Lab 4

Python: Generators

[Compulsory]

Authors: Ragnar Nohre 2017, moved to English Johannes Schmidt 2018-2022

This lab's goal is to exercise generators in python.

4.1 Experiment

Before you start, read chapter 9 in the python tutorial, it describes *iterators and generators.*
Then, do the following experiment in interactive mode. Possibly play around to understand better.

```
def myTest():
   yield 1
   yield 5
   yield 6
   yield 99

a = myTest()
b = myTest()

print(   a.__next__()    )
print(   a.__next__()    )

print(   b.__next__()    )
print(   b.__next__()    )
```

```
print(   a.__next__()    )
```

When you think to understand what `yield` does, proceed to the main task.

4.2 Task

Implement a generator, using the key word `yield`, that generates all numbers of the fibonacci-series untill a maximum number provided by a parameter.
Below you can see how your generator (`fibonacci`) is supposed to work. If you have implemented it correctly, the loop below shall generate the numbers 1,1,2,3,5,8,13...832040, that is, all numbers of the fibonacci-series that are smaller than 1000000.

```
for i in fibonacci(1000000):
    print(i)
```

4.3 Examination

Upload your python file on Canvas, containing your fibonacci implementation and the above test code. No oral presentation is required for this lab.