Python Programming

Function Homework 1

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Teaching, Training and Coaching since more than a decade!

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Homework 1: Special Multiplication

- Develop function: `def special_multiplication(string):`
- It returns a string where each character is repeated according to its position
  - Input: abcxf
  - Output: abbcccxxxxfffff
  - Observe
    - a repeated once
    - b twice
    - c 3 times
    - x 4 times
    - And so on

Homework 2: Max of 6 numbers

- Develop these 4 functions to help compute maximum of 6 numbers
- Each function should be only **a single line of code**
  - Hint: make use of the other functions

```
2   def my_max2(a, b):
3       if a > b:
4           return a
5       return b
6
7
8   def my_max3(a, b, c):...
10
11  def my_max4(a, b, c, d):...
13
14  def my_max5(a, b, c, d, e):...
16
17  def my_max6(a, b, c, d, e, f):...
19
20  print(my_max6(5, 3, 8, 2, 10, 3))
```

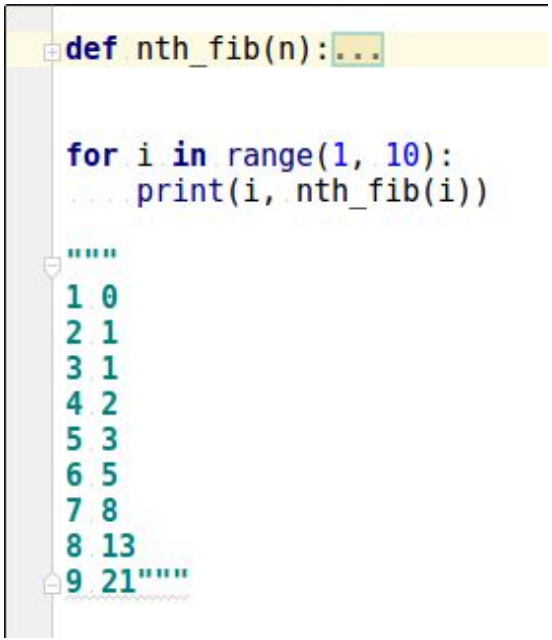
Homework 3: Get nth-prime

- Implement the following 2 functions:
- is_prime(num);
  - Return true if number is prime (it is not divisible by any number > 1
- nth_prime(n);
  - Return the n-th prime number. It should use is_prime function
  - E.g nth_prime(6) = 13
    - Recall primes are: 2, 3, 5, 7, 11, **13**, 17, 19

```
def is_prime(num):...


def nth_prime(n):...


for i in range(1, 10):
    print(i, nth_prime(i))

"""
1 2
2 3
3 5
4 7
5 11
6 13
7 17
8 19
9 23
"""
```

Homework 4: Get nth-fibonacci

- Fibonacci is a popular sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, …
  - Every number is sum of last 2 numbers
  - E.g. 13 = 5 + 8
- Write function: nth_fib(n)
  - That returns the nth term
  - Hint: Simple loop



```
def nth_fib(n):...


for i in range(1, 10):
    print(i, nth_fib(i))

"""
1 0
2 1
3 1
4 2
5 3
6 5
7 8
8 13
9 21"""
```

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."