

Chat Server Programming Assignment

Introduction

You have to write a program based on provided requirements. You are free to use a programming language of your choice, preferably Java. Please state all assumptions when implementing a solution. It is important to deliver elegant object oriented code, apply design patterns and consider performance of the implementation. In addition, please provide JUnit test cases and comments for the implemented classes. Your delivered program should compile (provide all required jars) and run.

Chat Server

Develop a TCP/IP based multi-party chat server and client. Application should include appropriate unit test, error logging, and design documentation.

Server Requirements:

- Server should accept 1 to 10 simultaneous client connections
- A message received from any client should be echoed to all clients by default
- The server should log all client connect and disconnect events
- The listening IP and port address should be configurable

Client Requirements:

- The server IP and port address should be configurable
- The client should attempt to connect to the server and gracefully handle connection failures and disconnect events
- At start-up, the client should ask the user to provide a unique username
- The client should allow the user to enter an alpha-numeric text message
- Entered text messages should be transmitted to the server
- The client should display received text messages
- The client should be able to filter messages by user
- (Optional) The client should be able to send a message to a selected user