

# 01JFD “Security and architecture of distributed systems”

## *homework n.1*

Politecnico di Torino  
academic year 2005-06

Develop a server application that is capable to respond to a simple HTTP/1.0 request. The application should be able to handle the HEAD and GET methods. In particular the server should provide the content required by the client with an HTTP/1.0 response. In case of an error (e.g. File not found), a default HTML page bearing an error message should be returned.

The server should accept two parameters on the command line: the **port number** where the server should bind to upon startup, and the **root path** of the server. Each request from the client should be relative to the server's root path. For example, assuming that the path parameter is set to “/var/www”, a request for “/mysec.html” (equivalent to “mysec.html”) should be mapped to “/var/www/mysec.html”. Requests for sub-directory contents (e.g. “/subdir/mysec.html”) are forbidden and a proper error message should be sent to the client if such a request is received. Moreover the server should:

- be compatible with Mozilla clients (suggested version is 1.7.1+), i.e. it should be possible to retrieve a content by using these clients (\*)
- be implemented by using a concurrent architecture
- safely handle all possible errors
- ignore HTTP headers sent by the client
- assume the content to be sent to the client to be “text/html”
- be developed in the C language

At minimum, the HTTP headers that the server should send in the responses are:

- Content-Type
- Content-Length

In addition to the source code it must be provided:

- a makefile to automatically create the program by giving the command ‘make’
- proper documentation, containing at least the logic and flow of the implemented solution.

Everything must be delivered as a ZIP or TAR-GZ archive named “hw1\_*surname\_name*”.

(\*) NOTICE: ***in order to set Mozilla clients to perform HTTP/1.0 requests*** you should go to the 'Preference' menu and click on the 'HTTP Networking' under the 'Advanced' options, now check the 'Use HTTP 1.0' and uncheck the 'Enable KeepAlive' option in the 'Direct Connection Options' frame.