**Spring 2018, Programming Project**

**Simulation of Fast Ethernet**

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To perform the communication between the client and server, the ip addresses are specified when running the client program(sp executables). The interaction between client and server is done by sending a message. The client uses a port number greater than 1024 as the server port number. Simulation of Fast Ethernet with multiple client and one server and moreover, implementation was successful. The basic requirement is that the client and server programs should be run on different machines or terminals. Since I am simulating the project with one client and server, I was able implement the communication process between Server and Client. All the Interposes communication has been achieved by including the header file sys/socket.h.

**Server: Header Files**

iostream, fstream, netinet/in.h, arpa/inet.h, unistd.h, strings.h, errno.h, stdio.h, stdlib.h, sys/types.h, sys/socket.h, The LISTENQ is defined to be 3 in this project. The functions send() and recv() are used to read the requests sent by the client and the send() is used to send the replies. Out echo function is used to display the output to the user at the terminal. In the main, the predefined functions socket, bind and listen are used to initiate the connection process in order to perform socket communication.

**Client: Header Files**

iostream, errno.h, stdio.h, stdlib.h, sys/types.h, sys/socket.h, netinet/in.h, arpa/ inet.h, unistd.h, strings.h. The MAXLINE is set to 4096 and the server port greater than 1024 is used. Socket and Poll functions are also used in the program. The Socket function is used to create the socket. The functions Accept, Bind and Connect are used to initiate the connection sequence. Listen function is used to read the reply from the server.

Ouput:A screenshot of a computer

Description generated with very high confidence

A close up of a computer

Description generated with high confidence