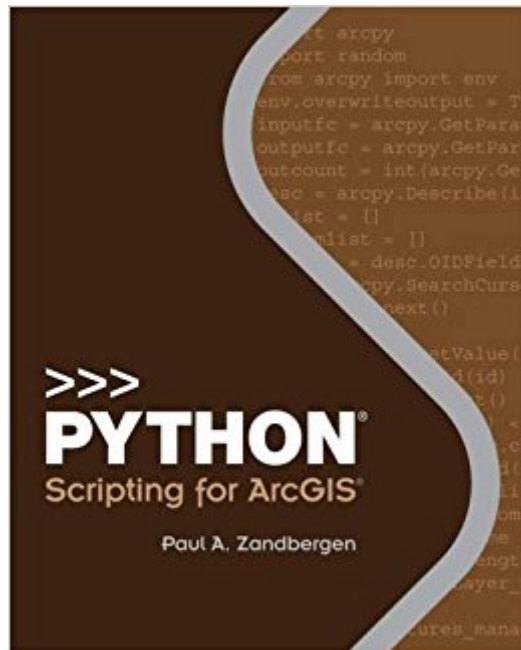The book was found

Python Scripting For ArcGIS

Synopsis

Python Scripting for ArcGIS is a guide for experienced users of ArcGIS Desktop to get started with Python scripting without needing previous programming experience. Experience with other scripting or programming languages (Perl, VBA, VB script, Java, C++) is helpful but not required. Readers are expected to have good general ArcGIS skills and a basic understanding of geoprocessing procedures. There are 14 chapters with corresponding online data and exercises available on the Esri Press book resource page at esripress.esri.com/bookresources.

Book Information

Series: Python Scripting (Book 1)

Paperback: 358 pages

Publisher: Esri Press; 2 edition (February 2, 2015)

Language: English

ISBN-10: 1589483715

ISBN-13: 978-1589483712

Product Dimensions: 8.1 x 1 x 9.9 inches

Shipping Weight: 2.5 pounds (View shipping rates and policies)

Average Customer Review: 4.4 out of 5 stars 66 customer reviews

Best Sellers Rank: #39,455 in Books (See Top 100 in Books) #3 in Books > Computers & Technology > Programming > Graphics & Multimedia > GIS #12 in Books > Computers & Technology > Graphics & Design > Computer Modelling > Remote Sensing & GIS #13 in Books > Science & Math > Earth Sciences > Geography > Information Systems

Customer Reviews

The impetus for writing this book comes from the lessons I've learned from using and teaching geographic information systems (GIS) for over 10 years at several different universities. One of those lessons is that "a little bit of code can go a long way."Those of us who learned our first computer skills back in the days of MS-DOS became familiar with using command prompt to carry out basic tasks. Early versions of ArcGIS for Desktop Advanced (ArcInfo) also relied heavily on a command line interface, in addition to the use of the ARC Macro Language (AML). More recently, however, most software has come to rely on a graphical user interface (GUI) with very limited need to use a command line interface or to write any code. As a result, the majority of current college students taking their first GIS course have never seen any form of code . Although the menu-driven user interface of ArcGIS for Desktop allows for very complicated operations and sophisticated

spatial analysis, at some point users will run into tasks that require something more. That's where Python scripting comes in.In a nutshell, Python scripting allows you to automate tasks in ArcGIS that would be very cumbersome using the regular menu-driven interface. For example, consider having to convert 1,000 shapefiles to feature classes in a geodatabase. You could run the appropriate tool 1,000 times, but surely there must be a more efficient and robust way to do this. That's what Python scripting will do and you will need only a handful of lines of code to carry out this task. About halfway through this book, you will write a script that does exactly this.This book is designed to make the power of Python scripting available to those who have no experience in writing code. The book starts with the basics, such as what scripting is and how to write and execute simple lines of code. Following that, the book covers how to write scripts that work with spatial data in ArcGIS for Desktop. A good familiarity with ArcGIS for Desktop is assumed, including managing data in ArcCatalog and carrying out basic tasks in ArcMap, such as manipulating data, creating cartographic output, and running tools. You should also be familiar with the basic concepts of GIS, including coordinate systems, data formats, table operations, and basic spatial analysis methods. If you have some experience in writing code in any language, it will be helpful but is not required.Why Python? A couple of reasons. First, Python is free and open source, meaning it can be freely distributed and shared. Second, it is a powerful and versatile language although still relatively easy to learn. Third, Esri has adopted Python as the preferred language to work with ArcGIS, which is strongly reflected in the functionality introduced in version 10.1.There are numerous introductory textbooks on GIS and tutorials for learning ArcGIS. Most of them include sections on spatial analysis methods and procedures. However, coverage of Python scripts is not very complete. Although there is no lack of good introductory books on Python, most existing books cover Python without targeting a specific application. Python's role as a "glue" language is explained and demonstrated, but most books remain very general when it comes to how Python works with other programs.There is no ArcGIS-specific version of the Python language and so you can start learning Python syntax using any of the general Python books. However, the objects we work with in ArcGIS (such as feature classes, polygons, and geoprocessing tools) are very different from the more generic objects used as examples in most existing titles. This makes it difficult for an experienced ArcGIS user to just pick up a general Python book and start writing scripts for ArcGIS. For an experienced programmer who has previously programmed with ArcGIS in either VBA or C++, such a generic Python reference might sufficebut other professionals will benefit greatly from a book that covers Python with a very specific focus on writing scripts for ArcGIS.The primary audience for this book consists of experienced ArcGIS users who want to learn Python but have limited programming

or scripting experience. Prior experience with other scripting or programming languages (such as Perl, VBA, VBScript, Java, or C++) will be helpful but is not required. More experienced programmers will also benefit, but the emphasis is on making Python scripting available to the large number of ArcGIS for Desktop users who want to get more out of the functions of ArcGIS without having to become full-time programmers and learning C++. Readers will, however, be expected to have good overall ArcGIS skills and a basic understanding of geoprocessing procedures.This book is also intended for upper-division undergraduate and graduate courses in GIS. A handful of colleges and universities teach upper-division courses in GIS programming and/or scripting, and this number is expected to increase.This book contains three major parts. Part 1 covers the fundamentals of geoprocessing in ArcGIS for Desktop as well as the fundamentals of the Python language. Depending on your background and experience, you may already be familiar with some or all of this material. Part 2 covers how to write scripts that work with spatial data. This is really the core of the book and includes chapters on executing tools in Python, describing data, and manipulating and creating data, as well as a number of more specialized tasks. Part 3 covers how to create a tool out of your script and how to share your tool with others. By the end of this book, you will be able to create custom tools that use Python scripting to automate basic tasks in ArcGIS for Desktop.Each of the 14 chapters in the book is accompanied by an exercise reinforcing the concepts covered in the chapter. All 14 exercises are included on the Data and Exercises DVD that comes with the book. You should first read the chapter and then complete the accompanying exercise before moving on to the next chapter. Depending on your learning style and familiarity with coding, you can try some of the code in the chapters while you are reading it, but you can also first read the entire chapter and then start the exercise. You should complete the chapters and exercises in order since the concepts introduced in each new chapter build on the previous ones.To do the exercises in this book, you need to have ArcGIS 10.1 for Desktop software installed on your computer, or else download a trial version of the software. See appendix C for instructions on how to download the software. You will need the code printed on the inside back cover of this book to access the download site. This book will teach you techniques to automate tasks in ArcGIS. Perhaps by the end of the book, you will become a Python aficionado or perhaps you will simply be able to save yourself hours of work by using one of the scripts from the book. Whatever the case, beyond the specific skills of writing Python scripts for ArcGIS, you will also learn the basic logic of writing code. This will be helpful beyond the specific task at hand. My hope is that the book will contribute to demystifying what "writing code" really is for those who may be a little intimidated by it. And to show that writing code is not difficult to learn. Coding as an approach to solving problems is

not only very powerful but also has widespread applicability. I sincerely hope this book will allow you to experience this versatility of Python coding. Paul A. ZandbergenAlbuquerque, NM USA --This text refers to an alternate Paperback edition.

Paul A. Zandbergen is an associate professor of geography at the University of New Mexico in Albuquerque. His areas of expertise include geographic information science; spatial and statistical analysis techniques using GIS; error and uncertainty in spatial data; GIS applications in criminology, economics, health, and spatial ecology; terrain analysis and modeling; and communityâ •based mapping using GIS and GPS.

This book is a fine companion to Jennings' A Python Primer for ArcGIS. In fact, it's kind of hard to buy one without the other. Together they make one book. I would recommend that, if you're a visual learner driven to absorb concepts, start with Zandbergen then dig into Jennings' for some really fine exercises and coding practices. However, if you're a tactile learner (like me), get under the hood and get your hands dirty with Jennings. Get to where you can comfortably do these exercises. And then dive into the why's and wherefore's behind them in the Zandbergen text.Yes, I am a "shoot first, and ask questions later" type of guy. Jennings' text lets me dive in. But Zandbergen's is a well-written text that covers a number of tools beyond what Jennings treats. Zandbergen's exercises, in accompanying .pdf's, are--not very good. But I keep both books on my desk.

Paul Zandbergen has filled a badly needed void with this book. For you college instructors who have been looking for a text to teach an ArcPy course, this is it. It has 14 chapters and accompanying labs. For the self learner, the book is quite accessible both in layout and content.Paul has a thorough understanding of ArcPy and Python and he does a marvelous job teaching the basics and providing some useful inside tips. He is also comprehensive and thorough. For the instructor, you will need to get your lab up to ArcGIS 10.1. For the self-learner, the text comes with a 6-month license along withe data and labs.No need to wait any longer. This is the text for learning ArcPy and now is the time.

This is another nice issue from the ESRI press concerning Python scripting within their ArcGIS program. If you are a GIS user who needs the programming background to really understand and function your ArcGIS work, this is a good book to motivate you to learn.There is a lot of buy-in necessary to make this work: mostly, beating your head against the programming wall over and

over and over and over and over again when little issue pop up that makes things not work. Python at least is somewhat forgiving.If you are a student in a course where this book is required... buy it. You'll need it for a while if you plan to make GIS a career.

The "Alternate Edition" does not come with a code for the 180-day trial. The content looks solid and the few pages I've read were well written. Not much to say at the moment just wanted to make sure that the lack of a code for this edition was somewhere on the page because the from the item description or the other reviews, for other edition, it seems like the code should be in the book.

Nicely put together. Lots of information packed into pretty concise chapters and will greatly improve your python skills for Arc. The exercises associated with each chapter are excellent.

Useful for any GIS professional looking to get started with Python or review what they already know. I was having trouble learning Python using free online materials because I would lose interest before I could figure out how to apply what I had learned to my work. This book is a great tool, I'm already so much more efficient in my workflows.

I've used ArcGIS for many years but am new to programming. I've found that the ESRI resource site has everything you need but there is so much information there it's difficult to know where to start. This book has the right amount of information to point you in the right direction. And it's well organized, making it a very handy reference guide. It has been a great help in automating routine mapping tasks. I hope the author considers writing additional books that delve more deeply into different topics, like map scripting (hint, hint).

I needed to move from VBA scripting for ArcGIS to Python scripting for ArcGIS and this book made the transition smooth and painless.The information is very clear and easy to grasp. The examples were useful and easy to follow. I now feel confident using Python for all my scripting purposes. ArcGIS is phasing out VBA as the scripting language and this is a great book for those who need to learn Python for ArcGIS scripting.

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