README file

Names and Netids

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(This is a solo project because team members were not found due to late registration)

Client-Side Implementation

For the recursive client-side functionality, there is a single function within the client.py file called client(). This function is used to query RS and TS servers for IP addresses of hostnames. The client function() first reads through the hostnames in the "PROJI-HNS.txt" file and stores them in an array. Then, it goes through the array and performs the following operations for each hostname. Using the parameters given in the command line, it creates a socket and establishes a connection with the RS server, querying it for an IP address that corresponds to the hostname. The socket connecting the client to RS is then closed. Based on the data the client receives, it either queries the TS server, to get the appropriate response, or continues forward. The final outcome of the IP address search is then written to a file titled "RESOLVED.txt".

Current Issues in Code

There are no known issues or functions that are not working correctly in the code. However, there may be an issue if both RS.py and TS.py are run on different machines, because then RS would not know what the IP address or hostname of TS's machine is. If client.py is run on one computer, and RS.py and TS.py are both run on a second computer, everything should be alright.

Problems Encountered

During the development of code for this project, one of the biggest issues I faced was the time-constraint, for I did not have a partner. It was also challenging for me to figure out how to set up the TS portion of the code, for I initially did not understand how the RS file would get the IP address of the TS. My implementation therefore works if RS.py and TS.py run on the same computer.

Knowledge Gained

I learned a lot throughout this project, because I have no prior experience with socket programming, so I not only learned about how sockets worked, but how to create real-life

implementations of them. I also got a better understanding of the way TCP connections work, and the distinction between persistent and nonpersistent connections, and the use cases of each. In my project I used non-persistent connections on the client side, because I had to connect to multiple sockets for each given hostname.