

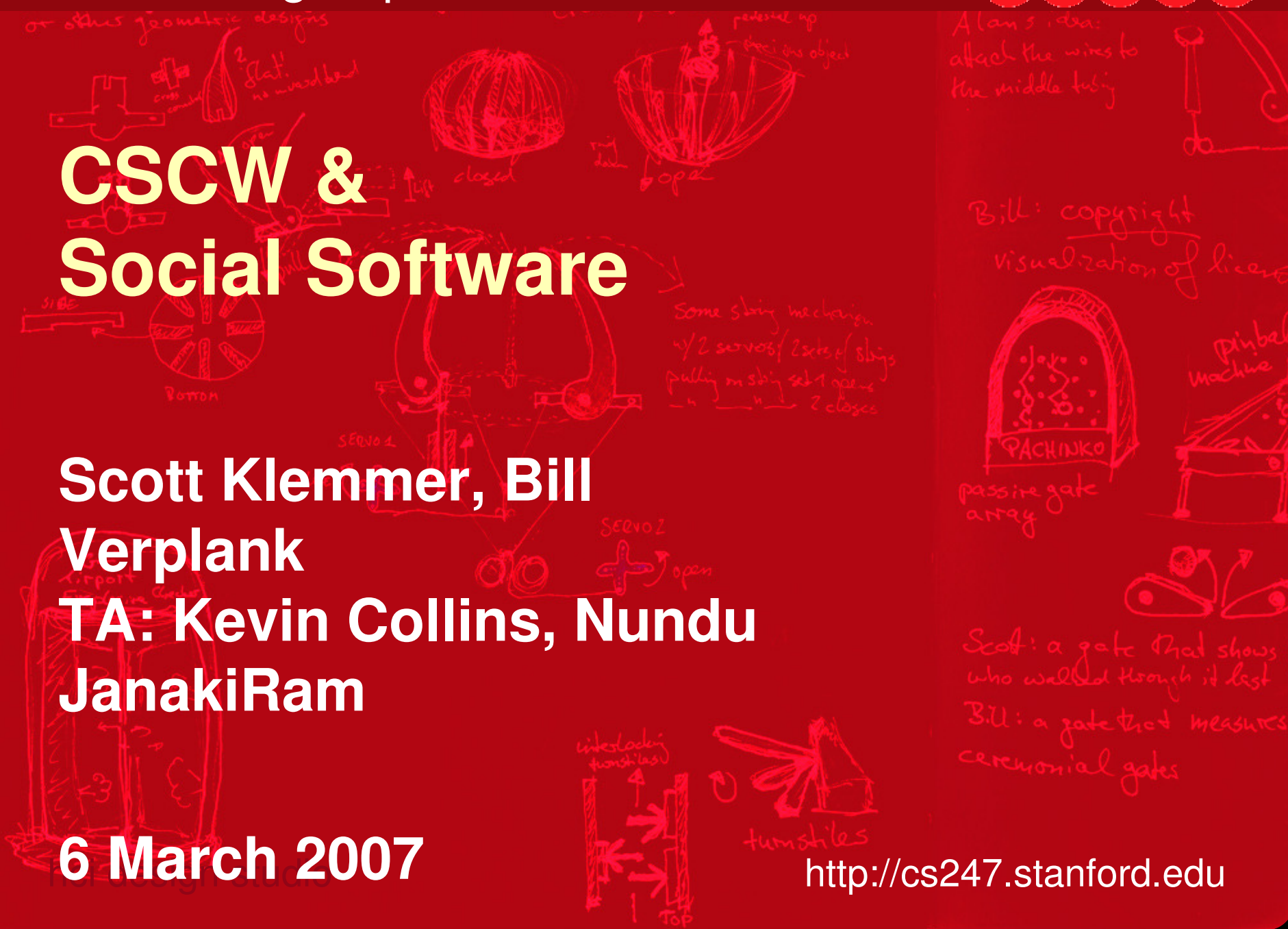


# CSCW & Social Software

Scott Klemmer, Bill Verplank  
TA: Kevin Collins, Nundu JanakiRam

6 March 2007

<http://cs247.stanford.edu>



# Today: Meet together

1:15 – 1:20 Announcements / questions

1:20 – 1:30 P4 Questions and Discussion

1:30– 2:00 CSCW & Social Software

2:00 – 2:05 Split into Sections

2:05 – 3:05 Idealog feedback

the study of how people work together  
using computer technology

# Groupware

- *Groupware* denotes the technology that people use to work together
  - “systems that support groups of people engaged in a common task (or goal) and that provide an interface to a shared environment.”
- *CSCW* studies the use groupware
  - “CSCW is the study of the tools and techniques of groupware as well as their psychological, social, and organizational effects.”

collocated

distributed

synchronous

asynchronous

collocated

distributed

synchronous



*courtesy of marc rettig*

asynchronous

collocated

distributed

synchronous



*The Designers' Outpost*

asynchronous

collocated



distributed



synchronous

asynchronous

S  
Y  
N  
C  
H  
R  
O  
N  
O  
U  
S

collocated



S  
Y  
N  
C  
H  
R  
O  
N  
O  
U  
S

distributed

The screenshot shows a Microsoft Outlook window. The 'Folder List' on the left includes folders like 'Deleted Items (24)', 'Sync Issues (6)', and 'Tasks'. The main pane shows an email titled 'reading response 2' from Kristen Blair [kpliner@stanford.edu]. The email content includes a 'Follow up' section, a 'Beyond Being There' link, and sections for 'Good Points' and 'Critiques'.

**Folder List**

- Deleted Items (24)
- Sync Issues (6)
- Tasks

**reading response 2**  
Kristen Blair [kpliner@stanford.edu]

Follow up  
To: cs376@cs.stanford.edu

Beyond Being There

Good Points

- I thought the point this article brought an important point about not looking to electronic media as trying to make it imitate as much as possible face to face media, but rather looking at what this type of communication can buy you that may solve problems lacking in face to face conversation.
- I also liked their analysis of email being the most successful form of groupware, as evidenced by the fact that people choose to use it even when face to face interaction is available.

Critiques

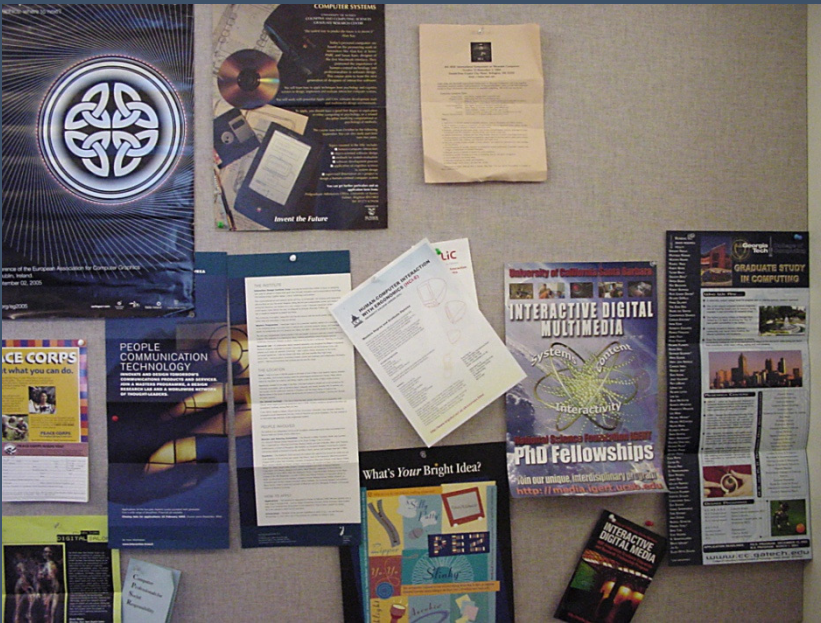
- They claim that electronic media such as videoconferencing that tries to imitate face to face interaction, even when as informationally rich as face to face communication will still be far inferior. How do we know until we try it?
- In their discussion of Semisynchronous discussions, by having people post messages at different times and then show them all in one batch, I think they ignore the benefits of face to face interaction - socially monitoring conversation so it can flow in some direction. I find this a problem in instant messenger, where one person is responding to an old point, while another moved on. It seems to make communication more difficult.

synchronous

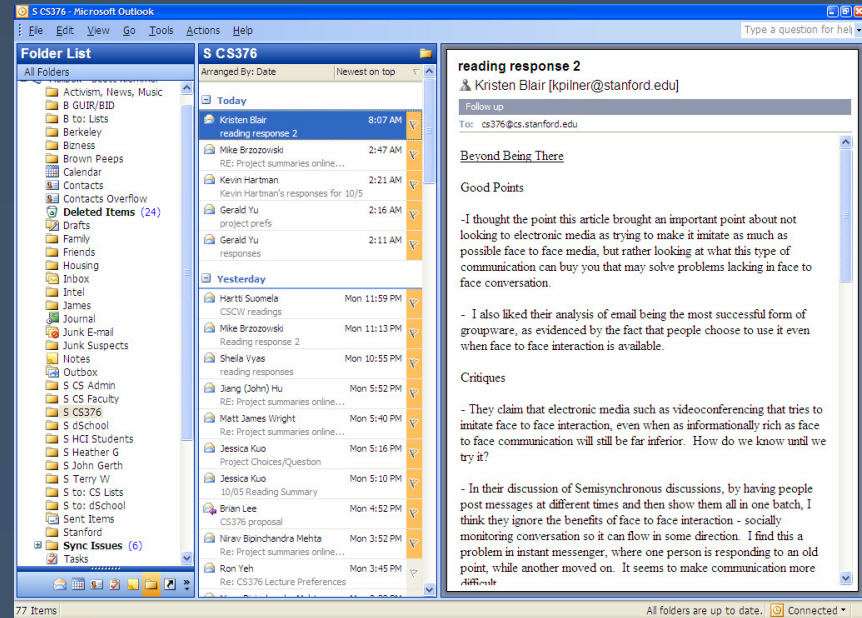
collocated



asynchronous



distributed



S  
Y  
N  
C  
H  
R  
O  
N  
O  
U  
S

collocated



a  
S  
Y  
N  
C  
H  
R  
O  
N  
O  
U  
S



distributed

S CS376 - Microsoft Outlook

Folder List

- Activity, News, Music
- S GUR/BID
- S to: Lists
- Berkeley
- Business
- Brown Peeps
- Calendar
- Contacts
- Contacts Overflow
- Deleted Items (24)
- Drafts
- Family
- Friends
- Housing
- Inbox
- Intel
- James
- Journal
- Junk E-mail
- Junk Suspects
- Notes
- Outbox
- S CS Admin
- S CS Faculty
- S CS376
- S dSchool
- S HCI Students
- S Heather G
- S John Gerth
- S Terry W
- S to: CS Lets
- S to: dSchool
- Sent Items
- Stanford
- Sync Issues (6)
- Tasks

S CS376

Arranged By: Date | Newest on top

Today

- Kristen Blair reading response 2 8:07 AM
- Mike Brozowski 2:47 AM  
RE: Project summaries online...
- Kevin Hartman 2:21 AM  
Kevin Hartman's responses for: 10/5
- Gerald Yu 2:16 AM  
project prefs
- Gerald Yu 2:11 AM  
responses

Yesterday

- Herts Suomela Mon 11:59 PM  
CS376 readings
- Mike Brozowski Mon 11:13 PM  
Reading response 2
- Shella Vyas Mon 10:55 PM  
reading responses
- Jang (John) Hu Mon 5:52 PM  
RE: Project summaries online...
- Matt James Wright Mon 5:40 PM  
Re: Project summaries online...
- Jessica Kuo Mon 5:16 PM  
Project Choices/Question
- Jessica Kuo Mon 5:10 PM  
10/05 Reading Summary
- Brian Lee Mon 4:52 PM  
CS376 proposal
- Nrav Bipindhendra Mehta Mon 3:52 PM  
Re: Project summaries online...
- Ron Yeh Mon 3:45 PM  
Re: CS376 Lecture Preferences

77 Items

reading response 2

Kristen Blair [kpliner@stanford.edu]

Follow up

To: cs376@cs.stanford.edu

Beyond Being There

Good Points

- I thought the point this article brought an important point about not looking to electronic media as trying to make it imitate as much as possible face to face media, but rather looking at what this type of communication can buy you that may solve problems lacking in face to face conversation.
- I also liked their analysis of email being the most successful form of groupware, as evidenced by the fact that people choose to use it even when face to face interaction is available.

Critiques

- They claim that electronic media such as videoconferencing that tries to imitate face to face interaction, even when as informationally rich as face to face communication will still be far inferior. How do we know until we try it?
- In their discussion of Semsynchronous discussions, by having people post messages at different times and then show them all in one batch, I think they ignore the benefits of face to face interaction - socially monitoring conversation so it can flow in some direction. I find this a problem in instant messenger, where one person is responding to an old point, while another moved on. It seems to make communication more difficult.

81 folders are up to date. Connected

collocated



S  
U  
C  
H  
O  
N  
S

distributed



S  
U  
C  
H  
O  
N  
S



S CS376 - Microsoft Outlook

Folder List

S CS376

Today

- Kristen Blair reading response 2 8:07 AM
- Mike Brozowski 2:47 AM
- Kevin Hartman 2:21 AM
- Gerald Yu project prefs 2:16 AM
- Gerald Yu responses 2:11 AM

Yesterday

- Herts Suomela Mon 11:59 PM
- Mike Brozowski Mon 11:13 PM
- Shella Vyas Mon 10:55 PM
- Jang (John) Hu Mon 5:52 PM
- Matt James Wright Mon 5:40 PM
- Jessica Kuo Mon 5:16 PM
- Jessica Kuo Mon 5:10 PM
- Brian Lee Mon 4:52 PM
- Nirav Bipindhendra Mehta Mon 3:52 PM
- Ron Yeh Mon 3:45 PM

reading response 2

Kristen Blair [kpliner@stanford.edu]

Follow up

To: cs376@cs.stanford.edu

Beyond Being There

Good Points

- I thought the point this article brought an important point about not looking to electronic media as trying to make it imitate as much as possible face to face media, but rather looking at what this type of communication can buy you that may solve problems lacking in face to face conversation.
- I also liked their analysis of email being the most successful form of groupware, as evidenced by the fact that people choose to use it even when face to face interaction is available.

Critiques

- They claim that electronic media such as videoconferencing that tries to imitate face to face interaction, even when as informationally rich as face to face communication will still be far inferior. How do we know until we try it?
- In their discussion of Semisynchronous discussions, by having people post messages at different times and then show them all in one batch, I think they ignore the benefits of face to face interaction - socially monitoring conversation so it can flow in some direction. I find this a problem in instant messenger, where one person is responding to an old point, while another moved on. It seems to make communication more difficult.

77 Items

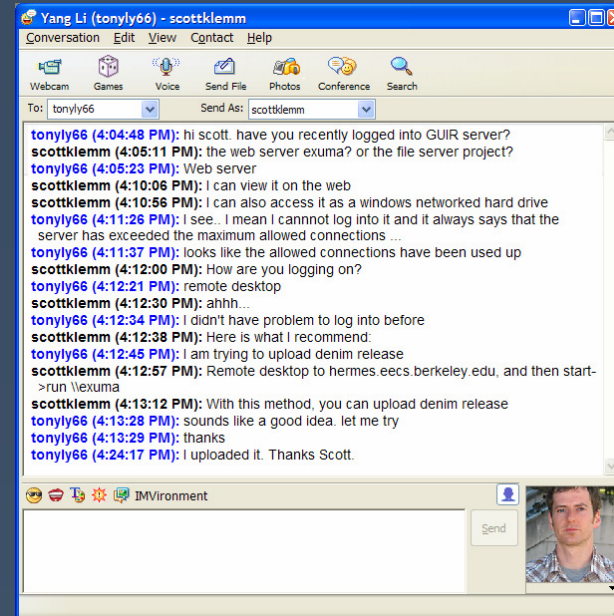
All folders are up to date. Connected

Synchronous

# collocated



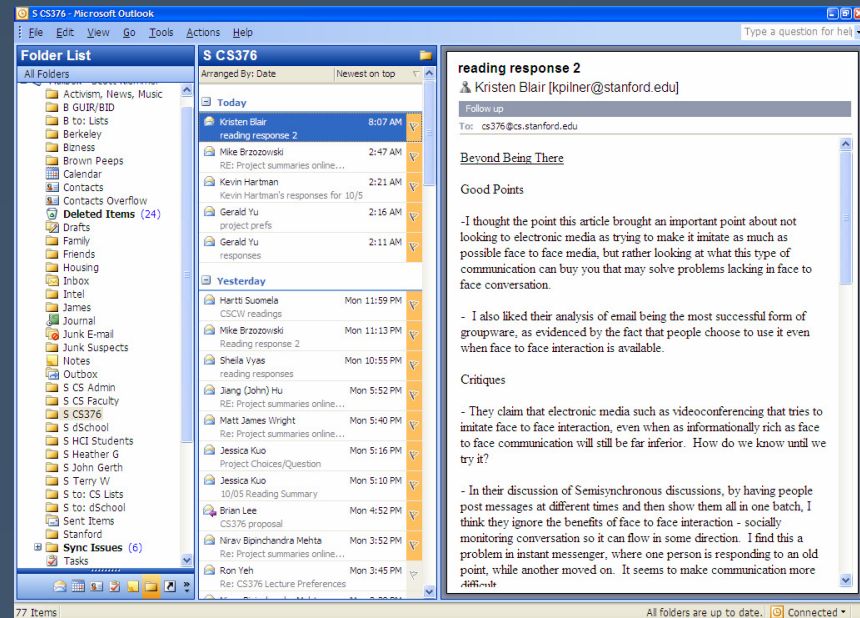
# distributed



Asynchronous



Plasma Poster



S  
Y  
N  
C  
H  
R  
O  
N  
O  
U  
S

collocated

board games  
physical photo sharing

distributed

networked games

A  
S  
Y  
N  
C  
H  
R  
O  
N  
O  
U  
S

project walls  
in/out board  
scavenger hunts  
meeting room schedules

digital photo sharing  
MS Word Collaboration  
voting  
Groupware calendars



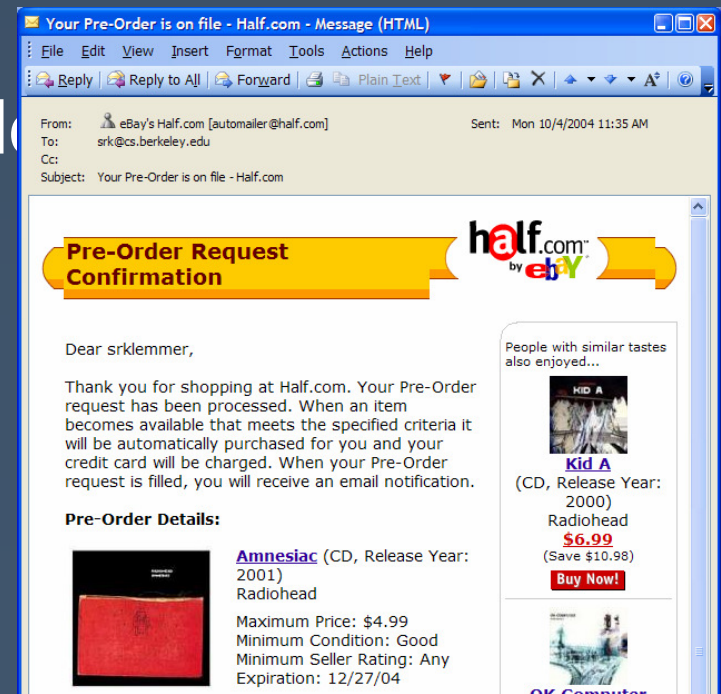
# Knowledge repositories

- AnswerGarden (Ackerman): database of commonly-asked questions that grows automatically.
- User poses question as a text query:
  - System responds with matches from the database.
  - If user isn't satisfied, system attempts to route query to an expert on the topic.
  - Expert receives query, answers it, adds answer to the database.



# Extending email

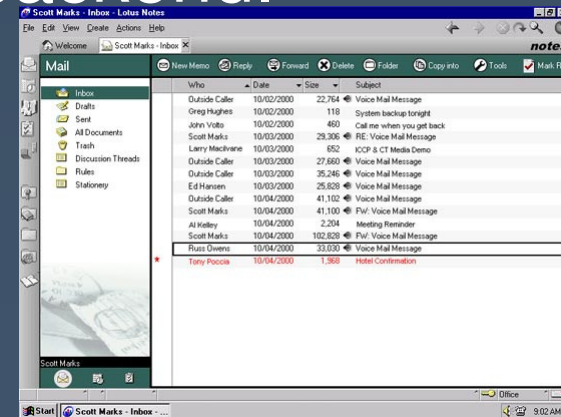
- There is a lot of research on “email++”
  - Automatic organization
  - Task management
  - Other functions: contacts, reminders
- Multimedia email: Can include sound, video, images.
  - Only occasionally useful
  - May be important for developing economies.



# Extensible Groupware: Lotus Notes

- Notes is a product that combines standard office software (email, calendar, contacts etc.) with a scriptable database backend.

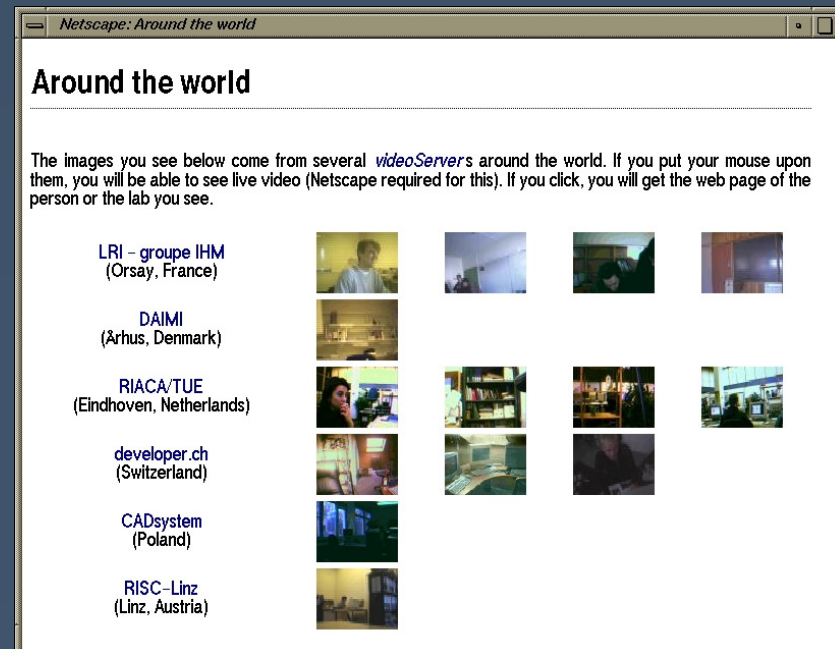
- Easy to create new apps: PERT charts, novel workflow, custom shared authoring...



- “most successful groupware system to date”

# Synchronous Groupware

- Desktop Conferencing (MS Netmeeting)
- Electronic Meeting Rooms (Access Grid)
- Media Spaces (Xerox PARC)
- Instant Messaging



# Video

- Eye contact problems:
  - Offset from camera to screen
  - “Mona Lisa” effect



- Gesture has similar problems: trying pointing at something across a video link.

# Sound

- Good for one-on-one communication



- Bad for meetings. Spatial localization is normally lost. Add to network delays and meeting regulation is very hard.

# Turn-taking, back-channeling

- In a face-to-face meeting, people do a lot of self-management.
- Preparing to speak: lean forward, clear throat, shuffle paper.
- Unfortunately, these are subtle gestures which don't pass well through today's technology.
- Network delays make things much worse.

# Social Issues

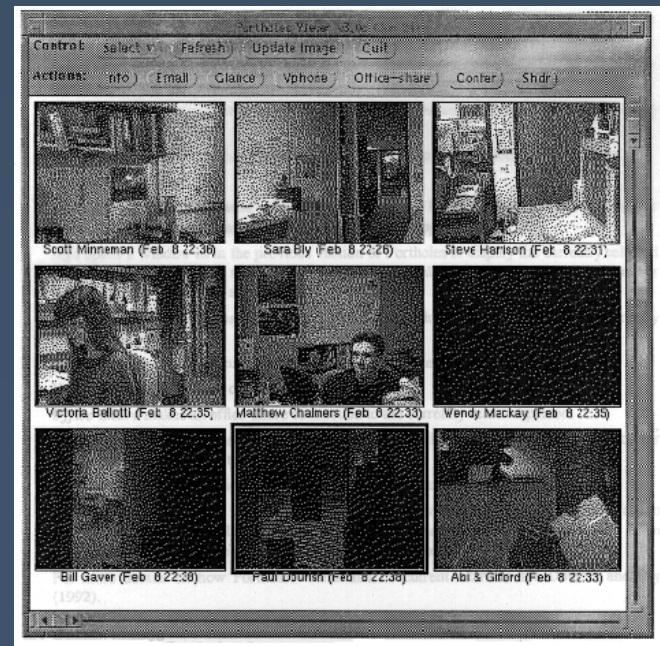
- Can these technologies replace human-human interaction?
  - can you send a “handshake” or a “hug”
  - how does intimacy survive?
- Are too many social cues lost?
  - facial expressions and body language for enthusiasm, disinterest, anger
  - will new cues develop? e.g., :)

# Usage issues

- Our model of tele-communication is episodic, and derives from the economics of the telephone.
- Communication in the real world has both structured and unplanned episodes. Meeting by the Xerox machine.
- Also, much face-to-face communication is really side-by-side, with some artifact as the focus.

# Solutions

- Sharing experiences is very important for mutual understanding in team work (attribution theory).
- So context-based displays (portholes) work well.
- Video shows rooms and hallways, not just people or seats.



# Synchronous Implementation Issues

- $\geq$  Two users working on same data, at the same time, in cooperation
- Extend Model View Controller (MVC)
  - views & copies of the model are distributed
- Propagate command history
  - must resolve conflicts among N histories
  - at what level are commands?
    - mouse position not good enough (e.g., different font sizes, etc.)

# Face-to-Face: the ultimate?

- Kiesler and Sproull findings:
  - Participants talk more freely in email (than F2F).
  - Participation is more equal in email.
  - More proposals for action via email.
  - Reduced effects of status/physical appearance.
- But
  - Longer decision times in email
  - More extreme remarks and flaming in email.





dodgeball.com bringing your phone to life.

Search Venues  go

city: San Francisco

[change](#)

user:

pass:

[login](#)

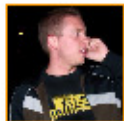
[help](#)

[come on...](#)

[sign up](#)

Suggestions? Bugs? Send them [here](#).

### Cameron's profile



**Cameron W.**

If you were [logged in](#), you could add this person as your friend!

[\[enlarge\]](#)  
[\[report\]](#)

**Cameron says:** "I'm 24, I love SF and spending time with friends. That's why I'm here. I want find out what all YOU people are up to..."

### Cameron's scene (a random sampling)

- :: [House of Shields](#)
- :: [850 Cigar Bar](#)
- :: [The Fillmore](#)
- :: [Patxi's SF](#)
- :: [gallery lounge](#)
- :: [Coffee to the People](#)
- :: [Hemlock Tavern](#)
- :: [Persian Aub Zam Zam](#)
- :: [Annie's Social Club](#)
- :: [111 Minna](#)

### Cameron's recent comments

**Cameron on [Ritual Roasters](#):** (02.06.2006)

Great coffee. Total web 2.0 scene.

**Cameron on [The Buzz Bin](#):** (02.06.2006)

Sweetest rooftop ever!

**Cameron on [Pork Store Cafe Valencia](#):** (12.17.2005)

Super tasty chorizo with fried eggs. A must if you crave a greasy breakfast.

hip hop dance party hipsters hot girls  
jukebox karaoke live music  
ocals makeout booth meg  
models ms pac man nyu pa  
piano bar pick up sp  
te puppet rock opera pitchers p

**dodgeball.com**  
TAGS

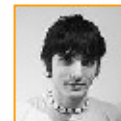
Tags. It's what the cool kids are doing.

[Tell us what we'll find at your favorite hangouts!](#)

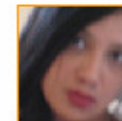
### Cameron's friends



[Andy K.](#)



[Andy S.](#)



[ayvne v.](#)



[Buzz A.](#)



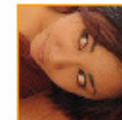
[Carmel A.](#)



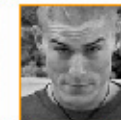
[Chris M.](#)



[Claudine C.](#)



[Courtney P.](#)



[Danny D.](#)



[eddie c.](#)



[Eran G.](#)



[Eris S.](#)



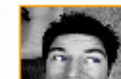
[Glenda B.](#)



[Greg V.](#)



[irina s.](#)



## Hola klemmer!

- ◆ You have [5 new messages](#).
- ◆ Create yourself a [buddy icon!](#)

### Printing? Can it be true?

Well, it's true *if you're in the U.S.*... with more countries coming online soon! Get 10 free prints with your first order! [Click here to set yourself up for printing.](#)

### Flickr News

09 Feb 06 - Ladies and gentlemen, you'll notice a brand, spanking new link down in the footer. It's the Flickr Community Guidelines (applause, please).... [read more news](#)

» [Flickr Blog](#) Great photos & latest news, daily!

#### Do more with your photos!

[DISMISS X](#)



Posters! Books! DVDs!

Now there's even [more you can do](#) with your photos:

- ◆ [PhotoShow](#) DVDs NEW
- ◆ [Qoop](#) Calendars NEW, Posters & Books
- ◆ [Zazzle](#): U.S. postage stamps with your photos
- ◆ [Englaze](#) back-up DVDs and Slideshows

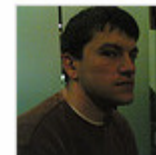
Make your photos happy -- do something with them!

And don't forget to set your [printing preferences](#) so we can let you know when regular prints are available in your area.

Having a wedding, reunion or event?

» [Upload photos](#) (Or, look at our uploading [tools...](#))

» [Your photos](#) ( [Recent activity](#) / [Comments you've made](#) )



» [Photos from your contacts](#)



From [xeeliz](#)



From [xeeliz](#)



From [xeeliz](#)



From [xeeliz](#)

» [Everyone's photos](#) ( [Hide](#) )



From [þjóðkirkjan](#)



From [busso](#)



From [Thai Green Curry](#)



From [km0x29a](#)

» [Your groups](#) ( [See what's new](#) )



WIKIPEDIA  
The Free Encyclopedia

navigation

- Main Page
- Community Portal
- Current events
- Recent changes
- Random article
- Help
- Contact Wikipedia
- Donations

search




toolbox

- What links here
- Related changes
- Upload file
- Special pages
- Printable version
- Permanent link
- Cite this article

in other languages

- Bosanski
- Češky
- Dansk
- Deutsch
- Eesti
- Español
- Français
- ???
- Italiano
- Magyar

- article
- discussion
- edit this page
- history

Sign in / create account

Your continued donations keep Wikipedia running!

# Graphical user interface

From Wikipedia, the free encyclopedia  
(Redirected from GUI)

For other uses, see *Gui* (disambiguation).

A **graphical user interface** (or **GUI**, sometimes pronounced "goeey") is a method of *interacting with a computer* through a *metaphor of direct manipulation* of graphical images and *widgets* in addition to text.

GUIs display visual elements such as icons, windows and other gadgets. The precursor to GUIs was invented by researchers at the *Stanford Research Institute* (led by *Doug Engelbart*) with the development and use of text-based *hyperlinks* manipulated with a *mouse* for the *On-Line System*. The concept of hyperlinks was further refined and extended to graphics by researchers at *Xerox PARC*, who went beyond text-based hyperlinks and used GUIs as the primary interface for the *Xerox Alto computer*. Most modern general-purpose GUIs are derived from this system. For this reason some people call this class of interface a *PARC User Interface* (PUI) (note that PUI is also an acronym for *perceptual user interface*). The PUI consists of graphical widgets (often provided by *widget toolkit* libraries) such as *windows*, *menus*, *radio buttons*, *check boxes* and *icons*, and employs a *pointing device* (such as a mouse, trackball or touchscreen) in addition to a keyboard. Those aspects of PUIs can be emphasized by using the alternative acronym *WIMP*, which stands for *Windows, Icons, Menus and Pointing device*.

The GUI familiar to most of us today is either the Mac or the Windows operating systems and their applications originated at the Xerox Palo Alto Research Laboratory in the late 1970s. Apple used it in their first Macintosh computers. Later, Microsoft reused many of Apple's ideas in their first version of the Windows operating system for IBM-compatible PCs.

Examples of systems that support GUIs are *Mac OS*, *Microsoft Windows*, *NEXTSTEP* and the *X Window System*. The latter is extended with toolkits such as *Motif* (CDE), *Qt* (KDE) and *GTK+* (GNOME).

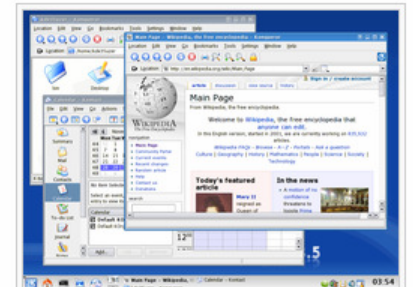
**Contents** [hide]

- Types of GUIs
- GUI vs. CLI
- 3D user interfaces
- See also
- External links

## Types of GUIs

GUIs that are not PUIs are most notably found in *computer games*, and advanced GUIs based on *virtual reality* are now frequently found in research. Many research groups in North America and Europe are currently working on the *Zooming User Interface*, or ZUI, which is a logical advancement on the GUI, blending some 3D movement with 2D or "2 and a half D" vectorial objects.

Some GUIs are designed for the rigorous requirements of *vertical markets*. These are known as "application specific GUIs." One example of such an application specific GUI is the now familiar touchscreen point of sale software found in restaurants worldwide and being introduced into self-service retail checkouts. First pioneered by *Gene Mosher* on the *Atari ST* computer in 1986, the application specific touchscreen GUI has spearheaded a worldwide revolution in the use of computers throughout the food and beverage industry and in general

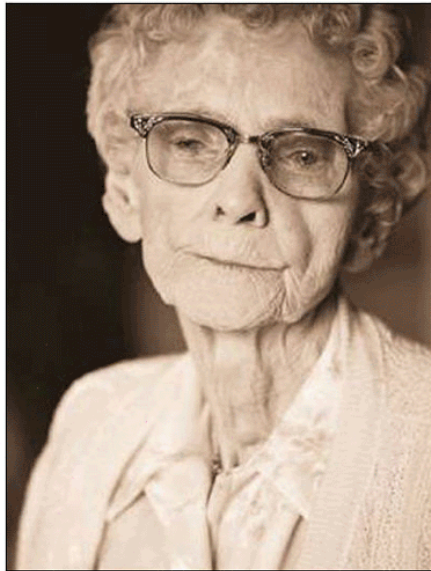


An example of KDE, one of the X Window System's many graphical user interfaces available for Unix-like systems



Friday, August 15, 2003

Today	Yesterday	2 Days Ago
		

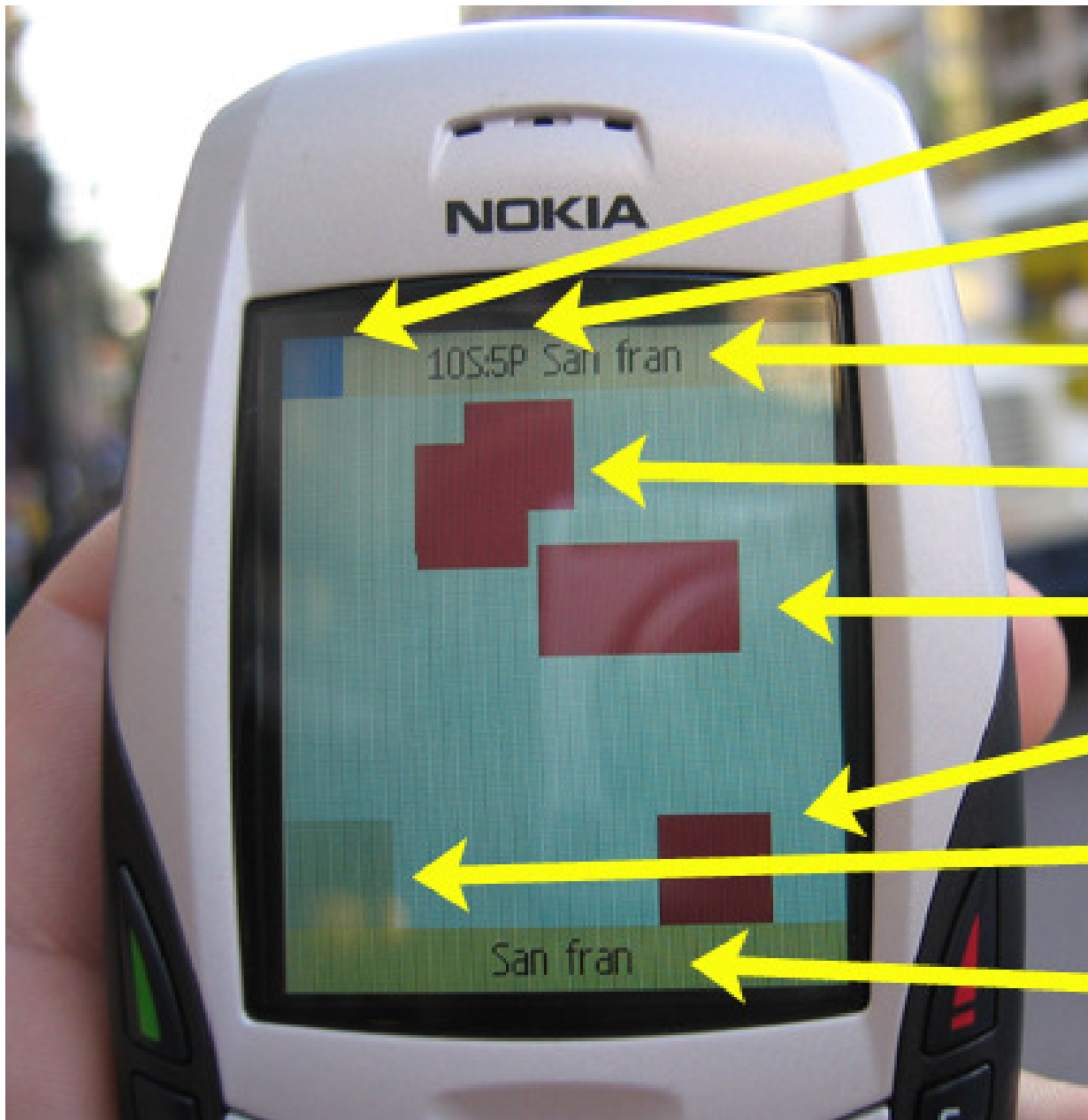


Today	Yesterday	2 Days Ago
		



Last updated: Friday, August 15, 2003 21:43





Searching On/Off

Places / Strangers

Place of Last Stranger

Recent Strangers

Past Strangers

True Stranger

Familiar Stranger

Current Place

# Idealog review