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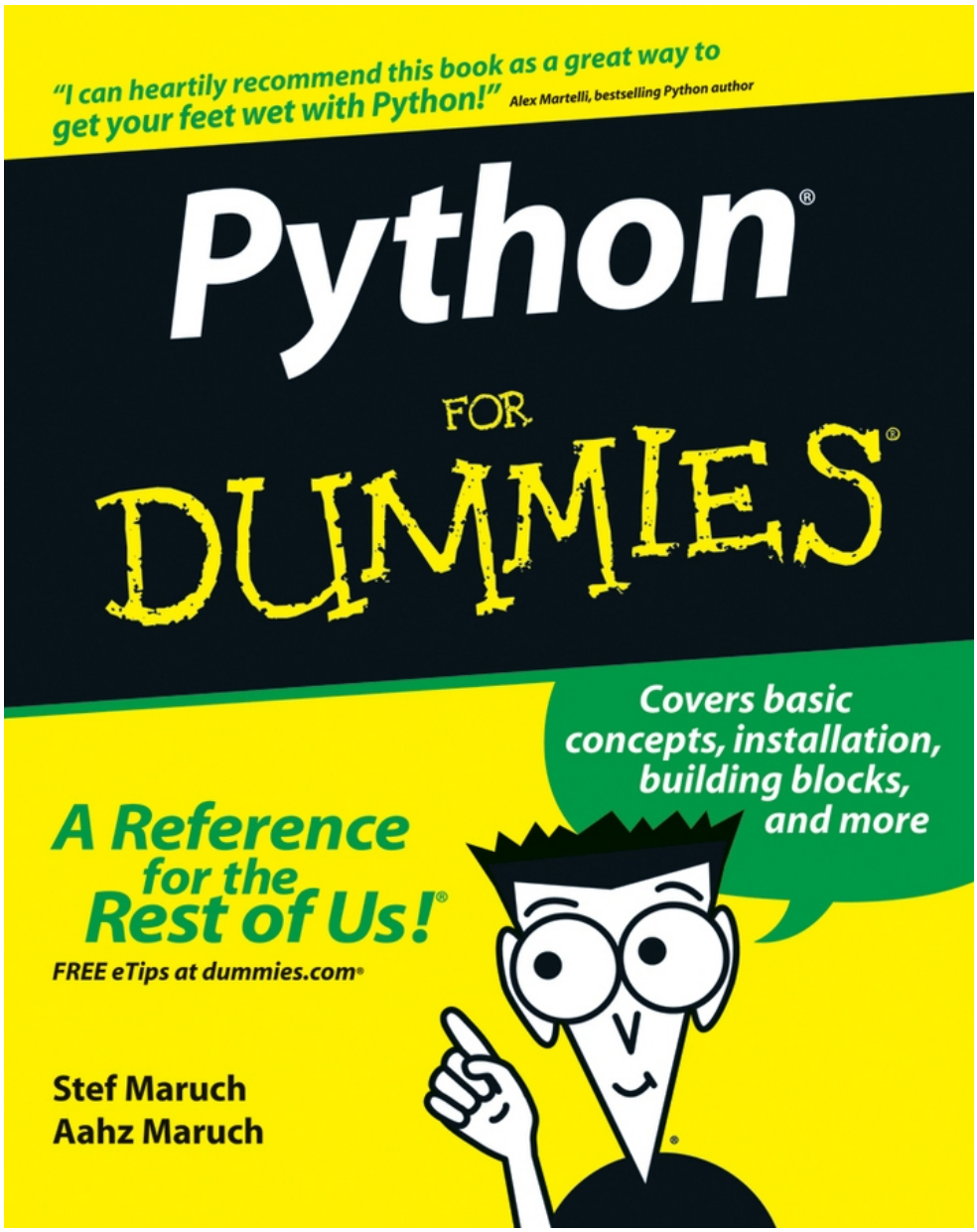
Stef Maruch
Aahz Maruch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About the Authors

Stef Maruch got her hands on an original 128K Mac in 1984 and has been writing about computers ever since. She has over fifteen years' experience in instructional design, writing, and editing end-user computer manuals, including tutorials and user's guides for Apple Newton, HyperCard and HyperTalk, and DVD Studio Pro.

Aahz Maruch is a writer, trainer, and consultant who has been using Python for more than seven years. He has been using computers professionally for 20 years, and his background includes stints of high-end tech support, systems administration, and programming. Aahz is currently working as a programmer for a company with a Web-based application.

The authors can be reached at authors@pythonfood.com.

Dedication

Stef: I dedicate this book to my parents, Don and Betty Jones. You have always believed in me, even at times when I was quite improbable.

Aahz: I dedicate this book to the Python community. I hated programming until I learned Python (yes, for more than 20 years). I hope this book brings the joy of Python to many people.

This book is also dedicated to the Flying Spaghetti Monster.

Authors' Acknowledgments

Many people have helped us and supported us in writing this book. There are too many to mention all of them by name, so we want to start by thanking all the people we don't name here — all the family and friends and community who have sustained us.

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The community of Python programmers on comp.lang.python and tutor@python.org not only helped Stef learn Python but also tirelessly work every day to promote Python and help make it accessible. This book wouldn't be possible without them.

The folks who maintain www.python.org and run the Python Software Foundation provide a critical service without which Python would be poorer.

Millions of people volunteer their time and efforts to make the Open Source movement a powerful force for good in the computer industry.

We also want to thank each other. Living together and writing a book is stressful, but we're glad we did this.

And, of course, none of it would be possible without Guido.

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We’re proud of this book; please send us your comments through our online registration form located at www.dummies.com/register/.

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Introduction

Congratulations! You're ready to discover the easiest-to-read powerful programming language — or maybe the most powerful, easy-to-read programming language. That's Python, of course.

With *Python For Dummies* , you can ferret out just a little or a lot. And with Python, you can write a little program that picks a random quote from a file, or you can write a set of programs that runs a complex business.

This book is for you whether you're a student, you're a hobbyist, you need to understand more about what your programmer co-workers are talking about, or you're taking the first steps on a new career path.

Python For Dummies gives you everything you need to get to an advanced-beginner level of Python programming. And it points you to other resources so you can take your Python programming skills even further.

About This Book

Python For Dummies is a reference book, which means you can read it in any order, and you don't have to read every chapter or section. However, to some extent, later chapters about more complex Python features rely on

information introduced in earlier chapters. So if you don’t understand something you see in a later chapter, go to Chapter 3, or go to the chapter on that feature to find out more. You can also look in the index to find a term or feature you want to know more about.

Conventions Used in This Book

This book contains Python code examples. All code examples are in `monospaced font` so they are easy to recognize. Anything that you need to type is also indicated in `monospaced font` so you know exactly which commas should be typed and which commas are part of the surrounding sentence.

Python interactive mode examples include this prompt: `>>>` . If you don’t see the prompt, you can assume the code was written in a text editor.

Foolish Assumptions

We make the following assumptions about readers of this book:

- **You know how to use your computer and its operating system.**

It’s helpful but not necessary to know how to set environment variables on your computer. It’s also helpful to have a Web browser with access to the Internet.

✔ You have and know how to use a text editor that can produce plain ASCII text or files that end with the .txt extension.

If you don’t have a text editor that can do this, we include instructions for setting up Python’s IDLE programming environment to work with the examples in this book.

✔ You have had a minimal amount of exposure to programming.

We really do mean *minimal.* If you had a programming class in high school, or wrote a few BASIC programs at one time, or even if you have used HTML tags, that counts.

If you have absolutely no experience with programming, you can still find out plenty from this book, but we recommend that you also look at a book or Web tutorial designed to introduce programming to beginners. You’ll benefit from the extended explanations of some concepts that we don’t have the space to discuss in detail here.

✔ You might have done some programming in another language.

Programming knowledge is not required for this book, but people who have programmed in other languages have their own sets of issues when transitioning to Python, and we provide some material for such people.

✔ **You know little to nothing about Python.**

If you know Python, this book will still be helpful as a reference or a source of tips and tricks you may not be aware of.

How This Book Is Organized

This book gives you an overview of Python; the lowdown about all of its major parts, structures, and libraries; and a glimpse into some more advanced features. You also find out where to go to discover more.

Part I: Getting Started

In this part, we introduce Python and situate it among the myriad other programming languages available. Python is good for some things and not for others; you find out which is which. We provide a hands-on introduction to some of Python's abilities, using its helpful interactive mode and its IDLE programming environment. We briefly describe each of Python's basic building blocks and show how all these blocks come together by dissecting a working program. We sketch an overview of how professional programmers design programs and debug code and show you how to put these practices to work to make your own programming life easier.

Part II: Building Blocks

Python has six basic data types and many ways to work with each of them. In this part, we describe how to work with strings (chunks of text), numbers, lists and tuples (both of which store multiple data elements), dictionaries (which associate one element with another), and sets (which always contain unique elements, never duplicates).