DiscoTech: A Toolkit for Handling User Level Disconnection Problems in Synchronous Groupware

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Synchronous Groupware

- Internet connection
- Internet

Using synchronous groupware, a user collaborates with other geographically distributed users in real time.

e.g. chat or video conferencing

Problem

- Disconnections are hard to handle in programming.
- No toolkit exists to help with this problem.

Solution

- DiscoTech Toolkit
  - Offers simple but flexible API
  - Reduces programming tasks of developers
  - Provides feedback to the reconnected users
  - Helps reconnected users catch up with ongoing collaboration activities
  - Mitigates user-level problems

Framework for Providing Feedback

- Internet
- Message storage
- DiscoTech
- Software Modules

- Message
- Message
- Compactor Plug-ins
- Replayer Plug-ins
- Disconnection
- Reconnection

Gentle Learning Curve

- Generic
- Partial – generic
- Application-specific

- Developers use existing plug-ins (or services)
- Customize existing plug-ins
- Create custom plug-ins

Goals

- Determine if the toolkit is sufficiently generalized.
- Determine whether the toolkit offers a gentle learning curve to the developers:
  - Does use of the toolkit scale with the complexity of the disconnection problem?

Reconnected Users Get Feedback

- Frame 1
- Frame 2
- Frame 3
- Frame 4
- Frame 5

A reconnected user experiences interpretation difficulties, confusion or misunderstandings.

Screen Shots From a Chat Application

- Feedback to ‘catch up’