Start Here!

John M. Morrison

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0 For whom this book is written

This book is for you if you are an open–minded inquiring person who finds problem solving fun and exciting. Unapologetically, we have the goal of this book being a learning tool; it was conceived and designed with that goal in mind from the very beginning. The ideas in this book have been inflicted on a wide field of students from the North Carolina School of Science and Mathematics.

No prior knowledge of computing or programming languages is assumed. However, it is a good idea to be proficient in the basics of using a modern computer before you begin. Said proficiency is very modest; it includes such things as being able to open, manage and save files. The completely uninitiated could master it in an afternoon with a little effort and a simple book on using their PC.

1 What this book is not

This book is not an encyclopaedia of Python. It is not an exhaustive technical reference of any ilk. It is unabashedly designed as a learning tool.

Absolute completeness of coverage is not the goal here. This book is meant to blaze a trail through the world of computing. We make a concerted effort to keep the conceptual spoor compact and easy to follow. It is intended to be a good tool for self–study. If you acquire the ideas in this book, you can then profitably read many of the references listed here to advance your study. This book is meant to open many doors for you to furthering your knowledge.

2 How to Read this Book

We do not promise to inject the ideas of programming into your brain without some serious effort on your part. This is not possible. You will need to write lots of code, break it, and fix it. Enter the enterprise of learning this language with the attitude of an intrepid explorer.

You should read this book with your text editor open and with a command window with an interactive session in it. They look like this.

```
>>> x = "cows"
>>> print(f"{x} are eating my corn!")
```

When you see an interactive session in the text, you should do some experimenting. Do not be afraid to "break" Python. Push the boundaries and be bold in trying things out. I repeat: *Do not be afraid!*

When you see programs, copy them into your text editor. Run them, then modify them. When you ask the question, "What happens if I do X?" you should do X. When you see error messges, pay attention to them. By so doing, you learn to interpret what Python is telling you when something goes wrong. Googling error messages can be very helpful and it will help you to discover resources on the web that will help you learn.

You should work the exercises as they arise; they are designed to give you an opportunity to apply new ideas and they sometimes actually teach new ideas. Some of these exercises (gasp!) require you to take out a pencil and paper and fool with numbers. Don't skip these! You must be an active participant in the enterprise. You will need to learn how to browse various sources of documentation on the web. Making aggressive use of these will greatly enhance your experience as you work through the material.

Finally, you may have some friends who are interested in learning Python. Make learning a social activity. It is very useful to have others to discuss things when you are puzzling out a problem.

3 Command Windows

We will use the term *command window* to refer to a Windoze cmd window, a Mac terminal window, or a Linux terminal. It is extremely useful for you to know how to navigate in a command window.

Windoze Bucky's cmd window tutorial is very helpful. As you watch his video, follow along and try things on your computer. Each video is only 10 min or so long, and if you watch the first few, you will know how to get around in your file system using a cmd window.

Mac/Linux my videos on using the terminal are quite useful. The first video will give you enough knowledge to navigate the file system. The playlist will give you an good background on using a command-line interface. You should open your computer's terminal and try things as the video progresses.

In either case, the skill you need to master is to be able to move among your directories (aka folders) and to display their contents. You will use your command window to launch Python and to run Python programs. To run a Python program, your command window needs to be in the folder containing it.