HACETTEPE UNIVERSITY COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

Name/ID	:Baturalp Furkan Karamus/21527137
Course	:BBM 203: Software Laboratory I
Subject	:Stack, Queue, and Dynamic Memory Allocation
Language	:C
Due Date	:25/11/2018 - 23:59
Advisors	:Merve ÖZDEŞ, Pelin CANBAY, Selim YILMAZ

Software Using Documentation:

Software Usage

This program has many several functions. There are main class for execute.After main function run assigning arguments and calling functions.Program use files as input.Program take 6 arguments.These are clients.dat, routing.dat, commands.dat,maximum message size,incoming port and outgoing port.Program printing output on the console.

Error Messages

There is no error message for this program.

Software Design Notes:

Problem

The main problem is communicate two client with crypto message.Secondary problems are:

1. The program must communicate each client with each other.

2.Program should do it with stacks and queues.

3.Program should count how many client used for

transportation.

4.Program must transport message with partial way.

5.Program must print information about wanted queues

and clients.

Algorithm

1.Program start at Main function.

2.Assign every arguments to string and store them.

3.Call readClient function for reading clients.dat.

4.Call readRouting function and initilaze every client’s route array.

5.Call readCommands function and do what suppose to do about given command.

6.For MESSAGE command seperate message depends on given maximum size of frame messageChunk and create stacks in queues.

7.For SHOW_FRAME_INFO command print wanted frame’s informantions.

8.For SHOW_Q_INFO command print wanted queue in or out informations which mean numbers.

9.For SEND command forward message through the receiver client and do it this operation client by client.

10.For PRİNT_LOG command print wanted client’s informations.

Functions:

1. **readClient:** read client information from clients.dat, assign client variables and store these clients in client type dynamic array.

2. **readRouting**: read route information from routing.dat, assign every client's target and destination array.This function design which client neighbour other.

3. **startsWith**: this function takes two arguments and compare for one of them starts with other.

4.**containNumber:** This function check for given string contain any number value.

5.**findClient:**This function returns index integer for given character compare clients's names.

6.**findDestination:**This function returns index integer for given two objects sender and receiver which must gone to.

7.And there is some **push(),pop(),stackCreator**(),**is_stack_full()** methods for basic stack functions.

8.**Enqueue(),Dequeue(),queueCreator(),is_queue_full()** methods for basic queue functions.

References

[1]www.stackoverflow.com

[2]https://www.tutorialspoint.com/data_structures_algorithms/stack_algorithm.htm

[3]https://www.tutorialspoint.com/data_structures_algorithms/dsa_queue.htm