

CMSC433, Spring 2001 Programming Language Technology and Paradigms RMI Chat Client Round 2

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Project 5

- More robust version of Chat client
- Use discovery mechanism for bootstrapping
 - every client runs an RMI registry, and announces its presence by multicasting a URL for itself, so other clients can find it
 - all clients listen on that multicast port
 - also can specify a set of known clients on the command line
 - means can't send a message until another client first announces itself or sends you a message (or provided on command line)

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Project 5, cont.

- Clients can discover other clients, and add them to their peers list
 - from a multicast announcement
 - from command line
 - from receiving a message
 - messages now contain a list of all clients that have forwarded this copy of the message (its path)
- Sending a message
 - choose a random set of known peers for each message sent (initiated or forwarded), that the message has not already passed through
 - remove a client from the list of known peers when a send fails (throws an exception)

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Project 5, cont.

- Robustness
 - catch exceptions (esp. Remote and NullPointerException), and deal with them
 - cope with slow clients
 - use threads for message sends
 - only allow limited number of outstanding sends per destination client at any one time

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Project 5, cont.

- User-defined message types
 - all derived from abstract Message class similar to one from project 4
 - implements Runnable, so allows defining own payload
 - Examples
 - ping message type with no data to announce a client to the rest of the world
 - findall message type that asks any client it reaches to do a ping

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Project 5, cont.

- Packages and security
 - your code should be in a package, and the code we give you will also have its own package
 - must allow download of stubs from other clients
 - need to create security manager and configure your .java.policy file properly to only allow limited access for downloaded code, and to allow other clients to download your stub
 - we'll provide more info on this Soon

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