NAME

client - a client that connects to and sends transactions to a server specified by its ip address and port number.

SYNOPSIS

client [port] [ip_address]

DESCRIPTION

client is the producer of the client-server application that produces transactions that are sent to the server for processing.

The client takes input from stdin, that is either through user input in the terminal or through an input file. The client will terminate once end-of-file (EOF) is reached. This can occur when the end of the input file is reached or when the user presses the ctrl+d command on the terminal.

The client can only perform two actions:

1. **T<n>** - Transaction. The parameter is an integer > 0. This command will be sent to the server for processing. The client sits idle waiting for the server to complete the transaction.

2. **S<n>** - Sleep. This command simulates having the client wait between receiving new transactions to process. The client waits for a time determined by integer parameter n, with n between 0 and 100.

Messages sent from the client to the server must be in the following format:
```
machinename.pid \ t T<n> \ t
```
Where **machinename** is the name of the client sending the message, **pid** is the process id of the client that acts as a unique identifier, **T<n>** is the transaction with n being the input to the transaction, and **\ t** is the delimiter.

The client runs as follows:
1. Creates a socket and connects to the server
2. Sends all T<n> transactions to the server and waits for Done receipt
3. Sleep on S<n> commands
4. Logs all activity into 'machinename.pid.log'
5. When EOF is reached, closes connection to server and terminates

NOTES

The client will terminate if a connection to the server can not be established

If no <port> is provided, then the client falls back to port 8888

If no <ip_address> is provided, then the client falls back to ip address of 127.0.0.1

EXAMPLES

./client*8000***129.128.29.41**

Start a client that that connects to a server on port 8000 and ip address of 129.128.29.41

./client*8000***129.128.29.41**<*client.in*

Starts a client that reads in commands from 'client.in' file

OPTIONS
    <port>   The port number that the server listens to for communications from clients. The port must be in the range 5,000 to 64,000

    <ip_address>
        The IP (Internet Protocol) address of the machine that is hosting the server which the client wants to connect to

    <inputfile
        The file that the client should read the commands from. This is an optional argument

FILES
client.cpp

main.h

tands.cpp

utils.cpp

DIAGNOSTICS
The activity performed by this client is logged in the 'machinename.pid.log' file

COPYRIGHT
Copyright 2021 Weichen Qiu. All rights reserved

CREDITS
https://www.binarytides.com/server-client-example-c-sockets-linux/
https://www.geeksforgeeks.org/socket-programming-in-cc-handling-multiple-clients-on-server-without-multi-threading/