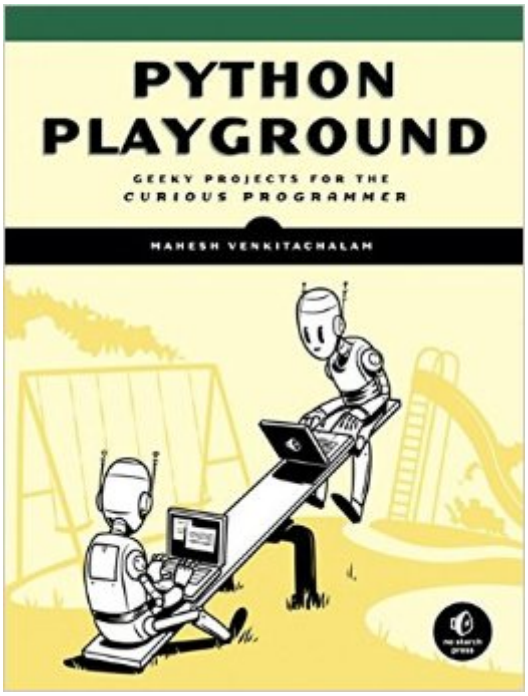
Python Playground: Geeky Projects For The Curious Programmer



Synopsis

Python is a powerful programming language that’s easy to learn and fun to play with. But once you’ve gotten a handle on the basics, what do you do next?Python Playground is a collection of imaginative programming projects that will inspire you to use Python to make art and music, build simulations of real-world phenomena, and interact with hardware like the Arduino and Raspberry Pi. You’ll learn to use common Python tools and libraries like numpy, matplotlib, and pygame to do things like:Generate Spirograph-like patterns using parametric equations and the turtle moduleCreate music on your computer by simulating frequency overtonesTranslate graphical images into ASCII artWrite an autostereogram program that produces 3D images hidden beneath random patternsMake realistic animations with OpenGL shaders by exploring particle systems, transparency, and billboarding techniquesConstruct 3D visualizations using data from CT and MRI scansBuild a laser show that responds to music by hooking up your computer to an ArduinoProgramming shouldn’t be a chore. Have some solid, geeky fun with Python Playground.

Book Information

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Customer Reviews

Disclaimer: I was a technical reviewer of the chapter on application of Raspberry-Pi (chapter 14) in this book for the publisher.If you are the kind of person who likes to tinker with electronics and computers than "Python Playground" is definitely a book worth reading. It assumes the reader has moderate level of understanding in computer programming and python language. The author introduces electronics and programming in python through a series of interesting hardware and

software projects. The book covers a wide range of topics including text processing, data analysis, plotting, animation, simulation (implementation of some interesting algorithms like Karplus-strong), image manipulation and processing, computer graphics (including 3D) and lastly hardware (electronics, interfacing and fun with Raspberry-Pi). The style of introducing these topics by examples makes this book eminently readable and can get the reader to do useful stuff right off the bat. Personally, I was able to interface numerous electronic instruments to a computer for data capture, analysis and display by using the chapter on Arduino (chapter 12) as reference. The chapters on hardware hacking are an excellent introduction to electronic circuits and other popular hardware like Arduino and Raspberry-Pi. Overall, not only is this a great book to read but also a good reference. I would definitely recommend this book to all of you who are interested in dabbling with electronics and programming.

I've only skimmed through this book so far, but it's amazing. I can't believe the quality of the projects that Venkitachalam provides.I've been programming with Python for a while now, and I'm tired of so many beginner's books. I'm glad that the author assumes you are familiar with the language and concepts, and he dives right into making awesome projects.You can make a laser light show that responds to sound, you can simulate the sounds of musical instruments, and create 3D particle effects, all using Python.If you want to make cool s***, I HIGHLY recommend this book!

If you have got the basics of Python and are looking to find interesting programming projects, then this is the book for you. It nicely leads the reader through various programming projects in an easy to read style. There is just enough math and theory to satisfy the curious and the coding style is clear and easy to follow.So, if you ever wanted to understand how auto-stereograms worked and then write the code for it, then you will love this book.

This is one of those rare programming books that is fun to read, and yet suited for the intermediate / advanced python programmer. I reckon even the novices should take a stab at this book, if anything to realize that the true power of Python is not just the simplicity and elegance of the language, but the vast array of open source packages that are available at your disposal to do just about anything, and this book does a great job at demonstrating that. From ASCII art & musical overtones to hardware hacking with Ardunio & Raspberry Pi, this book is enjoyable from start to finish.

Being a c# .NET developer and dabbling with C++ for nearly 10 years, this book brings out the

power and possibilities of programming with python. It is easy to read and has some very fun examples like the Spirograph , Photomosaics and the very cool musical tones chapter. I think i went nuts on that one:-)The number of lines of codes needed to do this in other languages makes you want to run and adopt python immediately. The author does an excellent job bringing out the elegance of the language and the level of detail of math is just right!

This book takes a hands-on demonstration based approach using projects to introduce the reader to various aspects of Python programming. You will find this book extremely useful if you're trying to find material that shows various programming techniques using examples that are easy to relate to. The unique feature of this particular book is Part V which provides a very nice introduction to the practical aspects of embedded programming using the hugely popular Arudino and Rasberry Pi platforms. If you're someone who's looking to start a journey into the exciting and fun world of programming microcontrollers to support more advanced projects, Mahesh's book is the ideal place to start as he has brought in his several years of intensive work in this area to come up with nice and simple projects that do a very good job of demonstrating the capabilities of these two popular platforms. The rest of the book has projects from various application areas ranging from simple academic examples in part I to more complex image processing and OpenGL based examples in Part IV, all of which, could potentially be a guide for executing much larger and more complicated projects.

Mahesh Venkitrchalam is an American Educated Indian Software Engineer and Hacker with a passion for technology begun in the 8tth Grade.This book, perfect for STEM Education and Hackers of All Ages, this book of engaging intermediate level project ranging from Music, Computer Graphics, 2 Artificial Life Demonstrations, 3D Visualizations of Medical Images, and Microcontroller Hacking Projects. The software is certified to run in both Python 2.7 and 3.x implementations. These fun projects can be completed by anyone with a basic knowledge of Python Constructs and a High School Math Background--All other Mathematical and Programming concepts are explained in detail. Hardware projects involving Microcontrollers and a basic application of Modern Electronics are thoroughly illustrated. This book is particularly recommended for STEM Education and makers who wish to employ a basic knowledge of Python.

computer programming, how to program, sql for dummies, java, mysql, The Oracle, python, PHP, ... (HTML, Programming, Coding, CSS Book 7) Python Scripting for ArcGIS The RenderMan Companion: A Programmer's Guide to Realistic Computer Graphics Hacking: How to Hack Computers, Basic Security and Penetration Testing (Hacking, How to Hack, Hacking for Dummies, Computer Hacking, penetration testing, basic security, arduino, python) Python Programming for Arduino Raspberry Pi: 101 Beginners Guide: The Definitive Step by Step guide for what you need to know to get started (Raspberry Pi, Raspberry, Single Board Computers, ... Pi Programming, Raspberry Pi Projects) Automate the Boring Stuff with Python: Practical Programming for Total Beginners Programming: Computer Programming for Beginners: Learn the Basics of Java, SQL & C++ - 3. Edition (Coding, C Programming, Java Programming, SQL Programming, JavaScript, Python, PHP) Building Machine Learning Systems with Python - Second Edition Crochet: Crash Course - The Ultimate Beginner's Course to Learning How to Crochet In Under 12 Hours - Including Quick Projects & Detailed Images PIC32 Microcontrollers and the Digilent Chipkit: Introductory to Advanced Projects ArcPy and ArcGIS: Geospatial Analysis with Python Programming Google App Engine with Python: Build and Run Scalable Python Apps on Google's Infrastructure Python Data Analytics: Data Analysis and Science using pandas, matplotlib and the Python Programming Language Arduino LED Cube Projects Raspberry Pi Projects For Dummies Python Playground: Geeky Projects for the Curious Programmer Make: Bluetooth: Bluetooth LE Projects with Arduino, Raspberry Pi, and Smartphones