



Introduction to Python

21 February 2022 - 4 March 2022

Instructor: Lucy Havens

Day 1 Recap

How to think like a computer

When you're stuck, use docs, Stack Overflow, search engines

Operators

Data Types - string, integer, float, boolean

Variables

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QUIZ

**Questions about
Assignment 1?**

DAY 2

Functions and Methods

For easily reusing code

They have different syntax...

*Note: You can use Python's
built-in functions and you can
define your own functions, as
we have with add to the right*

• • • • •	FUNCTIONS	• • • • •	METHODS	•
•	def add(x, y):	•	s = 'Python'	•
•	return x + y	•	s.lower()	•
•	add(4, 6)	•	>> 'python'	•
•	>> 10	•	s.upper()	•
•	• • • • •	•	>> 'PYTHON'	•
•	• • • • •	•	• • • • •	•

Modules

Built-in libraries of code to solve common problems

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Examples from the [index of Python's modules](#):

datetime - interpret dates for chronological sorting, format dates

string - access lists of digits and punctuation, among other things

Let's code!

Conditionals

When you need to qualify when different tasks should be executed

```
• • • • • • •  
• if ... :  
•     ...  
• elif ... :  
•     ...  
• else:  
•     ...  
• • • • • • •
```

Handling Errors

```
• • • • • • •  
• try ... :  
•  
•     ...  
• except ... :  
•  
•     ...  
•  
•     ...  
• • • • • • •
```

Error messages can tell you a lot, but if you're not sure what a message means, search it online. Someone else has probably had the same question about it that you have!

Loops and Iteration

When you need to execute a task a certain number of times

When you need to look for something in a list or collection of files

When you want to add items to a list or write a collection of files

```
• • • • • • •  
• for ... in ... :  
•  
•  
• while ... :  
•  
• • • • • • •
```

Recursion

Solving a problem by repeatedly solving smaller versions of the same problem

Let's code!

Assignment

`python-basics-2.ipynb`

Note: please be sure to try your hand at the challenges in this Notebook! If you get stuck, don't worry, we'll talk through people's different approaches to the challenges in class.

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Go Further: Recursion

Khan Academy > Computing >
Computer Science > Recursive
Algorithms

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computing/computer-science](https://www.khanacademy.org/computing/computer-science)

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THANKS EVERYONE!

Office hours available on Wednesday
Contact me on Teams to schedule

Next class: Monday (28 February)