Key takeaways from each DataCamp-course

Introduction to Python

- The atomic types: integers, floats, strings, boolean (True/False) (2)
- Lists, including slicing and the difference between copying and referencing objects (2)
- Basic mathematical operators, including the **** -operator (exponentiation), the *%* -operator (called the modulus or modolu -operator, not to be mistaken with the absolute value of a number, which is just *abs()*), and the *//* -operator (floor division) (2)
- Using functions with keyword (default) arguments, and importing packages with further functions (2)
- Some experience with numpy arrays and why they are powerful (3)

The lectures where these topics are covered are in parenthesis

Intermediate Python

- Plotting using Matplotlib, line plots and customization options can be found in lecture (3), while histograms are in lecture (4)
- Dictionaries (2)
- Pandas DataFrame and referencing the using loc and iloc (7)
- Creating Boolean types using conditions and if/elif/else-statements (2)
- While- and for- loops, and the *enumerate()* - function (2)
- Drawing random numbers using numpy (4)

The lectures where these topics are covered are in parenthesis

Python Data Science Toolbox (Part 1)

- Creating your own Python functions and understanding the difference between global and local variables, variable-length arguments (*args) and variable-length keyword arguments (**kwargs) (2)
- Tuples, and how they differ from lists (2)
- Preventative error handling including *try*-*except* and *raise* (2 and 5)
- More DataFrame experience and how to combine them with functions (7)

The lectures where these topics are covered are in parenthesis

Python Data Science Toolbox (Part 2)

- Iterators and the *zip()* -function (2)
- List and dict comprehension (using iterables to create new lists and dicts conveniently) (2, although dict comprehension is not mentioned in the lecture the concept is the same as with lists)
- Using *open()* -function to open files saved on your computer (2)
- Generators, how they differ from comprehensions and creating a generator function by replacing *return* with *yield* (not mentioned until lecture 12, as its main advantage is that it lessens memory use, so unless you have performance problems you can stick to comprehensions)
- Even more DataFrame experience and how to read csv files (7)

The lectures where these topics are covered are in parenthesis

Extra

Two important things which Christian has covered in lecture 2 but you will not encounter in DataCamp

- Floats not being exact but approximations (they are ‘floating’) - can be important when creating conditions which should hold analytically but might not hold numerically (the *numpy.isclose() - function can be useful in such cases*
- The *itertools.product()* -function, can be very useful to avoid having to create loops inside of loops

What to do

If there are any of these concepts in the previous slides you are having difficulties with understanding after doing the Datacamp courses, write them on the Padlet, and I'll talk about them in next class.

But remember, this is a lot of stuff to have learned in a short span of time, so I don't expect you to be experts on everything (yet ☺), but to have understood it broadly when they have been mentioned in Lectures and Datacamp.

The Pandas stuff especially is something that we'll dive deeper into, later in the course (Lecture 7).