Lab Session 2, Concurrency and Parallelism

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October 29, 2012

Abstract

The goal of this session is to discover the basic mechanisms of communication through sockets in JAVA. An Eclipse project containing the skeletons of the source files is available at the same address as this document. In order to realize the exercises, you will require the following documents: i) this lab session subject ii) the skeleton of the source files iii) the course iv) the JAVADOC (http://docs.oracle.com/javase/1.4.2/docs/api/).

Exercise 1: Client/Server

1/ Write a class *Server* that:

- opens a socket on a port number given as an argument,

- waits for a connection,

- prints a message when the connection is accepted.

2/ Try to connect to the server using i/ the *Telnet* command and ii/ using a browser

3/ Write a class *Client* that connects to the server and prints a message when it is done. The address and port of the server are given as an argument.

4/ Improve your application so that the client sends successively 5 messages and receives an acknowledgment including the original message from the server. When the client emits the keyword **stop**, the connection are stopped at both end and the program is shut down.

Exercise 2: Multi-client

Modify the server part of the application written in Exercise 1 so that the server can accept many client connections.

1/When the server accepts a connection, it delegates the management of this connection to an instance of the runnable class *ClientManager*, and then wait again for connection.

2/The class *ClientManager* discusses with the associated client similarly to the server in Exercise 1.