First Assignment GEP Coding Challenge

Before you start coding a few remarks.

If you need assistance on anything (tools, Python, programming logic, etc) you can ask a question in Mattermost. We have coaches available to help. Of-course anybody can help, because this is a social event.

https://mattermost.ing.net/gep-coding/channels/python-3

If you prefer you can also directly contact a coach. In this case contact:

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If you are done, and happy with the result, send a link to your code (preferably in GitHub or SoloLearn) to taco.bakker@ing.com

Please send in your code within one week. If you need more time due to holidays etc then please let us know.

Do not cheat!

It will be easy to find solutions on the internet, but that spoils all the fun!

Please send in your own code!

Happy coding!

Experts group

Your first task is to solve Euler problem 12 with a Python program.

What is the value of the first triangle number to have over five hundred divisors?

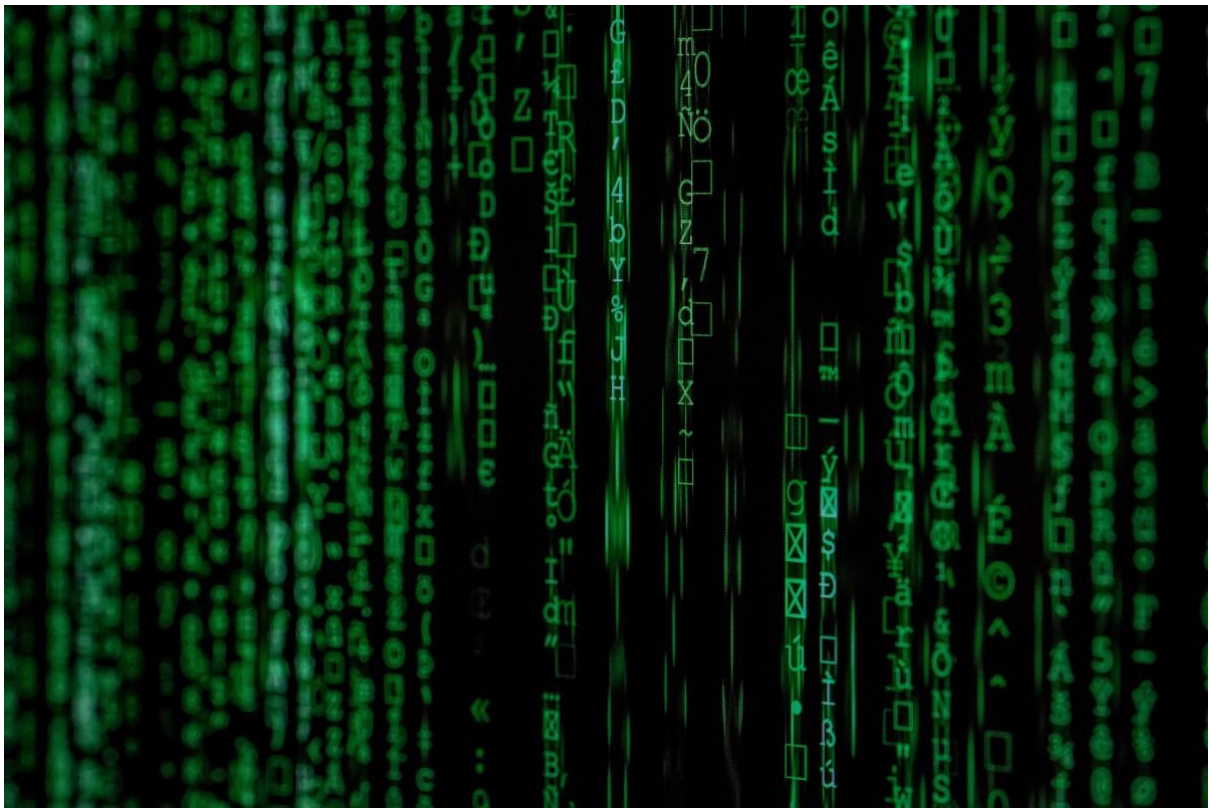
Beginners group

1. Sign up with SoloLearn
2. Start the Python3 course
3. Finish at least “Basic Concepts” and “Control Structures”

4. Sign up with Project Euler
5. Invite me in the “Friends” section. My key is:
   `1404686_y00m6thLooWgSxd4i07dYZ3FRnHfjUYk`

6. Set up your Python environment.
    - You can use any tool that you prefer. I recommended PyCharm but many other options are possible.
    - It is also possible to start with just SoloLearn.
7. Solve Euler Problem 1
    - If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.
    - Find the sum of all the multiples of 3 or 5 below 1000.

If you feel confident enough then give it a try. But if you need some more help go to the next page of this document.



How to instruct Python to solve this problem?

You have to do it step-by-step

We are going to sum all divisors of 3 and 5 below 10

But first we have to find them

Is 1 a multiple of 3 or 5?
No, do nothing
Is 2 a multiple of 3 or 5?
No, do nothing
Is 3 a multiple of 3 or 5?
Yes, add
Is 4 a multiple of 3 or 5?
No, do nothing
Is 5 a multiple of 3 or 5?
Yes, add
Is 6 a multiple of 3 or 5?
Yes, add
Is 7 a multiple of 3 or 5?
No, do nothing
Is 8 a multiple of 3 or 5?
No, do nothing
Is 9 a multiple of 3 or 5?
Yes, add

You see a repeating pattern. You can use “for loops” for this to avoid endless repeating code.

Looping through a range of numbers can be done with “range”

You see conditional tests. You can use the “if” statement.

The test: is number m a multiple of number n can be done with the “modulus” function: m % n

This is True if m % n == 0

Create a variable (for example: total) that will be used to add the numbers

Make sure to initialize this variable with a value zero

Adding can be done with an operator: +

Example: total = total + 3 or short: total += 3

You have to display the result. You can use “print” for this.

Note: There are many more possible solution for this problem. This is just an example.

References:

For loop and range

https://www.w3schools.com/python/python_for_loops.asp

if

https://www.w3schools.com/python/python_conditions.asp

operators (+ and %) and logical operators like “or” “and”

https://www.w3schools.com/python/python_operators.asp

print

https://www.w3schools.com/python/python_variables.asp