CPS 472/572: Homework 5 **Dr. Clark**

TCP Applications Programming
Due Monday April 7, 1997

For this homework you will design and write your own file-transfer application using TCP. You will write both the client and server portions of this application.

The client interface will allow users to perform the following operations:

- **Copy a file to the server system. (Required)**
  The user will provide both the name of the local file and the name that the file should be stored under on the server system.
- **Retrieve a file from the server system. (Required)**
  The user will provide both the name on the server and the name that the file should be stored under on the local system.
- **Compare a file on the local system to a file on the server system. (optional for 20 percent extra credit.)**
  The user will provide both the file name on the server and the file name on the local system. The application should compare the two files and indicate whether they are different or the same file.

The actual client user interface design is left up to you. You could do a menu interface, a command line interface, or an interactive command interpreter. However, you must document your application. (See notes section) The server doesn't really have much of a user interface. It should run as a sequential server that is always available to process client requests. No user interaction should be required at the server once the server program is started.

Notes:

1. You are required to use the DNS library routines to make your program more user friendly. Users should be able to enter the host name rather than an IP address when specifying the server system.
2. Watch out for NFS! Remote and local file directories are the same so don't copy a file onto itself.
3. Some functions and system calls to look at: *fopen(), fread(), fwrite(), fclose(), bcmp()*.
4. Make sure you test your program and know that it works. Make sure you deal gracefully with errors. I will run your program when I grade it.
5. To submit your program you must do two things.
   (a) Print the following and hand them in:
   - Your *well documented* source code
   - A "man page" describing your application and how to use it.

   (b) Run the submit program to turn in your files.
   /home/rjc/pub/cps472/submit directoryname