

Hi! In this video I will show you how to use the functions that allow you to input and output data in Python.

[SLIDE 2] Let's start with the function that allows you to print information on screen. Here I am showing you two pieces of code, one in C and one in Python that print a simple text message, the content of a numerical variable and the content of a text variable. You can see the result of executing the Python code on the black box to the right.

Let's have a look at the differences of the pieces of code in charge of printing information on screen.

[SLIDE 3] In the C code, you need to remember to include the library `stdio` to be able to use the function `printf`. In the case of Python, you don't need to include anything.

[SLIDE 4] Next, in both programming languages you need to assign some value to the variables you want to use. In C you need to declare a type and assign the values. In Python, you simply assign the values.

[SLIDE 5] To print in Python you use the function called `print`. To print a simple text message, simply write the message between quotes. Unlike C, to add a new line after printing the message, you don't need to do anything in Python. The function `print` automatically adds a new line after printing the message.

Let's move now to the case where you also want to print the content of a variable.

[SLIDE 6] The simplest case is printing the value of a variable of text type. That is, a character or a string.

In that case, if you want to print a mixture of text and the content of a text variable, you use the concatenator operator represented by the symbol `+` (plus) to mix text and variables. So, in this case, if you want to add text before printing the value of the variable, you write the text between quotes and then, add the variable using the symbol plus, as shown here.

In red I am also showing different ways in which you can use the `print` function when you want to print only a text variable, or a mixture of text and the content of text variables.

[SLIDE 7] Finally, if you want to print a numerical variable, you also use the concatenator plus. But, since Python assumes you are sending text values to the screen, the numerical value needs to be converted to a string. This is done using the function `str()`. If you forget to transform your numerical value into a string in the function `print`, the system will throw an error.

[SLIDE 8] Now, let's see how a Python programme can receive data from the user using the keyboard.

[SLIDE 9] Here you can see the pieces of code needed to receive a text input from the user.

[SLIDE 10] To use the functions `printf` and `scanf` in C, you need to include the library `stdio`. In Python you do not need to include anything.

[SLIDE 11] Next, in C you need to declare the variable where you are going to store the data entered by the user. In Python, you don't need to do that.

[SLIDE 12] Now, in both languages you display a message letting the user know what type of data the programme is expecting. You already know how to use the function `print` to do so in Python.

[SLIDE 13] And this is the step where the data is stored in a variable. In the case of C, you use the function `scanf` that needs two input arguments: the type of the data and the memory address of the variable storing the value. In the case of Python, you assign to the variable where you want to store the input data the return value of the function `input`.

[SLIDE 14] Finally, you print the value entered by the user.

[SLIDE 15] Notice that all values entered by the keyboard are considered of type string in Python, no matter whether they are numbers or text.

[SLIDE 16] Thus, when you add the variable name to the list of arguments of the print function, you don't need to transform it into a string. It is already a string.

Ok, that's for using the functions print and input in Python. In the next videos we will see how to build our own functions.