare Minecraft Pi Edition; eseguire l'hacking dell'hardware e risolvere i problemi più comuni; personalizzare il Pi con software, hardware e configurare la rete; estendere le capacità del Pi con add-on come i dongle Wi-Fi, un touch screen e molto altro ancora.

This open access book offers an initial introduction to programming for scientific and computational applications using the Python programming language. The presentation style is compact and example-based, making it suitable for students and researchers with little or no prior experience in programming. The book uses relevant examples from mathematics and the natural sciences to present programming as a practical toolbox that can quickly enable readers to write their own programs for data processing and mathematical modeling. These tools include file reading, plotting, simple text analysis, and using NumPy for numerical computations, which are fundamental building blocks of all programs in data science and computational science. At the same time, readers are introduced to the fundamental concepts of programming, including variables, functions, loops, classes, and object-oriented programming. Accordingly, the book provides a sound basis for further computer science and programming studies.

Questa pubblicazione ha lo scopo di mettere a disposizione un materiale utile e informativo. Non è destinato a diagnosticare, trattare, curare o prevenire qualsiasi problema o condizione di salute, e non è neanche destinata a sostituire la consulenza di un medico Secondo uno studio realizzato da doTERRA (una società che è dedicata alla distribuzione di oli essenziali di prima qualità per clienti internazionali), i cani occupano uno dei primi posti nella classifica degli animali che rispondono molto bene agli effetti degli oli essenziali. Può risalire al fatto che questi quadrupedi hanno un eccezionale senso dell'olfatto Nel campo della medicina veterinaria e aromaterapia per animali domestici, anche se ci sono ancora pareri contrari, l'uso di oli essenziali per i cani è noto per essere un approccio praticato sempre di più da alcuni veterinari. Gli oli essenziali per i cani fanno miracoli in profondità - e non in maniera affrettata. Hanno bisogno di tempo per penetrare le membrane cellulari degli animali di compagnia. Tenendo presente questo, si può essere sicuri che sono state raggiunte le parti vitali del cervello, fatto che può portare ad influenzare un benessere mentale. Pertanto, non è un mistero il motivo per cui gli oli sono altrettanti trucchi di magia per la psiche.

Il movimento dei maker, le stampanti 3D e Arduino hanno suscitato un nuovo interesse per l'hobbistica elettronica. Sempre più appassionati, curiosi, inventori e innovatori si avvicinano a nuove e potenti tecnologie per creare prototipi e circuiti complessi. Le potenzialità offerte dai nuovi strumenti sono innumerevoli e a volte strabilianti. Chiunque può programmare una scheda Arduino usando un semplice cavo USB e costruire droni, robot e stampanti 3D. Per realizzare progetti veramente completi, però, servono un po' di esperienza e alcune conoscenze di base che non sempre sono facilmente reperibili in Rete. Questo libro non vuole essere un nuovo testo su Arduino o Raspberry Pi, trattati qui in modo marginale, ma propone al lettore una serie di approfondimenti teorici e pratici per comprendere l'affascinante materia dell'elettronica ed essere autonomi nello sviluppo dei propri progetti. Il testo include sezioni teoriche necessarie per spiegare e capire gli esperimenti oltre a esercizi e applicazioni pratiche. Che componenti si possono usare oltre a LED e pulsanti? Come funziona un transistor e a cosa serve? Come si amplifica un segnale? Come si alimenta un prototipo? Tutto quello che serve, insomma, per andare oltre la programmazione di Arduino e diventare un vero mago dell'elettronica per makers. Per maker s'intende chi produce un manufatto in modo creativo, solitamente connesso con il mondo informatico. Il termine, che all'inizio era usato soprattutto nelle community di programmatori hardware open source e software, indica gli artigiani del Terzo millennio, appassionati di hi-tech, design, arte, modelli di business alternativi. Un maker non ha età, può essere l'adolescente appassionato di elettronica e informatica o il professionista. Per diventare un maker non c'è bisogno di studi particolari, l'importante è avere passione, avere voglia di fare.

Questo libro è un libro per tutti, per ragazzi e ragazze che vogliono cimentarsi nel progettare e costruire i loro manufatti digitali; per chi si avvicina al mondo dei makers e all'elettronica per la prima volta e cerca un manuale di riferimento; per i professionisti per avere un testo da consultare.

The Hitchhiker's Guide to Python takes the journeyman Pythonista to true expertise. More than any other language, Python was created with the philosophy of simplicity and parsimony. Now 25 years old, Python has become the primary or secondary language (after SQL) for many business users. With popularity comes diversity—and possibly dilution. This guide, collaboratively written by over a hundred members of the Python community, describes best practices currently used by package and application developers. Unlike other books for this audience, The Hitchhiker's Guide is light on reusable code and heavier on design philosophy, directing the reader to excellent sources that already exist.

Make the most out of the world's first truly compact computer It's the size of a credit card, it can be charged like a smartphone, it runs on open-source Linux, and it holds the promise of bringing programming and playing to millions at low cost. And now you can learn how to use this amazing computer from its co-creator, Eben Upton, in Raspberry Pi User Guide. Cowritten with Gareth Halfacree, this guide gets you up and running on Raspberry Pi, whether you're an educator, hacker, hobbyist, or kid. Learn how to connect your Pi to other hardware, install software, write basic programs, and set it up to run robots, multimedia centers, and more. Gets you up and running on Raspberry Pi, a high-tech computer the size of a credit card Helps educators teach students how to program Covers connecting Raspberry Pi to other hardware, such as monitors and keyboards, how to install software, and how to configure Raspberry Pi Shows you how to set up Raspberry Pi as a simple productivity computer, write basic programs in Python, connect to servos and sensors, and drive a robot or multimedia center Adults, kids, and devoted hardware hackers, now that you've got a Raspberry Pi, get the very most out of it with Raspberry Pi User Guide.

The financial industry has adopted Python at a tremendous rate recently, with some of the largest investment banks and hedge funds using it to build core trading and risk management systems. This hands-on guide helps both developers and quantitative analysts get started with Python, and guides you through the most important aspects of using Python for quantitative finance. Using practical examples through the book, author Yves Hilpisch also shows you how to develop a full-fledged framework for Monte Carlo simulation-based derivatives and risk analytics, based on a large, realistic case study. Much of the book uses interactive IPython Notebooks, with topics that include: Fundamentals: Python data structures, NumPy array handling, time series analysis with pandas, visualization with matplotlib, high performance I/O operations with PyTables, date/time information handling, and selected best practices Financial topics: mathematical techniques with NumPy, SciPy and SymPy such as regression and optimization; stochastics for Monte Carlo simulation, Value-at-Risk, and Credit-Value-at-Risk calculations; statistics for normality tests, mean-variance portfolio optimization, principal component analysis (PCA), and Bayesian regression Special topics: performance Python for financial algorithms, such as vectorization and parallelization, integrating Python with Excel, and building financial applications based on Web technologies

In this Raspberry Pi manual you will learn how to install and configure a Raspberry Pi and much more. First we will discuss the history and background of the Raspberry Pi. Then we will go through all currently available models, technical data, interfaces, interesting software, hardware projects and available operating systems. With this Raspberry Pi beginners guide you will build or expand your knowledge. If your goal is to use the Raspberry Pi to implement projects for your everyday or professional life, then this manual is perfect for you. After completing this manual, you have learned so much about the Raspberry Pi, that you can setup a Raspberry Pi independently and become creative with your own projects.

This second edition of Foundations of Python Network Programming targets Python 2.5 through Python 2.7, the most popular production versions of the language. Python has made great strides since Apress released the first edition of this book back in the days of Python 2.3. The advances required new chapters to be written from the ground up, and others to be extensively revised. You will learn fundamentals like IP, TCP, DNS and SSL by using working Python programs; you will also be able to familiarize yourself with infrastructure components like memcached and message queues. You can also delve into network server designs, and compare threaded approaches with asynchronous event-based solutions. But the biggest change is this edition's expanded treatment of the web. The HTTP protocol is covered in extensive detail, with each feature accompanied by sample Python code. You can use your HTTP protocol expertise by studying an entire chapter on screen scraping and you can then test lxml and BeautifulSoup against a real-world web site. The chapter on web application programming now covers both the WSGI standard for component interoperability, as well as modern web frameworks like Django. Finally, all of the old favorites from the first edition are back: E-mail protocols like SMTP, POP, and IMAP get full treatment, as does XML-RPC. You can still learn how to code Python network programs using the Telnet and FTP protocols, but you are likely to appreciate the power of more modern alternatives like the paramiko SSH2 library. If you are a Python programmer who needs to learn the network, this is the book that you want by your side.

Gli appassionati di tutto il mondo usano il Rasperry Pi per vari progetti come Media center o per realizzare una console per giochi retrò così come la riproduzione multimediale di video HD. Oppure si può utilizzare il dispositivo come un server Web, un server di stampa, una telecamera di stop motion, una fotocamera time-lapse digitale, un server di visualizzazione foto, un controller NAS, un computer per la domotica. Le possibilità sono infinite! In questo libro verrà spiegato passo per passo cosa è Raspberry Pi, quali sono i suoi accessori e le sue caratteristiche, come installare il sistema operativo Raspbian, come programmare in Python ed in Node-RED per realizzare progetti semplici e complessi. Vedremo come far interagire Raspberry Pi con il mondo esterno con l'uso di sensori, relè, altre schede come Arduino, videocamere, e display. Come creare applicazioni IoT che si aggiornano in tempo reale e consultabili da remoto tramite connessione ad internet. E molto altro ancora.

An up-to-date guide to creating your own fun and useful Raspberry Pi™ programs This fully updated guide shows how to create inventive programs and fun games on your powerful Raspberry Pi—with no programming experience required. Programming the Raspberry Pi™: Getting Started with Python, Third Edition addresses physical changes and

new setup procedures as well as OS updates to the current version 4. You will discover how to configure hardware and software, write Python scripts, create user-friendly GUIs, and control external electronics. Step-by-step projects include a digital clock prototype and a fully functioning Raspberry Pi robot. Configure your Raspberry Pi and explore its features Start writing and debugging Python programs Use strings, lists, functions, and dictionaries Work with modules, classes, and methods Apply object-oriented development methods Create user-friendly games using Pygame Build intuitive user interfaces with guizero Interface with hardware using the gpiozero library Attach external electronics through the GPIO port Add powerful Web features to your projects

Learn the Raspberry Pi 3 from the experts! Raspberry Pi User Guide, 4th Edition is the "unofficial official" guide to everything Raspberry Pi 3. Written by the Pi's creator and a leading Pi guru, this book goes straight to the source to bring you the ultimate Raspberry Pi 3 manual. This new fourth edition has been updated to cover the Raspberry Pi 3 board and software, with detailed discussion on its wide array of configurations, languages, and applications. You'll learn how to take full advantage of the mighty Pi's full capabilities, and then expand those capabilities even more with add-on technologies. You'll write productivity and multimedia programs, and learn flexible programming languages that allow you to shape your Raspberry Pi into whatever you want it to be. If you're ready to jump right in, this book gets you started with clear, step-by-step instruction from software installation to system customization. The Raspberry Pi's tremendous popularity has spawned an entire industry of add-ons, parts, hacks, ideas, and inventions. The movement is growing, and pushing the boundaries of possibility along with it—are you ready to be a part of it? This book is your ideal companion for claiming your piece of the Pi. Get all set up with software, and connect to other devices Understand Linux System Admin nomenclature and conventions Write your own programs using Python and Scratch Extend the Pi's capabilities with add-ons like Wi-Fi dongles, a touch screen, and more The credit-card sized Raspberry Pi has become a global phenomenon. Created by the Raspberry Pi Foundation to get kids interested in programming, this tiny computer kick-started a movement of tinkerers, thinkers, experimenters, and inventors. Where will your Raspberry Pi 3 take you? The Raspberry Pi User Guide, 3rd Edition is your ultimate roadmap to discovery.

“With futuristic homes on the rise, learn to control and automate the living space with intriguing IoT projects.” About This Book Build exciting (six) end-to-end home automation projects with Raspberry Pi 3, Seamlessly communicate and control your existing devices and build your own home automation system, Automate tasks in your home through projects that are reliable and fun Who This Book Is For This book is for all those who are excited about building home automation systems with Raspberry Pi 3. It's also for electronic hobbyists and developers with some knowledge of electronics and programming. What You Will Learn Integrate different embedded microcontrollers and development boards like Arduino, ESP8266, Particle Photon and Raspberry Pi 3, creating real life solutions for day to day tasks and home automation Create your own magic mirror that lights up with useful information as you walk up to it Create a system that intelligently decides when to water your garden and then goes ahead and waters it for you Use the Wi-fi enabled Adafruit ESP8266 Huzzah to create your own networked festive display lights Create a simple machine learning application and build a parking automation system using Raspberry Pi Learn how to work with AWS cloud services and connect your home automation to the cloud Learn how to work with Windows IoT in Raspberry Pi 3 and build your own Windows IoT Face Recognition door locking system In Detail Raspberry Pi 3 Home Automation Projects addresses the challenge of applying real-world projects to automate your house using Raspberry Pi 3 and Arduino. You will learn how to customize and program the Raspberry Pi 3 and Arduino-based boards in several home automation projects around your house, in order to develop home devices that will really rejuvenate your home. This book aims to help you integrate different microcontrollers like Arduino, ESP8266 Wi-Fi module, Particle Photon and Raspberry Pi 3 into the real world, taking the best of these boards to develop some exciting home automation projects. You will be able to use these projects in everyday tasks, thus making life easier and comfortable. We will start with an interesting project creating a Raspberry Pi-Powered smart mirror and move on to Automated Gardening System, which will help you build a simple smart gardening system with plant-sensor devices and Arduino to keep your garden healthy with minimal effort. You will also learn to build projects such as CheerLights into a holiday display, a project to erase parking headaches with OpenCV and Raspberry Pi 3, create Netflix's "The Switch" for the living room and lock down your house like Fort Knox with a Windows IoT face recognition-based door lock system. By the end of the book, you will be able to build and automate the living space with intriguing IoT projects and bring a new degree of interconnectivity to your world. Style and approach End to end home automation projects with Raspberry Pi 3.

JavaScript Robotics is on the rise. Rick Waldron, the lead author of this book and creator of the Johnny-Five platform, is at the forefront of this movement. Johnny-Five is an open source JavaScript Arduino programming framework for robotics. This book brings together fifteen innovative programmers, each creating a unique Johnny-Five robot step-by-step, and offering tips and tricks along the way. Experience with JavaScript is a prerequisite.

What can you do with the Raspberry Pi, the affordable computer the size of a credit card? All sorts of things! If you're learning how to program--or looking to build new electronic projects, this hands-on guide will show you just how valuable this flexible little platform can be. Updated to include coverage of the Raspberry Pi Model B+, Getting Started with Raspberry Pi takes you step-by-step through many fun and educational possibilities. Take advantage of several preloaded programming languages. Use the Raspberry Pi with Arduino. Create Internet-connected projects. Play with multimedia. With Raspberry Pi, you can do all of this and more. In Getting Started with Raspberry Pi, you'll: Get acquainted with hardware features on the Pi's board Learn enough Linux to move around the operating system Start programming in Python and Scratch Draw graphics, play sounds, and handle mouse events with Pygame Use the Pi's input and output pins to do some hardware hacking Discover how Arduino and the Raspberry Pi can work together

Create your own Pi-based web server with Python Work with the Raspberry Pi Camera Module and USB webcams

Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven't kept pace with today's more hostile security environment, leaving millions vulnerable to attack. The Car Hacker's Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle's communication network, you'll learn how to intercept data and perform specific hacks to track vehicles, unlock doors, glitch engines, flood communication, and more. With a focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-utils, and ChipWhisperer, The Car Hacker's Handbook will show you how to: –Build an accurate threat model for your vehicle –Reverse engineer the CAN bus to fake engine signals –Exploit vulnerabilities in diagnostic and data-logging systems –Hack the ECU and other firmware and embedded systems –Feed exploits through infotainment and vehicle-to-vehicle communication systems –Override factory settings with performance-tuning techniques –Build physical and virtual test benches to try out exploits safely If you're curious about automotive security and have the urge to hack a two-ton computer, make The Car Hacker's Handbook your first stop.

Descrizione In La guida definitiva alla programmazione in Python per principianti e utenti intermedi imparerete tutti gli strumenti essenziali per diventare esperti nel linguaggio di programmazione Python. Scoprite come installarlo in tutti i principali sistemi operativi: Windows, Mac OS e persino Linux. Sarete guidati passo dopo passo, a partire dal download dei file necessari per effettuare le modifiche nell'installazione per il vostro particolare sistema operativo. Imparate la shell della riga di comando e come utilizzarla per eseguire Python in modalità interattiva e tramite script. Scoprite come funziona l'interprete Python e come usare la shell interattiva della riga di comando attraverso esempi pratici che potrete provare da soli. Imparate in dettaglio i tipi di dati e le variabili, con codici di esempio e la discussione dell'output generato. I numeri sono trattati in dettaglio, compresa una disamina dei 4 tipi di numeri in Python: interi, float, complessi e booleani. Scoprite cosa sono i valori restituiti Truthy e Falsy e come si relazionano con il tipo booleano. Fate esercizio con alcune delle numerose funzioni matematiche integrate in Python, e scoprite la differenza tra le funzioni format() e round(). Le stringhe sono una delle variabili più importanti in qualsiasi linguaggio di programmazione. Imparate in profondità come esplorare, cercare e persino manipolare le stringhe in Python. Fate esercizio con i metodi integrati per le stringhe. Scoprite le strutture di controllo di Python e come utilizzare la logica booleana per ottenere il software che vi serve. Usate gli operatori e capite a fondo i punti di forza e le differenze degli operatori matematici, relazionali e logici, nonché l'importanza della precedenza e dell'associatività tra gli operatori. Scoprite le stringhe e i molti modi per farvi ricerche e manipolarle. Scoprite il potere dell'ereditarietà e del polimorfismo.

Raspberry Pi is taking off like a rocket! You can use this amazing, dirt-cheap, credit card-sized computer to learn powerful hardware hacking techniques as you build incredibly creative and useful projects! This complete, full-color guide requires absolutely no experience with either hardware hacking or computer programming. Colorful photos guide you through each project, and the step-by-step instructions are stunningly clear and easy!

Become a master of Python programming using the small yet powerful Raspberry Pi Zero About This Book This is the first book on the market that teaches Python programming with Raspberry Pi Zero Develop exciting applications such as a mobile robot and home automation controller using Python This step-by-step guide helps you make the most out of Raspberry Pi Zero using Python programming Who This Book Is For This book is aimed at hobbyists and programmers who want to learn Python programming and develop applications using the Pi Zero. They should have basic familiarity with electronics. What You Will Learn Configure Raspberry Pi using Python Control loops to blink an LED using simple arithmetic operations Understand how interface sensors, actuators, and LED displays work Get to grips with every aspect of Python programming using practical examples Explore machine vision, data visualization, and scientific computations Build a mobile robot using the Raspberry Pi as the controller Build a voice-activated home automation controller In Detail Raspberry Pi Zero is a super-small and super-affordable product from Raspberry Pi that is packed with a plethora of features and has grabbed the notice of programmers, especially those who use Python. This step-by-step guide will get you developing practical applications in Python using a Raspberry Pi Zero. It will become a valuable resource as you learn the essential details of interfacing sensors and actuators to a Raspberry Pi, as well as acquiring and displaying data. You will get started by writing a Python program that blinks an LED at 1-second intervals. Then you will learn to write simple logic to execute tasks based upon sensor data (for example, to control a motor) and retrieve data from the web (such as to check e-mails to provide a visual alert). Finally, you will learn to build a home automation system with Python where different appliances are controlled using the Raspberry Pi. The examples discussed in each chapter of this book culminate in a project that help improve the quality of people's lives. Style and approach This will be a learning, step-by-step guide to teach Python programming using the famous Raspberry Pi Zero. The book is packed with practical examples at every step along with tips and tricks for the Raspberry Pi fans

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