

# Homework 01

## Question 2

for MEG304301

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Convert this program from Python2 to Python3

For example, if n is 10, the output should be "2, 3, 5, 7". If  
"2, 3, 5, 7, 11, 13, 17, 19".

```
# Python program to print all primes smaller than or equal to
# n using Sieve of Eratosthenes

def SieveOfEratosthenes(n):

    # Create a boolean array "prime[0..n]" and initialize
    # all entries it as true. A value in prime[i] will
    # finally be false if i is Not a prime, else true.
    prime = [True for i in range(n + 1)]
    p = 2
    while (p * p <= n):

        # If prime[p] is not changed, then it is a prime
        if (prime[p] == True):

            # Update all multiples of p
            for i in range(p * 2, n + 1, p):
                prime[i] = False
            p += 1
    prime[0] = False
    prime[1] = False
    # Print all prime numbers
    for p in range(n + 1):
        if prime[p]:
            print p,

# driver program
if __name__ == '__main__':
    n = 30
    print "Following are the prime numbers small
    print "than or equal to", n
    SieveOfEratosthenes(n)
```

HW1: Q2

GOAL: Python2 -> python3

### Task:

- \* conversion (py2 -> py3)
- \* enhance it for different input n  
( n = 30, 45, or 111)
- \* using JUPYTER NOTEBOOK  
to run this code with different  
input values
- \* export (.ipnb) to runnable .py  
for Thonny.
- \* export all of OUTPUTs with code  
as the HTML-style report.

# Tests & Results

## Set n to 30

▷

```
1 n = int( input() )
2 SieveOfEratosthenes(n)
```

[2]

✓ 1.5s

Python

...

2

3

5

7

11

13

17

19

23

29

## Set n to 45

▷

```
1 n = int( input() )
2 SieveOfEratosthenes(n)
```

[4]

✓ 1.3s

Python

...

2

3

5

7

11

13

17

19

23

29

31

37

41

43

## Set n to 111

```
1 n = int( input() )
2 SieveOfEratosthenes(n)
```

[6] ✓ 1.2s Python

... 2  
3  
5  
7  
11  
13  
17  
19  
23  
29  
31  
37  
41  
43  
47  
53  
59  
61  
67  
71  
73  
79  
83  
89  
97

[show more \(open the raw output data in a text editor\) ...](#)

97  
101  
103  
107  
109