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import java.util.Scanner;
import java.lang.Math;
import java.text.DecimalFormat;
public class Sieve {
    public static void main(String[] args)
    {
        System.out.println("\nSieve of Eratosthenes\n");
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the primes upper bound ==>> ");
        final int MAX = input.nextInt();
        input.close();

        boolean[] primes = computePrimes(MAX);
        displayPrimes(primes);
    }
    public static boolean[] computePrimes(int upperBound) {
// This method will compute the prime numbers
        boolean[] primeArray = new boolean[upperBound + 1];
        primeArray[0] = false;
        primeArray[1] = false;
        for (int i = 2; i<=upperBound; i++)
            primeArray[i]=true;
        for (int i = 2; i <= Math.floor(Math.sqrt(upperBound));
i++) {
            if(primeArray[i]==true){
                for (int j = 2*i; j<=upperBound; j+=i){
                    primeArray[j] = false;
                }
            }
        }
        return primeArray;
    }
    public static void displayPrimes(boolean[] primeArray)
    {
        String zeros = new String();
        int count = 1;
for (int i = primeArray.length-1; i>0; i=i/10) {
            zeros = zeros.concat("0");
        }
        DecimalFormat numZero = new DecimalFormat(zeros);
        if(primeArray[2]==true) {

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        System.out.print("\n"+ numZero.format(2)+ " ");
    }
    for(int i = 3; i<primeArray.length; i++){
        if(count%16 == 15 && primeArray[i]==true) {
            System.out.print(numZero.format(i)+ " " + "\n");
            count++;
        }
        else if(primeArray[i]==true) {
            System.out.print(numZero.format(i)+ " ");
            count++;
        }
    }
}
}
}
// This method will display the prime numbers
```