

Assignment 1

240-426

Unix Network Programming

Write programs to

- Given a host name as an argument
 - Count the number of addresses that host has
 - Count how many in each different address family
 - Print the counts
- Pick a port number between 60,000 and 65,000
(try to make sure you pick a different number than that chosen by your colleagues).
 - Write a server process that will accept connections to that port number, and print the IP address port number, and the hostname associated with the IP address, of any client that connects to the server.
 - After printing the values, the connection should be closed (no data transferred).
 - The server should allow any number of clients to connect to it, and should only exit when terminated externally.
 - (Take care to always kill the process before logging out)
- Pick a port number between 50,000 and 55,000
(try to make sure you pick a different number than that chosen by your colleagues).
 - Write a server process that accepts a connection to that port number, and then transmits a copy of some specific file you choose to the client. Choose a printable text file (not binary) - and a short one (you can create this file or use one that already exists on the system)
 - Write a client program that connects to the server, given its host name, and the port number you chose (those two should be arguments to the program), receives the file transmitted by the server, and prints it to standard output.

In all programs, ensure that all error conditions are handled reasonably (that is, ignore no possible errors).

Use the manual pages for the functions and system calls that you will be using to make sure that you get all of the arguments correct. (Do not rely upon examples from lectures).

You can test the client you wrote in the third part by connecting to your own, and your colleagues, servers for both the second and third parts.

Assignment due by end of mid-term exam week (December 26).

Do write beautiful code – nice indentation, consistent style, intelligent use of comments, ...

Send all files via e-mail (in a tar file, or as individual attachments) to *kre@munnari.OZAU* (or *kre@five-dots.coe.psu.ac.th*).

Each student's work is expected to be their own - you can seek help from friends, but not copies of their code, nor ask them to write code for you. That is, you can seek to learn how to do something that is causing you problems - but you must then actually do it yourself.