Assignment 1

- Create a methods that counts (use multiple threads) a number of primes in a given range

  - int countPrimes(long start, long stop)

Assignment 2

- define the Matrix and Vector classes to represent a matrix and vector
    - the type of matrix/vector entries is double

- create the methods
    - **`Vector multiply(Matrix m, Vector v)`**

    - **`Matrix multiply(Matrix m, Matrix v)`**

    - implement parallel multiplication
    - in a case of bad size of matrix/vector, the method throws an exception

Assignment 1

- implement a parser of INI files
  - a method that obtains a path to the file and returns HashMap<String, HashMap<String, String>>

  - a INI file format
    - empty lines are ignored

```
[section1]
key1=val1
key2=val2
[section2]
key3=val3
key4=key4
```

Assignment 2

- Create a class that
  - in the constructor, it obtains a path to a directory
  - it watches changes in the directory
    - ideally use the WatchService
  - it allows other objects to register on it and obtain notifications about changes in the directory
    - observer pattern
    - create your own suitable Observer interface

```
class DirWatcher {
  public DirWatcher(Path p);
  public void addObserver(Observer o);
  protected void notifyObservers();
}
```

Tests...

Test 1

- Is is possible to declare the variable **i** so that the following cycle never terminates?

```
while (i != i + 0) {

}
```

The example based on code from *J. Bloch, N. Gafter: Java Puzzlers*

Test 2

- Is is possible to declare the variables **i** and **j** so that the following cycle never terminates?

```
while (i <= j && j <= i && i != j) {

}
```

The example based on code from *J. Bloch, N. Gafter: Java Puzzlers*