Assignment 3: A Better Open

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#define PORT_NO = 32800

In this assignment, we completed the base program and the extension A part.

libnetfiles.c

This is the client-side of the project. It sends messages to the server side of the project, netfileserver.c. The message includes, which function it sends from, what it needs (for example, as for NET_READ, it need the server to check if this file descriptor can read or not, then if it can, it needs the server to send back the buffer of what it reads from the file that corresponding to the file descriptor, and the number of bytes it actually reads).

netfileserver.c

This is the server-side of the project. It receives messages from the client side of the project, libnetfiles.c. Through reading the message (buffer), it will know where the message sent from (NET_OPEN, NET_READ, NET_WRITE, NET_CLOSE, or NET_SERVERINIT). And according to the home of the message, it will check if it can approve the client's request and it will send back the result and some inputs that the client needs.

We use pthread_create to create a thread that reads the hostname and the file, and then uses the socket to read or write a particular file if it is found. It returns the required errors if there is no file, or if there is an error opening the file because of permissions. The thread locks the read during TRANSACTION or EXCLUSIVE mode.