Python Functions Tutorial

This Python Functions Tutorial training covers how to write functions in Python, special blocks of code that only run at certain times throughout your program. You'll learn how to work with Python functions, from understanding parameters and arguments to writing code blocks that execute only when called.

CBT Nuggets course material →

STUDY PLAN

WEEK 1

Understand Functions in Python — 151 min.

Introduction to Functions	8
Exploring Built-In Functions	10
Creating Functions	16
Passing Arguments	11
The Return Statement	7

Implement Functions in Python

Overview	1
Args	10
Kwargs	6
Importing Modules	14
Returning Multiple Values	7
Scope	8

Understand Functional Programming in Python

Overview	1
Introduction	6
Comprehensions	11
Lambda Functions	13
The Map Function	9
The Filter Function	6
The Reduce Function	5

WEEK 2

Decorators & Generators — 158 min.

Overview	1
Introduction	3

First-Class Functions in Python

Higher-Order Functions in Python

WEEK 3 **157 min.**

Introduction to Partial Application and Currying

Advanced Higher-Order Functions

Advanced Partial Application & Currying

WEEK 4 **162 min.**

Introduction to Memoization

Overview	1
Introduction	1
Why Do We Need Memoization?	12
Implementing Memoization in Python	12
Memoizing the Fibonacci Sequence	14
Memoization with a Dictionary	6

Composing Functions in Python

Overview	1
Introduction	1
Basics of Function Composition	11
Composing Python Functions	14
Composition Using Lists	8
Composition Using Higher-Order Functions	10
Composition Plus Partial Application	7

Advanced Memoization

Overview	1
Introduction	1
Memoizing Multiple Arguments	10
Another Strategy for Memoizing Multiple Arguments	10
Memoizing with Higher-Order Functions	12
Memoizing Keyword Arguments	12

Introduction to Recursion in Python

Overview	1
Introduction	1
Basics of Recursion	12

WEEK 5 **156 min.**

Building a Recursive For-Loop	10
Looping Through a List with Recursion	12
Other Strategies for Dealing with Lists	10

Recursion with Lists

Overview	1
Introduction	1
Implementing Min Recursively	14
Recursive Max and Sum	7
Another Strategy for List Recursion	9
Re-Implementing Max and Sum	10
Tail Recursion and Tail-Call Optimization	5

Working with Trees in Python

Overview	1
Introduction	1
What Are Trees?	15
Representing Trees Using Nested Lists	7
Another Method for Representing Trees Using Nested Lists	7
Representing Trees Using Dictionaries	8
Representing Trees Using Combined Dictionaries and Lists	10

Basic Tree Algorithms in Python

Overview	1
Introduction	1
Printing Trees Recursively	9
Recursive Printing with Different Tree Structures	14

WEEK 6

	25 min.
Depth-First vs. Breadth-First Tree Traversal	9
Printing Trees Breadth-First	8
A Better Way to Print Trees	7

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