111060005 胡昱煊 lab2

Description:

The lab.c file included is the required file to this lab. It can be compiled by gcc and it does meet all the requirements the lab wants.

This program consists of three parts, converting URL to its IP address, making connection with the designated server then receiving webpage data from it, and extracting hyperlinks from the webpage data.

For the first part, I referred to the “gethostbyname” part in the webpage “Get ip address from hostname in C with Linux sockets” and copied the source code of “hostname\_to\_ip” function.

For the second part, I referred to the “client.c” of “TCP socket example” in the file “Linux Socket Tutorial”.

For the last part, I wrote a function “printHyperlink” that takes in the webpage data, locates the keyword “<a “, and then prints out the hyperlink starting from the string “ href=” ” while counting the number of printed links. After printing all hyperlinks, the function will return the number of hyperlinks.

In this lab, I’ve learned how to create socket, make connection with a server using TCP protocol with C.

The picture below is the screenshot required:

一張含有 文字, 電子產品, 螢幕擷取畫面, 軟體 的圖片

自動產生的描述

Reference:

(1) Get ip address from hostname in C with Linux sockets

<https://www.binarytides.com/hostname-to-ip-address-c-sockets-linux/>

(2) recv 函式 (winsock.h)

<https://learn.microsoft.com/zh-tw/windows/win32/api/winsock/nf-winsock-recv>

(3) C速查手冊

<http://kaiching.org/pydoing/c/c-std-string.html>

(4) TCP Socket Programming 學習筆記

<https://zake7749.github.io/2015/03/17/SocketProgramming/>

(5) Lab2.pdf

(6) Linux Socket Tutorial.pdf