ASSIGNMENT 1 (03-60-512)

**Application Overview**

The application is designed to handle peer-to-peer communication using causal ordering. During development, it was assumed that network communication tests were reliable, no fault tolerance was needed, and no process was permitted to join or leave the established communication session.

The main thread generates and acts as different processes (P0, P1, P2).These processes will take part in the communication system, acting as each respective client in the P2P discussion. The main threads works on vector clock, sender and the GUI, which is used to display the received messages to the user. Each process has two threads: The first one acts as the listener thread, which is used to listen to connection, if anyone wants to connect to it, it get connected. The second thread is the receiver thread—which is used to receive oncoming messages. With each process possessing its own set of threads, the simplest scenario of two users communicating will have exactly six threads co-operating in unison.

A holder queue is attached to the receiver where the messages get delivered and it retrieves the message from it when the receiver wakes up from its sleep period. There is also a vector clock attached to the sender of each process. Every time, upon sending a message, the vector clock of the sender gets incremented by one.