CMPT 300 Assignment 3 IPC and Concurrency

# Purpose

To create a simple "chat"-like facility that enables someone at one terminal (or Xterm) to communicate with someone at another terminal.

general format for the program call is:

*s-talk [my port number] [remote machine name] [remote port number]*

Required threads (in each of the processes):

* One of the threads does nothing other than await input from the keyboard.
* The other thread does nothing other than await a UDP datagram.
* There will also be a thread which prints characters to the screen.
* Finally, a thread which sends data to the remote UNIX process over the network using UDP.

All four threads will share access to a list ADT (the one you wrote for assignment #1).

* The keyboard input thread, on receipt of input, adds the input to the list of messages that need to be sent to the remote s-talk client.
* The UDP output thread will take each message off this list and send it over the network to the remote client.
* The UDP input thread, on receipt of input from the remote s-talk client, will put the message onto the list of messages that need to be printed to the local screen.
* The screen output thread will take each message off this list and output it to the screen

# Design

Abstract design layout diagram.

“Print Thread”

-Prints the data from the “incoming” list.

“UDP IN Thread”

-Receives data from UDP port and puts it on the “incoming” list.

“UDP OUT Thread”

-Sends data from “outgoing” list over UDP port.

“Keyboard Thread”

-Puts keyboard input into the “outgoing” list

s-talk