

# Chatroom

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## 1 Introduction

For the programming project for Distributed System, we are going to implement a Chatroom using advanced principles of distributed system development. Participants will be able to join the group conversation and send as well as receive messages from the other participants. The first Person to create the Chatroom is the leader and all the other people can join and communicate with each other.

## 2 Project Requirements Analysis

### 2.1 Dynamic discovery of hosts

New host broadcasts a message asking to join the chatroom. They get a unique ID and are added to the conversation.

### 2.2 Crash fault tolerance

Neighboring hosts keep track of the state of each other through heartbeats to make sure they are available.

### 2.3 Voting

A group leader is elected at the start. If the leader crashes or leaves the conversation the others vote a new leader.

### 2.4 Ordered reliable multicast

Implementation of ordered messages to be defined so that every participant can speak their opinion.

### 3 Architecture diagram

