CoLab: A Flexible Collaborative Web Browsing Tool

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Presentation Outline

- Collaborative Browsing
- Synchronization Model
- Functional Architecture
- Current Implementation
- Conclusions and Future Work
Collaborative Browsing

- **Traditional Browsing**
  - No way of sharing online the browsing activity among users

- **Collaborative Browsing**
  - Some way of sharing online the browsing activity among users
Collaborative Browsing

- Academic
  - Ariadne
  - CoBrow
  - E-CoBrowse
  - Let’s Browse
  - PROOF
  - WABX
  - WebSplitter
  - Wiki Wiki Web

- Commercial
  - NetDive
  - PlaceWare
  - WebCT
  - WebEx
Synchronization Relations are created and released by using Synchronization Requests, which are subject to an authorization protocol:

- “I_Follow_You” & “You_Follow_Me”
- “I_Leave_You”
Synchronization Model

- The “I_Follow_You” request:

  Can I see what you are reading?

  Of course!
Synchronization Model

- The “I_Leave_You” request:

I’m coming back to my own reading!
Synchronization Model

The “You_Follow_Me” request:

A says to B:

OK, I’m coming! Do you want to see this information?

SDT:

A → B
B → A
The synchronization state of a collaborative browsing session is kept in a tree structure called SDT (Synchronization Dependency Tree).
Synchronization Model
Functional Architecture

- User
  - Login/out & Synchronization Actions
  - Users’ Browsing Actions
  - Role Information

- Session Manager
  - Session Information Exchange
  - Login/out & Synchronization Actions

- Broker
  - Session Information Exchange
  - Browsing Requests

- Browsing Manager
  - Resources Retrieval
  - Browsing Requests

- Integration API
  - External Tools

- Internet/Intranet
  - Session Manager
  - Broker
  - Browsing Manager

- Synchronization Behavior
  - Role
  - Web Browsing

Collaborative Web Browsing System

AINA’2005 – Tamkang University, March 28th–30th, 2005, Taipei, Taiwan
Current Implementation

Internet or Intranet

Proxy

HTML File Translation

JSDT Channel
HTTP
Internal comm.

GET www.acm.org

Servlet

Cache

GET www.acm.org?COLABCLICK=YES

Translated

SYNC www.acm.org

Translated

SHOWDocument: "www.acm.org?COLABCLICK=YES"

Applet

Browser

Applet

Browser

Asynchronous User

Synchronous User
Current Implementation

CoLab

The Flexible Collaborative Web Browsing Tool

Please choose the session you want to access...

Available sessions

Please choose your role and select an username...

Available roles

Role password:

Username:

Memo
Current Implementation

CoLab: The Collaborative Browsing Tool - Netscape

Session: Distributed Systems - User: rgomes - Role: Assistant

Browsing Control

URL: http://java.sun.com/

User Synchronization Control

Role Synchronization Control

Student
Assistant
Teacher
Current Implementation

![Graph showing average retrieval time](image-url)

N <= 165

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Conclusions

- Allowing flexible synchronization relations creation/release is a good issue
- Usable on any standard browser supporting the automatic proxy configuration and on any HTML resource
- Flexible extensible architecture
- Good performance
Future Work

- Implementation of a distributed version
- API’s development
- Implementing enhanced synchronization mode using roles privileges:
  - “I_Spy_You” & “You_Join_Me”
- Implementing CoLab as a WebService
Thanks

Eυχαριστώ
Obrigado
Grazie
Merci
شكرا
Gracias