Assignment 2

Write a Java program to check primeness of numbers. The input is a list of positive integers and your goal is to process this list and identify which of these numbers are prime. You are required to use the Util.java (`http://www.cse.iitm.ac.in/~krishna/cs6868/P2/Util.java`) to read input and print the output. See the sample Main.java (`http://www.cse.iitm.ac.in/~krishna/cs6868/P2/Main.java`) for sample usage.

The program (main file should be named P2.java) should take one input: number of threads. the program should read the input and print the prime numbers (along with the pairs of emirps) therein. For example, the following sequence of commands should lead to the o/p given below:

```
$ cat input.txt
11
13
21
31
11
$ javac P2.java
$ cat input.txt | java P2 2 # => compute the primes using 2 threads.
Primes :
11
13
31
11
Emirp Pairs :
31
13
Time taken (sec) to finish computation = 3.04457E-3
```

Notes: 1) The i/p and o/p routines are given in Util.java 2) The Exact time taken to compute may vary from user to user. 3) We will test the program for varying number of threads and see (i) the correct o/p is generated all the times, (ii) how it scales. 4) There may be duplicate numbers in the input. The output primes list may include duplicates. The Emirp pairs won't have duplicates. 5) the function `storePrime` in `Util.java` is not thread-safe. But for this assignment, you cannot use the java `synchronized` construct. Instead use locks (shared?), if required.