Many, Small Functions
Python Basics 9

Dr. Ryan Krauss

Grand Valley State University

pdm

Common Coding Problem

- student writes fairly long program (several hundred lines)

pdm

Common Coding Problem

- student writes fairly long program (several hundred lines)
- student comes to me and says, "Help, my code doesn't work."

pdm

Common Coding Problem

- ▶ student writes fairly long program (several hundred lines)
- ▶ student comes to me and says, "Help, my code doesn't work."
  - ▶ how am I supposed to debug hundreds of lines of vaguely broken code?

pdm

A Better Way

Some of my best coding advice:

- ▶ break your code into many, small, helper functions

pdm

A Better Way

Some of my best coding advice:

- ▶ break your code into many, small, helper functions
- ▶ make sure each function does its job correctly

pdm

A Better Way

Some of my best coding advice:

- ▶ break your code into many, small, helper functions
- ▶ make sure each function does its job correctly
- ▶ the main part of your code becomes much more readable as you call these helper functions

pdm

Small Functions

- ideally, each small function should do one thing

pdm

Small Functions

- ideally, each small function should do one thing
- a function that does more than one thing should be broken into several functions

pdm

Small Functions

- ▶ ideally, each small function should do one thing
- ▶ a function that does more than one thing should be broken into several functions
- ▶ functions that do only one thing are more likely to be reusable later

pdm

Small Functions

- ▶ ideally, each small function should do one thing
- ▶ a function that does more than one thing should be broken into several functions
- ▶ functions that do only one thing are more likely to be reusable later
- ▶ putting your small funtions in python modules that you can import makes reusing your code easy

pdm

Looking for a Sign

- ▶ if you find yourself copying and pasting chunks of code, that is a clear sign that the code should be put in a small function

pdm

Example

- see `plotting_pre_small_functions.py` and `plotting_after_small_functions.py` in my python basics github repository: `https://github.com/ryanGT/python_basics_1`

pdm