What You’ve Learned in 6.005

think first, then code
- abstracting a real-world problem into a model
  - State machine paradigm: state machine, grammar
  - Symbolic paradigm: datatypes and operations
  - Relational paradigm: object model
- applying design patterns to translate models into code

how to create good software
- easy to understand
- safe from bugs
- ready for change

software engineering literacy
- Java
- MIDI, URL, HTTP, maps, lists, sets, streams, SAT, threads, queues, sockets, client/server, GUI, SQL
- Subversion, Eclipse, JUnit, code coverage, dependence diagrams

What to Do Next

Spring
- 6.813/6.831 User Interface Design & Implementation
- 6.035 Computer Language Engineering

IAP
- 6.370 IAP Programming Competition
- 6.470 IAP Web Programming Competition

Fall
- 6.197 Performance Engineering
PROJECT 3 AWARDS

RUNNER-UP AWARDS
(for Best Use of MIDI Piano Technology)

Group 6 (Maestro)
- Chris Calabrese
- Jennie Cheng
- Andrew Sugaya

Group 9 (Evolve)
- Huan Liu
- Qingchun Ren
- Au Teerapittayanon

PROJECT 3 AWARDS

- Projects and internships in China, France, Germany, India, Israel, Italy, Japan, Mexico, Spain
- No language requirement for India or Israel

mit.edu/misti

MEET

- Teach Israeli and Palestinian high school students
- Accepting applications until February 11th
- Talk to Max for more info!

meet.mit.edu
Group 06
Chris Calabrese (cbreezy)
Jenny Cheng (jencheng)
Andrew Sugaya (asugaya)

Main Interface

Talk
(Or double-click on username)

Invite to Conversation

Usernames and Status

Conversations

Conversation Members

Type Here

Functions/Themes/File Transfer

Functions

Themes

MIDI
Maestro in Action

Huan Liu, Au Teerapittayanon, Qingchun Ren

Features

- IRC style chat room with private 1 on 1 “whisper” channel
- Smileys
- User profile pictures
- MIDI piano sharing

Smileys & User Profile
Whisper Private Channel

MIDI Piano Sharing

Winner, Most Aesthetic UI

**Group 11 (Sermo)**
- Sinchan Banerjee
- Kristie D’Ambrosio
- Itai Turbahn
- Victor Wang

“It’s so easy, there is no step three”
Easily log in and sign up

Control your world with 5 easy icons
Organize your Friends
Stay in the loop
Discover new people
Advertise with Sermo

Chat freely
Create social chat space

Discover new people
Search for your friends
Winner, Best Usability

Group 5 (nocturn)
- Skylar Desa
- Andrew Levine
- Dave Stein

Group Five - nocturn

• Design Iterations
  - Conducted several iterations of user testing
  - Focus on usability

• Notable Features
  - Server state persistence
    - Server manages chat system (logs, user data, buddylists)
    - All server side information is periodically stored to disk
  - Conversation Logging with timestamps
  - Buddylists
  - Passwords
  - Status and Status Messages
  - HTML rendering
  - UI features (from user testing)

Try it now! The server is up, and you can grab an executable client (windows and linux only)
http://stein.mit.edu/chat/

Group Five - nocturn

• Design Iterations

<table>
<thead>
<tr>
<th>User Complaint</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swing is ugly</td>
<td>Reskinned client application</td>
</tr>
<tr>
<td>Windows spawn on top of each other</td>
<td>Windows are placed in unique, predictable locations on the screen.</td>
</tr>
<tr>
<td>Status message hard to find</td>
<td>Status message placed after buddy name in buddylist</td>
</tr>
<tr>
<td>Keyboard focus is lost by the input area after the “send” button is clicked</td>
<td>Keyboard focus is returned to input area.</td>
</tr>
<tr>
<td>It’s hard to tell if a message has been sent to you while offline</td>
<td>When logging on, all missed messages are popped up.</td>
</tr>
<tr>
<td>Some users feel offline buddies clutter view.</td>
<td>“show offline buddies” option. Buddy list sorted by status.</td>
</tr>
</tbody>
</table>

Try it now! The server is up, and you can grab an executable client (windows and linux only)
http://stein.mit.edu/chat/
Group Five - nocturn

Try it now! The server is up, and you can grab an executable client (windows and linux only)

http://stein.mit.edu/chat/

• Server State Persistence
  ➢ Server maintains all user data and conversations.
  ➢ This information is stored to disk several times per minute.
  ➢ Server can be restored to previous state after shutdown.
  ➢ The "dat" file representing the server state can be sent to another computer, allowing for easy migration.

Winner, Best Features

Group 10 (iCheat)
  ➢ Aaron Blankstein
  ➢ Steven Dickerson
  ➢ Caryn Krakauer

iCHEAT
PSET EDITION

Aaron Blankstein
Steven Dickerson
Caryn Krakauer
The Buddy List

- Two options:
  - Create a new chat
  - Join an existing chat

The Chat Window

- One or more users can be in a conversation
- Three extra features:
  - Send an image
  - Send a formula
  - Export as PDF

Send Image

Send Formula

- Sends a formula using LaTeX syntax.
Winner, Best Software Design

Group 1 (Top Hat Messenger)
- Kang Gao
- Pangus Ho
- David Koh

Top Hat Messenger

Highly Modular Design

- Each box represents a separate thread
- Blue boxes made up our client
- Green boxes managed the protocol
- The server (red) had a main thread as well
Application Level MVC

View
Client

requests changes

Controller
Server functions

mutates

Model

Convos or Server

sends message to client:

ServerSender

notifies

ConvolListener

publishes to

Client Level MVC

View
GUI

requests actions

Controller
Client Functions

notifies

ConvolListener

MainFrame

ClientListener

publishes to

Model
Info on Client

publishes to

Server

sends requests to server

sends updates to mutator functions

The Final Result

INTERLUDE
(You had to be there for this)

**6.005 QUIZ GAME**

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**HKN Evaluation**

Please take a few minutes now to fill out the HKN evaluation for 6.005


- note that HKN evaluations close tonight at midnight, so you may want to evaluate all your Course VI classes now