

# Python Programming for non-Programmers



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Saarland University

Winter Term 2022/2023

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## Exercise Sheet 1

Issue:	31.10.2022
Submission deadline:	06.11.2022, 11:59 pm
<b>Total Points:</b>	<b>100 Points</b>

### Remarks:

There is no need to cope with the exercise sheet without help or only with the contents of the lecture. The best way to learn a programming language is to discuss it with other people or to teach yourself things simply by further research. There are many forums like stack overflow<sup>1</sup> where simple to very complex topics are discussed to find a solution for programming problems. In our internal forum you also have the possibility to exchange with other course participants, ask questions or solve problems together.

### Exercise 1.1: Basics - Numbers (15 Points)

Execute the following operations in sequential order:

- 1.1.1. Assign 13 to x
- 1.1.2. Print the type of x
- 1.1.3. Assign 5 to y
- 1.1.4. Assign the value of x increased by the value of y to z, using variables.
- 1.1.5. Assign the value of z divided by 3 to z
- 1.1.6. Print the type of z
- 1.1.7. Assign z multiplied by 6 to z
- 1.1.8. Print z
- 1.1.9. Assign  $x + 3$  to x and z divided by 4 to y in one line
- 1.1.10. Print x and y

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<sup>1</sup> <https://stackoverflow.com/>

- 1.1.11. Assign 25 to a
- 1.1.12. Assign b to 5 % of a
- 1.1.13. Print the type of b
- 1.1.14. Assign 12.75 to c
- 1.1.15. Assign sum of c and a to d
- 1.1.16. Print the type of a, c and d

### Exercise 1.2: Basics - Strings (15 Points)

Execute the following operations in sequential order:

- 1.2.1. Assign "Hello, my name is" to a variable called "str"
- 1.2.2. Add a name of your choice to the end of str
- 1.2.3. Print str
- 1.2.4. Print the length of str
- 1.2.5. Print str three times using the operator \*
- 1.2.6. Again, print str three times using the operator \*, but add a new line every time str is printed out
- 1.2.7. Assign a variable sub\_str to "Hello" accessed from str
- 1.2.8. Print sub\_str
- 1.2.9. Assign sub\_str to the name you added to str also accessed from str
- 1.2.10. Print sub\_str

### Exercise 1.3: Numbers (30 Points)

- 1.3.1. a program which accepts a Number as an input from the user and prints the cube of the Number.
- 1.3.2. Write a program which accepts the radius of a circle from the user and computes the area with pi = 3.14 (hint: use the input-function to insert the radius and convert it with the function float(radius) to a float).
- 1.3.3. Write a program that accepts an integer n and computes the value of  $nn + nnn + nnnn$ .  
Ex.  $n = 5 \implies 5 + 55 + 555 \implies 615$

**Exercise 1.4: Strings (40 Points)**

- 1.4.1. Write a program that accepts a String `n` and computes the value of `n + n`.
- 1.4.2. Write a program which accepts the user's first and last name separated by a blank-space and print them in reverse order (last name, first name) with a space between them.
- 1.4.3. For a given String `str`, write a program to create a string `rev_str`, which is the reversed version of `str`.
- 1.4.4. Given two Strings `str1` and `str2`, create a new String `str3` by appending `str2` in the middle of `str1`. If the length of `str1` is unequal, the middle of `str1` is the half of the length of `str1 + 1`.

Ex.: `str1 = "hello"`

`str2 = "abcd"`

→ `str3 = "helabcdlo"`