Homework 2

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September 25, 2015

In this report I am going to show a code that will print first 100 prime numbers and put them into the array. In addition, program will count the time that is needed to fully run the program.

Figure 1: Python is the best language EVER!!!!

PYTHON CODE

```
import time
start = time.time()

array = [2]
num = 3
while len(array)<100:
    prime = True
    for x in range(2,len(array)):
        if num%array[x]==0:
            prime = False
    if prime:
        array.append(num)
    num = num + 1
print array

end = time.time()
print (end - start)
```

At first, we import "time" package that will figure out the time program is in order to fully fully run program. Then, we started our timer from "time" package. After that, we create an array with the first prime number - 2. Later, we enter our first candidate number that will run through the program and figure out if the number is prime or not. Next, we use while loop in order for program to run until array will be filled out with 100 numbers. Then, we set prime var to Boolean value - True for the beginning. After that, we need to create for loop that will take the numbers one by one starting from 2 till array length, which is equal to 100 prime numbers. Next, we use if statement that evaluates if the remainder from num variable mod number from array is equal to 0. If it is equal to 0, the number is not prime and we set prime var to boolean value - False. Finally, if the remainder isn't equal to 0, prime stays true and the number is appended to our array. Finally, program prints out the array and time that was needed to fully run the program.

Output:

```
[2, 3, 4, 5, 6, 7, 9, 11, 13, 17, 19, 23, 29, 31, 37, 41,
43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103,
107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167,
173, 179, 181, 191, 193, 197, 199, 211, 223, 227, 229, 233,
239, 241, 251, 257, 263, 269, 271, 277, 281, 283, 293, 307,
311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379,
383, 389, 397, 401, 409, 419, 421, 431, 433, 439, 443, 449,
457, 461, 463, 467, 479, 487, 491, 499, 503, 509]
0.00800013542175
```

all of these number, despite the last number with decimals, are first 100 prime numbers 0.00800013542175 - time is used to run the program