# CSCI 367 - Computer Networks I

# Assignment 08 – UDP Transport Layer

# Client-Server – Chat Server

# Program Specification

Create a UDP client-server application that uses TCP/IP and the Sockets API.

**Chat Client Registrations**

A Chat client sends Chat registrations to a Chat server. The enables the registering Chat client to receive messages from other Chat clients.

* The Chat server listens for Chat client registration connections. A Chat client connects and sends the Chat server a Chat registration request. The Chat registration request includes:
  + The Chat client’s IP address.
  + The Chat client’s CHAT port.
  + The Chat client’s user id.
* The Chat server records the Chat client’s IP address, CHAT port and user id in a Chat registration list.
* The Chat registration list is an array of type *struct chat\_registration*.

**Chat Client Message**

A Chat client sends a message to a Chat server. The Chat server forwards the Chat message to the intended recipient.

* A Chat client sends a message with two fields to the Chat server:
  + The Chat client recipient’s user id.
  + The Chat message.
* The Chat server relays the Chat message to the intended Chat client recipient.

# Program Execution

Compile your source code files.

* If your source code has no syntax errors, an executable file is produced.
* Execute the program and check the accuracy of the program outputs.
* Below is a sample run showing the server and client output, along with the ASCII text file content.

Chat Client 1

Graphical user interface, text, application, email

Description automatically generated

Chat Client 2

Graphical user interface, text, application, email

Description automatically generated

Chat Server

Graphical user interface, text, application

Description automatically generated

# File Header

At the top of the source code files, add the following file header:

 /\*

# Name:

# Description:

# Date:

# Specification:

\*/

# Submission

1. Upload your source code and header ﬁles to Canvas.
2. For this lab, Canvas has been conﬁgured to permit only files that end with the .c and .h file extensions.