MESSAGE QUEUE

Implement a client-server system using message queues. In this system, we have a set of clients which send strings to the (single) server and the task of the server is to receive the string, change the case of the received string, and retransmit the string back to the right client (from the client it received the string). We assume that the two processes, client and server, communicate via two message queues "Up" and "Down" (known to all the processes a priori). The client reads a string from the standard input and sends it to the server via the Up queue, then waits for the server's answer on the Down queue. The task of the server is to convert characters from lower case to upper case and vice versa. For example, if the client sends the message *loweR case* via the Up message queue, the server will read the message, convert it, and send *LOWEr CASE* via the Down queue. When the client receives the message from the server, it prints it out. You may assume that the maximum size of any message is 256 bytes. Multiple clients must be able to connect to the Up and Down queues. However, the server must be intelligent enough to distinguish different clients and must send the converted string to the right client. The server should also print the time of receiving each message. Implement the client and server for this problem.

Sample Input-Output

Terminal 1	Terminal 2
$./server &	$./client
$./client	Insert message to send to server: UPPER CASE
Insert message to send to server: messaGe	Processed msg from server: upper case
Msg received at time: Fri Feb 7 12:51:47 IST 2014	$
Processed msg from server: MESSAgE	
$	
Msg received at time: Fri Feb 7 12:52:44 IST 2014	

Submit the file client.c and server.c