HACETTEPE UNIVERSITY
DEPARTMENT OF COMPUTER ENGENEERING

BBM203 – SOFTWARE LABORATORY 1

ASSIGNMENT – 1

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Stack

Inputs and outputs are single sided. LIFO is a system that operates with consistency. Stack have four function in this code. This functions are pop(), push(), isfull(), isempty().

pop(int*, char*) : delete last element in the stack

push(char, int*, char**, int) : add an element iin the stack

isfull(int, int) : if the stack is full then return 1

isempty(int) : if the stack is empty then return false

Queue

Queue's logic is FIFO. Thhis code have four functions. This functions are IsFull(), IsEmpty(), Dequeue(), Enqueue().

IsFull(int, int) : if the queue is full then return 1

IsEmpty(int*, int*, int) : if the queue is empty then return 1

Dequeue(char*, int*, int*, int*, int) : add element in queue at the last

Enqueue(char, char**, int*, int*, int*, int) : delete element in queue at the top

Algorithm

First of all the first input file is opened and the first line is read in the main function. And then this line is given us information about number of client and server. Client number is an offset of the number in this line. Hence array is used for the keeping clients. After this, the readFile1() function is called to read the other lines in the first input file.

There are stack and queue sizes of the client and server in the system to be used in the first input file. Last line in the first input file is given size of server's stack and server's queue. In the readFile1() function is opened field for stack and queue. After this operations, first input file is closed. Then second file is looked with readFile2() function.

This function is read the second input file. The first of the second input file tells you how many commands are in this file. There are three characters on esch line outside the first line in this file. First character is command. This commands are A, I, S, O.

A is used for the adding element in the client's queue. The second character is shown which client. And the third character indicates which element to add.

I is used for adding an element in the client's or server's stack. The second character is shown stack or which client.. And the last character indicates which element to add.

S is used for adding an element from client to the server's queue. The second character is shown from which client. The last character is 'G' that invalid character. Because G is a value that can vary according to the processes in the system.

The last command is O and it is used for the operating the stack and queue of the server. The second and third character are G taht invalid character.

The last function is writeFile(). This function is used for writing the system's outputs in output files.

Sample Input - Output

5 2 1 4 2 2 2 1 2 1 2	20 A 3 l I 3 q S 3 G A 4 s A 2 p S 3 G S 3 G A 1 x O G G A 3 m S 4 G I 4 x A 1 x S 3 G S 2 G O G G O G G A 4 l A 2 o I 1 g	p q l 3 m s 1 q 1 1 s 3
Input1.txt	Input2.txt	Output.txt