Homework #2. Data types and basic operators.

It is VERY important for you to complete your homework. Our 45-minute meeting once a week is not enough to make good progress if you do not practice at home.

Instructions:

Create a new Python script file and name it yourlastname_homework2.py, where yourlastname is your last name. For me, it would be Bulygin_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.

Note on comments: you can add comments to your script using # symbol. For example:

this is a comment. Python will ignore everything after the # symbol.

Questions/tasks:

1) Create a string variable called name and assign your real name as the value. For example, for me it would be: name = "Misha Bulygin"

2) Create an integer variable called year and assign your birth year as the value. Create an integer variable called day and assign you birth day as the value (for example, if you were born on 17th, then day = 17).

3) Create an integer variable called month and assign your birth month's number as the value. (1 for January, 2 for February, and so on).

4) What is the data type of name? Verify this in your Python script using type() function.

5) What is the data type of year? Verify in Python.

6) What is the data type of year/month? (Year divided by month). Verify.

7) What is the data type of year/1 (Year divided by one). Verify.

8) What is the data type of year * 1 (Year multiplied by one). Verify.

9) What is the data type of month + month? Verify.

10) What is the data type of month + month/1? Verify?

11) What is the value of name + name? What is the data type?

12) What is the value of name * month? What is the data type?

13) Can you find a value of name * month if month is a float? (To do that you first need to convert your month variable to the float data type).

14) What is the data type of int(float(string(year)))?

15) What is the data type of float(int(string(year)))?

16) What is the data type of string(int(float(year)))?

17) A variable of a Boolean data type can either be “True” or “False”. What is the data type of bool(year)?

18) What is the data type of bool(str(year))?

19) Create a string variable which is equal to the value of Pi (3.14159). How do you transform it into a float variable? Can you transform it into an integer variable: (a) directly from string to integer, (b) indirectly, from string to float and then from float to integer? Can you do it using a single line of code?

20) Take a closer look at question #12. Using day, month, and year variables, how do you create your birthdate string variable that looks like this “9/17/2010”, for example. (Hint, one of the possible solutions would involve using another string variable equal to “/”).

21) Create a new string variable called profile that looks something like this: “Max Power, 9/17/2010” – where “Max Power” is your first and last name, and “9/17/2010” is your birthdate variable. Notice, there is a comma and space that separate the name and the birthdate.

22) Convert your birthday month to a Boolean value? Is it True or False?

23) Can your name string file be converted to a Boolean? Is it True or False?

24) What could be the value of a variable that is equal to False when converted to a Boolean? (Try different values in the interactive window, see if you find one or two). Verify in your code.