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PAID COURSE

# Python Data Science Toolbox (Part 1)

Replay Course

3 hours | 12 Videos | 46 Exercises | 18,489 Participants | 3650 XP



STATEMENT OF ACCOMPLISHMENT

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This course is part of these tracks:

**Data Analyst with Python**

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**Python Programming**



**Hugo Bowne-Anderson**  
Data Scientist at DataCamp

Hugo hearts all things Pythonic and is charged with building out DataCamp's Python curriculum. He can be found at hackathons, meetups & code sprints, primarily in NYC. Before joining the ranks of DataCamp, he worked in applied mathematics (biology) research at Yale University.

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#### COLLABORATOR(S)



Francisco Castro

#### PREREQUISITES

[Intro to Python for Data Science](#)[Intermediate Python for Data Science](#)

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## Course Description














It's now time to push forward and develop your Python chops even further. There are lots and lots of fantastic functions in Python and its library ecosystem. However, as a Data Scientist, you'll constantly need to write your own functions to solve problems that are dictated by your data. The art of function writing is what you'll learn in this first Python Data Science toolbox course. You'll come out of this course being able to write your very own custom functions, complete with multiple parameters and multiple return values, along with default arguments and variable-length arguments. You'll gain insight into scoping in Python and be able to write lambda functions and handle errors in your very own function writing practice. On top of this, you'll wrap up each Chapter by diving into using your acquired skills to write functions that analyze twitter DataFrames and are generalizable to broader Data Science contexts.

### 1 Writing your own functions **FREE**

**100%**

Here you will learn how to write your very own functions. In this Chapter, you'll learn how to write simple functions, as well as functions that accept multiple arguments and return multiple values. You'll also have the opportunity to apply these newfound skills to questions that commonly arise in Data Science contexts.

**User-defined functions****50 xp**



 Strings in Python	50 xp
 Recapping built-in functions	50 xp
 Write a simple function	100 xp
 Single-parameter functions	100 xp
 Functions that return single values	100 xp
 Multiple parameters and return values	50 xp
 Functions with multiple parameters	100 xp
 A brief introduction to tuples	100 xp
 Function that return multiple values	0 xp
 Bringing it all together	50 xp
 Bringing it all together (1)	70 xp
 Bringing it all together (2)	100 xp
 Congratulations!	50 xp

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## 2 Default arguments, variable-length arguments and scope 100%

In this Chapter, you'll learn to write functions with default arguments, so that the user doesn't always need to specify them, and variable-length arguments, so that they can pass to your functions an arbitrary number of arguments. These are both incredibly useful tools! You'll also learn about the essential concept of scope. Enjoy!

 Scope and user-defined functions	50 xp
 Pop quiz on understanding scope	50 xp
 The keyword global	100 xp
 Python's built-in scope	50 xp

▶ Nested functions	50 xp
</> Nested Functions I	100 xp
</> Nested Functions II	100 xp
</> The keyword nonlocal and nested functions	100 xp
▶ Default and flexible arguments	50 xp
</> Functions with one default argument	100 xp
</> Functions with multiple default arguments	100 xp
</> Function with variable-length arguments (*args)	100 xp
</> Function with variable-length keyword arguments (**kwargs)	100 xp
▶ Bringing it all together	50 xp
</> Bringing it all together (1)	100 xp
</> Bringing it all together (2)	100 xp

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Completed

### 3 Lambda functions and error-handling

100%

Herein, you'll learn about lambda functions, which allow you to write functions quickly and on-the-fly. You'll also get practice at handling errors that your functions, at some point, will inevitably throw. You'll wrap up once again applying these skills to Data Science questions.

▶ Lambda functions	50 xp
☰ Pop quiz on lambda functions	50 xp
</> Writing a lambda function you already know	100 xp
</> Map() and lambda functions	100 xp
</> Filter() and lambda functions	100 xp
</> Reduce() and lambda functions	100 xp

 Introduction to error handling	50 xp
 Pop quiz about errors	50 xp
 Error handling with try-except	100 xp
 Error handling by raising an error	100 xp
 Bringing it all together	50 xp
 Bringing it all together (1)	100 xp
 Bringing it all together (2)	100 xp
 Bringing it all together (3)	100 xp
 Bringing it all together: testing your error handling skills	50 xp
 Congratulations!	50 xp
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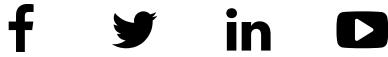
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