

What is a function?

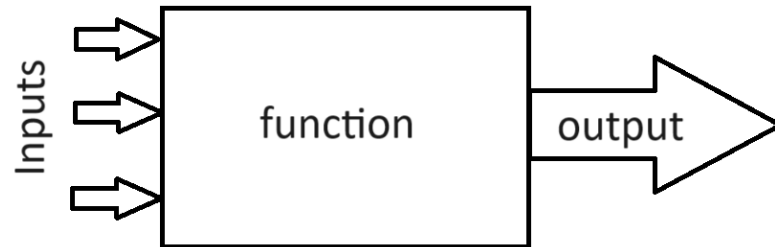
Week 5

What is a function? Why to use them?

- A **function** is a "mini-program" that performs a specific task.
- Breaking the program into functions keeps the program **structured** and **understandable**.
- A function can be **re-used** countless times after it is defined.
- A function can be called from any other part of the program. It is even possible that a function calls itself. This is called *recursion*.
- You can write a library of functions, so also other programmers can use your work.

What is a function

- We have already used some functions: `int()`, `float()`, `str()`, `round()`, `range()`, for instance.
- Functions take some **inputs**, and they **return** a value.



Example: `round()`

The `round()` function in Python takes 2 inputs:

- The number you want to round.
 - The number of decimal places to round to.
 - The order of the inputs is important!
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- By specifying 0 as the second input, you want to round to zero decimal places.
 - The result is still returned as a floating-point number, hence `round(6.7, 0)` returns 7.0 instead of 7.

Two kinds of functions

- **Built-in Functions:** These are pre-defined functions that come with Python installation. They can be used directly in a Python program without importing external libraries.
- **User-defined:** These are functions created by the user to perform a specific task or set of tasks.