Lab 10 - Networking - Client/Server

This lab contains in-class exercises related to networking in Java. Before starting solving these exercises, one is advised to review java.net.ServerSocket and java.net.Socket classes.

Task 1: Develop a class to determine all the IP addresses of a host, given the host's name.

Task 2: Develop a program called ReadSites that takes as command line parameters the URL strings (without protocol, i.e. http://). The program must print the content of all sites entry point (index.html or similar for each site).

Task 3: Develop a "Echo" multi-threaded server. The server structure is given here:

```
public class ThreadedEchoServer {
   public static void main(String[] args) throws IOException {
       ServerSocket s = null;
      try {
           s = new ServerSocket(7777);
          int i = 0;
           for (;;) {
               Socket incoming = s.accept();
               System.out.println("Spawning " + i++);
               new ThreadedEchoHandler(incoming, i).start();
           }
       } catch (Exception e) {
           System.out.println(e);
       } finally {
           s.close();
      }
  }
}
```

Study first the Echo server. You need to implement the thread class ThreadedEchoHandler

Task 4: In the observer example provided, replace the OnlineLearner and InclassLearner class with the generic class

```
public class Learner<L> {
   ...
}
```

What else needs to be changed? Refactor the given example so that you can create three learner types.