

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
```

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In [ ]:
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In [ ]:
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In [ ]:
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