Project 1

Due Date: 02/06/2019

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Late Policy: -10 points per hour late

Instructions: This is an individual assignment. Answers should be your own work. Include comments where appropriate. Every java file should have comment block with your name, course section and description about the assignment at the beginning.

Write a java program to compute all prime numbers less than equal to a given integer N using the algorithm "**Sieve of Erotosthenes**".

The Sieve of Eratosthenes is a method used to compute all primes less than equal to N. We begin by making an array of integers 2 to N. We find the smallest integer, i that is not crossed out, mark i as prime, and cross out all of its remaining multiples such as 2i, 3i, … ..(actually better to start at i^2 and use increments $i^2 + i$, $i^2 + 2i$, $i^2 + 3i$,… etc until N). When i is > $\sqrt{N}$, the algorithm terminates.

Prompt the user to give an positive integer value N and print all primes up till N using the above algorithm on screen.

```
Input: an integer n > 1.

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

Output: all i such that A[i] is true.
```

https://en.wikipedia.org/wiki/Sieve_of_Eratosthenes#/media/File:Sieve_of_Eratosthenes_animation.gif

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Java source file