Improved Communication through VoIP / Chat for a distributed pair programming tool (Saros)
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Overview

• Saros
• Content of the written Bachelor thesis
• Implementation
• Usage
• Result
• Outlook
Saros

- Open Source Eclipse Plugin
- Supports *Distributed Pair Programming (DPP)*
  - *One Writer – One Observer (Follow Mode)*
- Supports *Distributed Party Programming*
  - *Many Writers – Many Observers*
- No communication possibilities in Saros so far
Content

• Introduction to Pair Programming
• Overview of Saros
• Introduction to XMPP (Extensible Messaging and Presence Protocol)
• Chat functionality (Multi User Chat - MUC)
  • What is already done?
  • Where are the problems?
  • How does XMPP MUC work?
• VoIP functionality
  • Choice of the Audio Encoder
  • Using XMPP Jingle Extension or StreamService?
Implementation (Chat)

- Problem: One Chatroom for all Saros users
- Chat uses XMPP MUC extension
- Now: One Chatroom for each Saros session
- Possibility to join the chatroom with an external XMPP Client (e.g. SIP Communicator)
- Chatroom name and chatroom password can be set by session host
Implementation (VoIP)

- VoIP function uses Speex (jSpeex API) as Audio De-/Encoder
- Uses StreamService by Stephan Lau (ThesisDPPXIII)
- Only classic telephone call (2 persons) – no group call supported at the moment
- Many VoIP sessions per Saros session
- Users can adjust encoder settings (e.g. quality, playback device, record device, etc.)
Usage (Chat)
Usage (Chat)

![Chat Interface Example]

- **automatisch generierter Chatraum**

- **Sarosbenutzer**

- **SIP Communicator Benutzer**
Usage (VoIP)

Starting a new VoIP Session

Invitation Dialog
Usage (VoIP)

Stopping a VoIP Session

Stop Dialog
Usage (VoIP + Chat)

Preference Page
Result

- Easy communication possibilities while using Saros without external applications
- Added an important feature of classical Pair Programming to Saros
Outlook (Chat)

- More than one chatroom per Saros session
- Inviting a user to a chatroom
- Session host should have some privileges (e.g. kick or ban a user, set a chatroom topic, etc.)
- Changing chatroom name or password during running session
Outlook (VoIP)

- VoIP session with more than two users
- Alternative encoder
- Changing encoder settings during running VoIP session
Vielen Dank!