```java
public static List<Integer> sieveOfEratosthenes(int n) {
    boolean[] prime = new boolean[n + 1];
    for (int i = 0; i <= n; i++)
        prime[i] = true;

    for (int p = 2; p * p <= n; p++) {
        if (prime[p]) {
            for (int i = p * p; i <= n; i += p)
                prime[i] = false;
        }
    }

    List<Integer> primes = new ArrayList<>();
    for (int i = 2; i <= n; i++) {
        if (prime[i]) {
            primes.add(i);
        }
    }
    return primes;
}
```