

Python Programming

Exercise 1: Python basics, data types, lists and containers

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Abstract

In this week's exercise you will become familiar with the working environment for this course. Follow the instructions on this page to be able to check out this course's Git repository, install Jupyter Notebook and start coding.

Task 1: Working with data types

Make sure you use individual cells for each task.

- For each basic mathematical operation, create a result variable and save the result of each operation in the variable. Print the results
- What is the outcome of the division of an int and a float? Print the result. Change the types of nominator and denominator.
- What possibilities do you have to make the result of a division have no decimals? What are the differences of those possibilities?
- Read about the modulo operator [here](#). Test it with various cases. Use negative and floating point numbers in your tests.
- Try to reimplement the modulo operator with the basic arithmetic operations.

Task 2: Strings and lists

- Read about the functionality of the `len()` function.
- Use it to calculate the length of strings and lists. Change the number of characters in the strings and lists and print the length after some changes.
- Combine `len()` and the slicing operator on strings and lists: Create one of each of length 10 and show the result of the slicing from index 4 to 8. (With and without `len()`)
- Fill a list with 5 strings of different length. Using `len()`: Add all lengths of the strings from the list and print the result.