

Week 10, Lecture 1

Topic: Advanced Lists and Tuples

Starting this week, we will post a pdf of the slides for each lecture inside the folder with the Python examples we discuss in class. We do this because we may move between topics in a non-linear way. These lecture-by-lecture pdfs will correspond to Edition 3 of the Zelle textbook. You don't have to purchase Edition 3 if you don't have it, because the posted slide pdfs and Edition 2 will do. The pdf for Edition 3 is available on the web, though you may also buy it if you wish.

We'll continue to post the Edition 2 pdfs (slides) in the Zelle folder as we have been doing previously. However, please refer to the Edition 3 slides (pdf file) posted alongside the lecture examples to see exactly what we are covering. These slides should suffice to supplement the book and the examples.

Really, the only difference between Edition 2 and Edition 3 is the slightly different treatment of examples.

Today we look at what we can do with lists. You are already familiar with some of these uses. Just know that lists can store any types of objects, you can mix objects and you can mutate lists. They are VERY general. We also talk about tuples. They are like lists but they cannot be changed once you have defined them. What is their main

use? Look at the data you pass to a function: this goes in the form of a tuple. If the function has no parameters, it's an empty tuple. Otherwise it has n elements and is of size n . Likewise, what you return from a function also is returned in the form of a tuple. The receiving function gets a tuple. So no matter how complex the structure you return is, it is returned as a tuple. So remember, what is passed to a function is a tuple, and what is returned from a function is a tuple. Inside these tuples you could have lists and all other sorts of objects. But the entire unit that goes in to a function is a tuple, and the entire unit that comes back is a tuple.

As you can see, tuples are used to "pack" a number of items together. And similarly, they are used to "unpack" things that were previously packed together.

Homework: Look at the different list methods and try to write 3 or 4 Python programs that work with lists and these methods.