

Assignment 5

All assignments *must* be submitted as a JupyterLab `.ipynb` notebook file via email (aattanasio@unm.edu). Title the file with your name: `Assignment_NAME.ipynb`.

Assignment 4 mentioned the *Sieve of Eratosthenes*. The relevant information is mentioned again below:

The *Sieve of Eratosthenes* is an ancient method for calculating prime numbers. You can read about it on [Wikipedia](#). Some pseudocode for the algorithm is below.

Note: Pseudocode is a plain language description of the steps in an algorithm. It is often composed from structural conventions of a normal programming language, but is intended for human reading rather than machine reading. That is, it will most likely error out if executed by any programming language interpreter.

```
In [ ]: algorithm Sieve of Eratosthenes is
    input: an integer n > 1.
    output: all prime numbers from 2 through n.

    let A be an array of Boolean values, indexed by integers 2 to n,
    initially all set to true.

    for i = 2, 3, 4, ..., not exceeding √n do
        if A[i] is true
            for j = i2, i2+i, i2+2i, i2+3i, ..., not exceeding n do
                set A[j] := false

    return all i such that A[i] is true.
```

Based on your solution to Assignment 4, write a Python function that creates a list of all primes less than any inputted integer. To test your function, determine the number of primes less than:

- 10
- 100
- 1,000
- 10,000
- 100,000

```
In [ ]: # NAME_OF_YOUR_SCRIPT.py
```

```
In [ ]:
```

```
In [ ]:
```