SuperChat System Description

Rev – 1/28/2017

DESCRIPTION

SuperChat is a ncurses based chat program for linux systems with a decentralized, peer-to-peer architecture.

Messages are entered by a user by inputting text, terminated with a Carriage Return. The length of each line is limited to 144 characters.

The selected 'chat room' is the destination for the input text. All users in the same selected 'chat room' will receive the data.

A user needs to know all of the other users that are currently online and which 'chat room' they are currently engaged with. Users will stay on the list forever (speaking of the SuperChat network existence), but will be shown to be offline.

There is no effective limit on the number of users that can be supported.

Function keys are an encouraged way of interacting with the SuperChat program.

There is a default chat room called 'public'. It cannot be deleted.

There is a limit to the number of chat rooms. Each can be given a name by any participant.

If no one is in a chat room for a while, then it's name is blanked out. This is an indicator that the room is available.

Every user has a 'nick' or a name that is used in SuperChat. The first time the program is ran the user is asked for the 'nick', subsequent invocations will use this 'nick' by default. You can change your 'nick' at any time. The 'nick' has to be unique across the system, but the 'nick' that is displayed to the user does not.

Along with the 'nick', some additional information about the user is stored. This information needs to be displayable by others on the network on demand. This data needs to be a free text field with a constrained length. There is also a 'uuid' that is generated when the user information is first entered.

Interoperability between different variations of SuperChat is enabled by using OpenSplice Pub/Sub middleware. The IDL used and QOS settings must be identical to allow interoperability.

A specific variant of SuperChat can talk to another version of itself, or to a different version of SuperChat.

SuperChat must be a good citizen, and not leak memory or monopolize the processors it is ran upon.

SuperChat needs to be responsive, a new user comes on line and everyone else needs to be aware of the new user in a short amount of time. Likewise when someone goes off line, it needs to be known in a short amount of time.

INTERFACES

* ChatRoom

Unique for each chat room. Published when a chat room is renamed. Has durability.

* UserInfo

Unique for each user. Sent out once every 15 seconds

* ChatData

Unique for each line of text transmitted. Sent out on demand

NOTE: The contents of these structures will be controlled by the instructor and revised as the semester progresses. The master will be available on Blackboard at all times. At the earliest possible time, any updates to these structures must be proposed to the instructor so they can be discussed (and approved) in the class. It is essential that every group be up to date with these discussions and always merge these changes into the product under development.