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import java.text.DecimalFormat;
import java.util.Arrays;
import java.util.Scanner;

public class SieveEratosthenes {

    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();
        boolean primes[] = new boolean[MAX];
        computePrimes(primes);
        displayPrimes(primes);
    }

    public static void computePrimes(boolean primeArray[]) {

        for(int i=2; i<primeArray.length; i++) {
            primeArray[i] = true;
        }

        for(int i=2; i<=Math.sqrt(primeArray.length); i++) {
            if(primeArray[i]==true) {
                for(int pos=2*i; pos<primeArray.length; pos+=i) {
                    primeArray[pos] = false;
                }
            }
        }
    }

    public static void displayPrimes(boolean primeArray[]) {
        System.out.println("Primes between 1 - " + primeArray.length + " :");
        System.out.println("");
        String decimalFormat = "0000";
        DecimalFormat df = new DecimalFormat(decimalFormat);
        int col = 1;
        for(int i=2; i<primeArray.length; i++) {
            if(primeArray[i]==true) {
                if(col%16!=0) {
                    System.out.print(df.format(i) + " ");
                    col++;
                }
                else {
                    System.out.println(df.format(i) + " ");
                    col++;
                }
            }
        }
    }
}

```