Lesson 3:
lambda functions and salsa
will begin at
12:03 CDT

Please unmute me
(you should hear music)

**Next Steps
in Python:
Lunch Lessons**

————

with Colby Witherup Wood
and Dan Turner

Next Steps in Python: Lambda functions

- On Zoom, unmute me ("Colby Witherup Wood") and choose Speaker View

- Two ways to access the materials:

  1. Go to http://www.github.com/agithasnoname/lambda. Click on the green "Clone or download" button, and then Download Zip. Open Anaconda Navigator and choose either Jupyter Lab or Jupyter Notebook. Navigate to the folder you downloaded.

  2. Go to colab.research.google.com, select GitHub, search for and select agithasnoname/lambda

Tomatillo Avocado Salsa recipe included in the GitHub repo.

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Next Steps in Python: Lambda functions

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If you are having trouble opening the notebook on your own computer, try the google colab option.

Lambda functions

Common in other programming languages, especially "functional" languages

In Python, they are also called *anonymous functions*, and even **functions for people who are "too lazy to define a function"**

Used for short functions that you only need once

Lambda functions

Goals for today:

1. Learn what lambdas are, so that they will be understandable when reading code

2. Learn about two of their most common uses and the alternative (better) solutions

3. Learn about why and how we use lambdas with pandas dataframes

Lambda functions

function:

```
def add_two(a, b):
    c = a + b
    return c
add_two(5, 6)        11
```

Lambda functions

function:
```
def add_two(a, b):
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```

lambda:
```
add_two = lambda a,b: a + b
add_two(5, 6)          11
```

Lambda syntax

```
lambda variables: expression

lambda x,y: x + y

lambda word: word.upper().rstrip("2020")

lambda x: x/5 + 42
```

Lambda functions

lambda:

```
add_two = lambda a,b: a + b
add_two(5, 6)          11
```

Can only be used when the output of the function is a single object

Lambda common use #1 that you shouldn't do

lambda:

```
add_two = lambda a,b: a + b

add_two(5, 6)            11
```

Don't use lambdas like this. If you are naming a function, that defeats the purpose of a lambda. They are for one-time uses and if this was for one-time use, you would have just typed:

```
5 + 6                          11
```

Lambda common use #1 that you shouldn't do

lambda:

```
add_two = lambda a,b: a + b
add_two(5, 6)        11
```

If you are naming a function, use a function definition:

```
def add_two(a, b):
    c = a + b
    return c
add_two(5, 6)        11
```

Lambda common uses that you shouldn't do

However, you will see code that uses lambdas, often from very good coders who first learned to code in a different programming language, often a functional language or a language that doesn't have the equivalent of list comprehensions and dictionary comprehensions (which is going to be lambda common use #2 that you shouldn't do…)

Lambda functions

Open up the Jupyter notebook lambda.ipynb and then return to Zoom.

I will go over an example in the notebook (you can watch me on Zoom), and then you will have time to do an exercise in your own version of the notebook.

If you have questions at any point during the session, post them in the Zoom chat. Dan will be monitoring.

Next Steps in Python

Next week: venv, conda, pip, and PEP

Don't forget to register on eventbrite for each week

Need help with lambda functions in your own code?

We're here to help.
bit.ly/rcsconsult

Have any feedback or suggestions for other Lunch Lesson topics?

Have an easy lunch recipe that you would like to share?

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For more Python resources, check out our blog