

Project #2d – HTTP-based Cross-Platform Distributed Systems

due last day of class

Purpose:

This project develops a cross-platform distributed system that can run on either Windows or Linux and can be used remotely from either Windows or Linux platforms. The purpose of this project is to design an application that communicates through HTTP messages between a Java application on Linux to a C++ application on Windows. Thus we demonstrate collaboration between technologies (native and managed code), languages (Java and C++) and across process and machine boundaries.

Requirements:

Your CPD project:

1. **shall** use standard C++ and the standard library on Windows and Java and the standard Java packages on Linux.
2. **shall** provide an application that implements the functionality of Project #1, e.g., searching for text within file sets that exist on remote machines.
3. **shall** provide an HttpClient and HttpServer in C++ running on Windows.
4. **shall** provide an HttpClient and HttpServer¹ in Java running on Linux.
5. **shall** provide a server application that searches for text in specified file types on a directory tree rooted at a specified path. The server is required to have implementations for both Windows and Linux.
6. **shall** provide a client application that connects to the server using HTTP and specifies a path, file pattern, and text string.
7. You have the option of returning the set of filenames that contain the specified text as an HTTP response, or establishing HttpClient and HttpServer on each side so the analysis side can respond by posting the results to the requesting side. Since the result set may be large you may find it necessary to chunk as per the HTTP 1.1 specification.

You will find the following reference very useful in understanding how the HTTP protocol works:

<http://www.jmarshall.com/easy/http/>

¹ I believe these already exist in one of the standard Java Packages