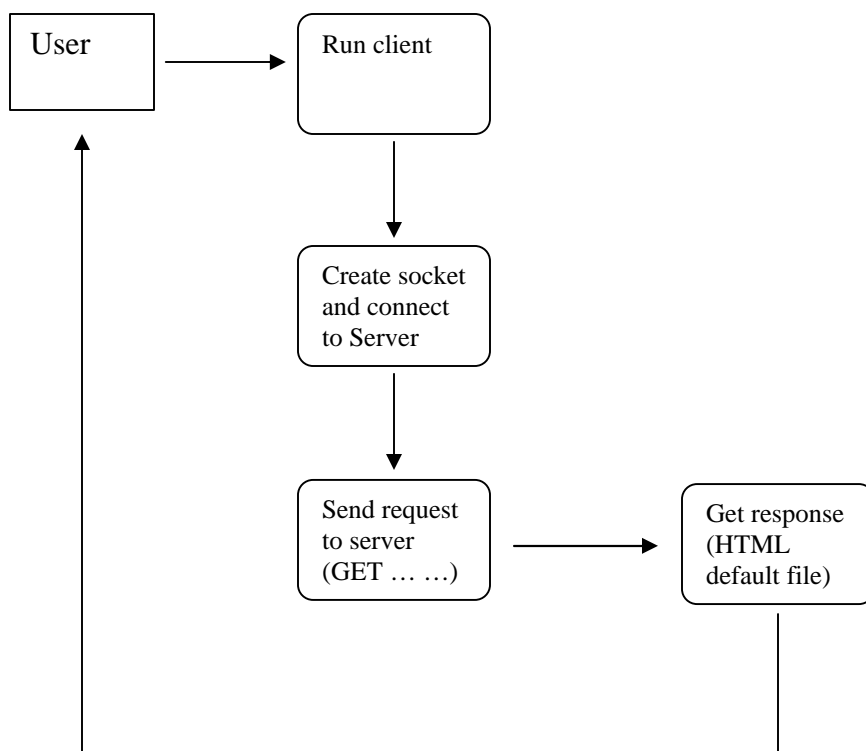## Summary

Based on what we've learnt so far about the HTTP protocol, how http clients communicate with the server and vice versa, the purpose of this project is to create a simple HTTP client to connect to a server. The client receives a URL as an input from the command line and connects to the specified host. Once connected, the client sends a request to the server using the GET method. The server then sends a response to the client, which outputs the response to the screen. In this case, the response is the default html file for the particular root directory.

Design

In order to design the program, the steps involved in the process are determined. Below is an outline of the necessary steps:

Step 1.   Create a socket

Step 2.   Connect to the server

Step 3.   Send data to the server

Step 4.   Get response from server

Step 5.   Output response to screen.

Implementation

To implement this program, a class called **WebClient** is created. Within this class, there are two member variables, namely, host and path, both of String data type. The member functions for the class are:

- *WebClient* – constructor. Takes a URL as a parameter

- *SetHostPath* - sets the host and path member variables

- *CheckProtocol* – checks if the http:// is present in the URL. Returns a boolean value.

- *parseHostname* – if the http:// is present, removes it and returns the URL minus the protocol. Returns a string.

- *runClient* – does the major work i.e connection, output and input of the data streams

The constructor *WebClient* takes the input URL from the user as a parameter. It calls the member functions *SetHostPath* and *parseHostname*. The *runClient* function does most of the work. This is where the socket is created, the input and output streams declared, the requests sent to the server and the response from server received.

An outline of the program is attached.

Usage

To use the program, you type the following command at the prompt:
> **$ java WebClient URL**

The URL may be of the form:
1. http://www.somehost.com/

2. http://www.somehost.com

3. www.somehost.com/

4. www.somehost.com

e.g   **$ java WebClient** http://localhost/

The output of the above command follows:

Connected to: localhost
HTTP/1.1 200 OK

Server: Microsoft-IIS/5.0
Date: Wed, 25 Feb 2004 07:01:49 GMT
Content-Type: text/html
Accept-Ranges: bytes
Last-Modified: Sun, 22 Feb 2004 04:33:31 GMT
ETag: "a0ea956fdf8c31:d69"
Content-Length: 181

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">

<html>
<head>
      <title>Untitled</title>
</head>

<body>

My Homepage!

</body>
</html>

If no URL is provided, the default host is assumed to be *localhost* and the default page for the local web server is returned.