



Multi-threaded Networking Code

CSCI 201

Principles of Software Development

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Outline

- Multi-threaded Networking
- Program

Multi-Threading with Networking



- Multi-threading is usually necessary with networking since there are two things that often are done at the same time
 - › The ability to send data
 - › The ability to receive data
- If sending and receiving are not performed in series, multi-threading will be needed
 - › Some applications may be synchronous and only need one program to send data then wait for a response – that would *not* require multi-threading





Outline

- Multi-threaded Networking
- Program

Program



- Write a multi-threaded chat program that allows multiple clients to communicate with each other in an asynchronous manner. The clients should communicate with a server program. The ChatServer program should receive messages from all clients and broadcast them to the other clients, like a chat room.

```
C:>java ChatServer 6789
Connection from /192.168.1.101
Connection from /192.168.1.102
192.168.1.101: Hello
192.168.1.101: How are you?
192.168.1.102: Fine, and you?
192.168.1.101: Good, thanks.
```

```
C:>java ChatClient localhost 6789
Me: Hello
Me: How are you?
192.168.1.102: Fine, and you?
Me: Good, thanks.
```

```
C:>java ChatClient localhost 6789
192.168.1.101: Hello
192.168.1.101: How are you?
Me: Fine, and you?
192.168.1.101: Good, thanks.
```