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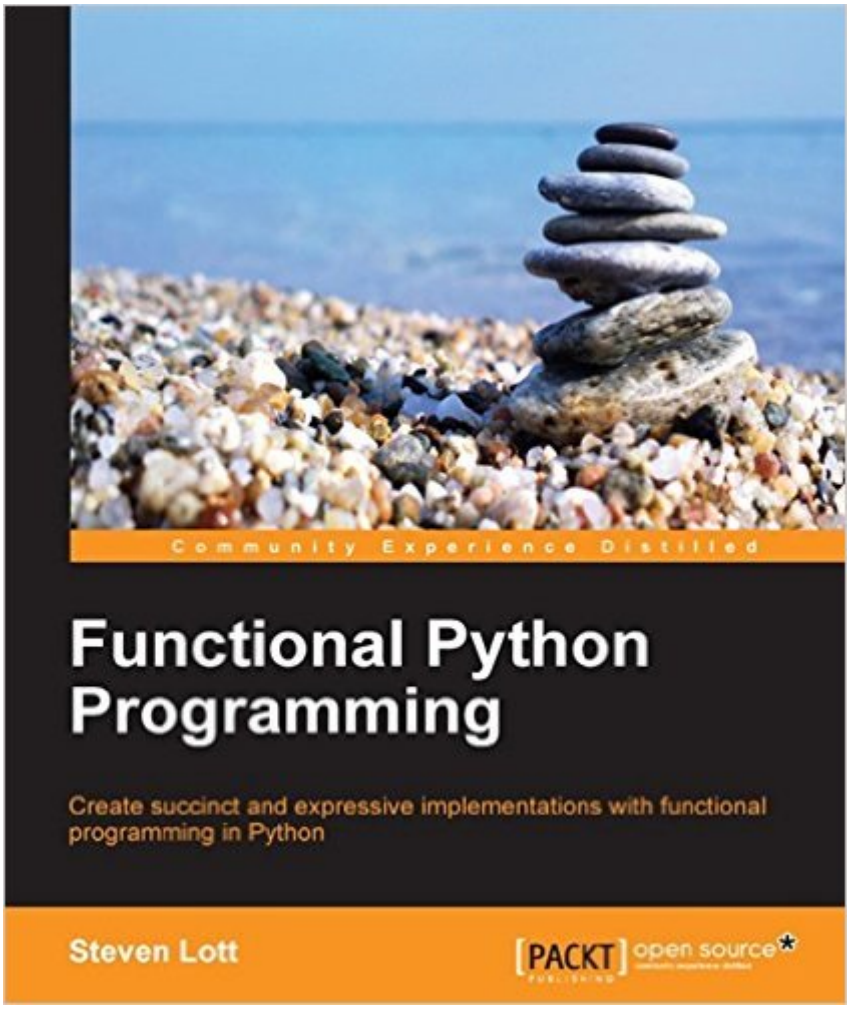
# Functional Python Programming - Create Succinct And Expressive Implementations With Python

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## Synopsis

Key FeaturesImplement common functional programming design patterns and techniques in PythonLearn how to choose between imperative and functional approaches based on expressiveness, clarity, and performanceApply functional Python to common Exploratory Data Analysis (EDA) programming problemsBook DescriptionPythonâ ™s easy-to-learn and extensible abilities offer a number of functional programming features for you to bring into your workflow, especially in the realm of data science.If youâ ™re a Python developer who wants to discover how to take the power of functional programming and bring it into your own programs then this book is essential for you, even if you know next to nothing about the paradigm. Starting with a general overview of functional concepts youâ ™ll explore common functional features such as first-class and higher-order functions, pure functions and more, and how these are accomplished in Python to give you the core foundations youâ ™ll build upon. After that, youâ ™ll discover common functional optimizations for Python to help your apps reach even higher speeds. You'll also explore data preparation techniques and data exploration in depth, along with learning how the Python standard library fits the functional programming model. Finally, to top off your journey into the world of function Python youâ ™ll at look at the PyMonad project and some larger examples to put everything into perspective.With Functional Python Programming by your side youâ ™ll understand the core concepts of function Python, its impact on the programming workflow, and how to implement it in Python, giving you the ability to take your applications to an even higher level.What you will learnUse Python's generator functions and generator expressions to work with collections in a non-strict (or lazy) mannerUtilize Python library modules including itertools, functools, multiprocessing, and concurrent.futures for efficient functional programsUse Python strings with object-oriented suffix notation and prefix notationAvoid stateful classes by making use of families of tuplesDesign and implement decorators to create composite functionsUse functions like max(), min(), map(), filter(), and sorted()Write advanced higher-order functionsAbout the AuthorSteven F. Lott has been programming since the 70s, when computers were large, expensive, and rare. As a contract software developer and architect, he has worked on hundreds of projects, from very small to very large. He's been using Python to solve business problems for over 10 years.Table of ContentsIntroducing Functional ProgrammingIntroducing Some Functional FeaturesFunctions, Iterators, and GeneratorsWorking with CollectionsHigher-order FunctionsRecursions and ReductionsAdditional Tuple TechniquesThe Itertools ModuleMore Itertools TechniquesThe Functools ModuleDecorator Design TechniquesThe Multiprocessing and Threading ModulesConditional Expressions and the Operator ModuleThe Pymonad LibraryA Functional

Approach to Web ServicesOptimizations and Improvements

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## Customer Reviews

Unless you have lived in a cave for the last few years you probably realize the importance of Python in todayâ ™s IT world. It has become the go to tool for science, statistics, math and large data. There are many different add-ons and libraries that make Python a leader in this area. But as great as Python is, it was not originally designed to be a purely functional programming language. Is this a bad thing?Absolutely not. Python was designed to be a flexible, easy to read programming language that could fit into just about any programming modality. So what makes a fully functional programming language? It would take a very long book to fully explain this, but in its most simplistic form a functional language does not concentrate on state, but a series of functions that receive an input (of many types) and gives on output (again of many types). It does not keep track of other things outside the request and therefor can be very efficient at what it does and lends itself to efficient testing without keeping track of lots of outside issues. Think of a command line where you put in something and get a response. Together, a group of these functions become a program that handles the myriad of requests given it. It lends itself more to projects with specific things to

accomplish.So why Python Functional Programming and more importantly, why this book. Python can also lend itself to inefficient objects, styles and procedures and the use of carefully crafted functions in various area can greatly improve your code and the speed and efficiency of your program. This book covers many areas where superbly crafted functions could dramatically affect the performance and readability of your coding.

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