Homework #2

Due: 10/03/2020, 9:00 pm

Instructions:

Create a new Python script file and name it *yourlastname_homework2.py*, where *yourlastname* is your last name. For me, it would be *Smirnov_homework2.py*. Save your file in your homework folder on your computer (a folder that you can easily find).

To answer the questions below, you will need to write some Python code. Save all your Python code in *yourlastname_homework2.py.* I should be able to run your complete code without errors.

When finished, upload your file on Google Classroom using Homework 2 assignment link.

Questions/tasks:

1) At the top of your script add a *comment* describing your assignment (for example, "homework 2")
2) In your script, create a string variable called *name* and assign your real name as the value. For example, for me it would be: *name* = "Oleg Smirnov." In the same script, create another string variable name2 and once again assign your name to it. For me, it would be: *name2* = "Oleg Smirnov"
3) Print the identification value of the variables that you created. You can combine multiple commands in one line. For example: print() is the command to display what's inside the parenthesis; id() is the command to find the unique identification number of an object (think, memory address). You can combine the two commands: print(id(name)) will display the id of the variable *name*. Compare the id for *name* and *name2*. Are they different?
4) Repeat the same task as above. However, this time do not run your script. Instead, use the interactive window (Spyder console) and create the *name* and *name2* variables one at a time. Then, using the interactive window to see the id of the variables. Notice that when you work in the interactive window, you do not need to use print() to display the values. You can simply type id(name) and press enter.
5) What can you conclude on the basis of tasks 3 and 4. Use print() to display your answer to this question. (Don't forget use the quotation marks around your answer; otherwise, you will get an error).
6) Create an integer variable called *year* and assign your birth year as the value.
7) Create an integer variable age to calculate your age. Hint: use the variable *year* above and the current year to calculate your age.

8) What is the data type of *name*? Verify this in your Python script using type() function. What is the data type of *year* and *age*? Verify.
9) What is the data type of age/1? (age divided by integer 1)
10) Print the value of *name* + *name*? What is the data type? Can you separate name and name with a space? For example, instead of 'Oleg SmirnovOleg Smirnov', I would like to see 'Oleg Smirnov Oleg Smirnov'. What do you need to change/add for that?
11) Print the value of *name* * *month.* Can you print the value of *name * month/1*? Why not? Answer using print().
12) Explore the following code using the variable age above:

    print(age > 20)

    print(age < 10)

    print(age == age)

    print(type(age > 20))

    print(type(age < 10))

    print(type(age == age))
13) Using the modulus operator (see the posted slides, last page), can you examine if 7 is an even number. Repeat for 8. As in Task 12, to verify if a value is equal to another value, use the following code: print(x == y). If x and y values are equal, then the result will be (Boolean) True. Otherwise, it will be (Boolean) False.
14) What is the data type of floor division and modulus operators? What determines if it is an integer or a float?