Comm audio pseudocode

# Server

## Initalize GUI

Set up GUI using QT Framework

## Initialize socket:

Create TCP socket

Bind socket

While true:

Receive client's IP

Go to **Update list of clients**

Go to **Create client connection thread**

## Update list of clients

Add client information to list

## Create client connection thread

Go to **Join multicast group**

## Join multicast group

Create UDP socket

Bind socket

Join socket to multicast group

Go to **Send socket list**

## Send song list

For each song in multicast group:

Send title

Go to **Wait for instructions from client**

## Wait for instructions from client

While true:

If got "song" type request:

Go to **Song transmission thread**

If got "voice" type request:

Go to **Create VOIP thread**

## Song transmission thread

Create thread

Go to **wait for song request**

## Wait for song request

Wait for instruction from client

If there is an instruction (song request)

Go to **Send Song**

## Send song

Open song file

While not end of file:

Add data to buffer

Send buffer to multicast group

Go to **Wait for Song Request**

## VOIP thread

Create thread

Create UDP socket (dedicated to voice)

Go to **Wait for Data**

## Wait for data

While true:

If there is voice data

Go to **Send Voice Data**

## Send voice data

Packetize

Send to multicast group

# Client

## Initialize GUI

Set up GUI using QT Framework

Go to **Wait for IP & Host Info**

## Wait for IP & host info

If valid IP and host entered

Go to **Initialize TCP Socket**

## Initialize TCP socket

Create socket

Go to **Bind**

## Bind

bind()

Go to **Create data receiving thread**

connect()

Go to **Update song list**

## Create data and receiving thread

Create ring buffer

While true:

If received server data

Push data to ring buffer head

Increment head index

## Playing thread

Check buffer

If buffer has data

Play audio

Pop data off ring buffer tail

Increment tail index

## Update song list

Receive data

Update GUI to display song list

Go to **Wait for User Input**

## Wait for user input

If song requested

Add song identifier to buffer

Send buffer through socket