

```
1 import java.text.DecimalFormat;
2
3
4 public class Sieve {
5
6     public static void main(String[] args) {
7
8         System.out.println("\nSieve of Eratosthenes\n");
9
10        Scanner input = new Scanner(System.in);
11        System.out.print("Enter the primes upper bound ==>> ");
12        final int MAX = input.nextInt();
13        input.close();
14        boolean[] primes = computePrimes(MAX);
15        displayPrimes(primes);
16    }
17    public static boolean[] computePrimes(int upperBound)
18    {
19
20        // This method will compute the prime numbers
21        boolean[] primeArray = new boolean[upperBound+1];
22        for (int i = 2; i < primeArray.length; i++) {
23            primeArray[i] = true;
24        }
25
26        for (int i = 2; i <
27        Math.ceil(Math.sqrt(primeArray.length)); i++) {
28            if (primeArray[i]) {
29                for (int j = i*i; j < primeArray.length; j+= i)
30                {
31                    primeArray[j] = false;
32                }
33            }
34        }
35        return primeArray;
36    }
37    public static void displayPrimes(boolean[] primeArray)
38    {
39        String padding = "";
40        int len = String.valueOf(primeArray.length).length();
41        for (int i = 0; i < len; i++) {
42            padding = padding + "0";
43        }
44    }
45 }
```

```
42     }
43     int count = 0;
44     DecimalFormat df = new DecimalFormat(padding);
45     for (int i = 2; i < primeArray.length; i++) {
46         if (primeArray[i]) {
47             System.out.print(df.format(i) + " ");
48             count++;
49         }
50         if (count >= 16) {
51             System.out.println();
52             count = 0;
53         }
54     }
55 }
56 }
```