



**TECNOLÓGICO  
DE MONTERREY®**

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Final Project Proposal

**BossChatRoom!**

## **BossChatRoom!**

### Problem Description:

A very important field in the IT industry is cyber security. In the chatting field sending and receiving messages have become a problem since many companies don't have strong encryption algorithms, or even if they have good implementations of them, cyber criminals always end up decoding messages being sent by users. As a student, I always need a chatting service between my schoolmates in order to exchange information during class. We always end up using applications like Whatsapp or Facebook where our information is being stored in a server and can get used without our knowledge for many purposes. Also, as students, sometimes we want our privacy and connecting to our social networks makes us appear as connected, which makes other persons send us messages or us getting distracted which end up getting our work interrupted.

### Proposed solution:

In order to solve this problem, I will create a chat room. In this chat room, a server will get created which will be controlled by the person that started it. The server will accept or deny persons that will try to get in. Persons who get inside the chat will get asked for their names, which will be displayed for all persons when they receive a message from that person. For the client-server communication I will use forks since they allow multiple client communication. All information the user types in will be ciphered using the vigenere cypher as the one done in class and all the information will be dynamically allocated. In order to use what we learned in class, I will use some of the example the professor published, for example the client-server communication to start a basic send-receive messages.

### Topics used:

- Inter process communication: Sockets are used for communication between processes in the same or different computers, I will use sockets in order to establish communications between client and server; I will use pipes and forks in order to deal with several clients.
- Pointers: I will use pointers in order to store the name of the users as well for the decisions the person using the server decides to do, for example, deciding who enters or not.
- Dynamic Memory: I will use dynamic memory in this project in order to correctly allocate the resultant information from the cypher in order to avoid leaks in the message encryption or decryption. Also, for correctly allocating the users that enter inside the server.
- Thread: the servers main thread will get created and pass the client request to that thread with its specific ID, the thread will get processed with the client request, it will make the cypher it will make the encryption using the vigenere cypher and send it back to the client who will decrypt the message using a similar thread but for decryption.