Project_Euler_010

February 4, 2018

1 Project Euler Problem 10

The sum of the primes below 10 is $2 + 3 + 5 + 7 = 17$.

Find the sum of all the primes below two million.

```python
In [1]: # We'll go back to using our trusty prime sieve from problem 7.

        from math import sqrt

        prime_list = [True]*2000000
        prime_list[0] = False
        prime_list[1] = False

        for i in range(2, int(sqrt(len(prime_list)))+1):
            for j in range(2*i, len(prime_list), i):
                prime_list[j] = False

        prime_sum = 0
        for k in range(len(prime_list)):
            if prime_list[k]:
                prime_sum += k

        print("The sum of primes below 2,000,000 is {}."
              .format(prime_sum))
```

The sum of primes below 2,000,000 is 142913828922.