

LDAP directory server access for user authentication in 3D- learning environments

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To provide a learning environment to a group of students, a virtual reality based 3D-chatroom for seminar-like events was realized [1].

The communication middleware is based on the open-source (a special license, free for educational usage) VRML-Multi-User-Software DeepMatrix which implements its functionality by Java-VRML coupling via the EAI. DeepMatrix itself is a pair of client and server software implemented in Java [2]. The server is implemented as a Java application which communicates with all clients and provides them with updates of the 3D-scene. The client applet controls the local VRML-browser-plug-in via the EAI to update the scene (the positions of other avatars) and senses the local user movements to send new positions to the server.

Seminars at the University of Hagen are usually part of an examination, so an authentication procedure is required. The DeepMatrix-client-server system is initially intended for anonymous 3d-chat. Nevertheless the opensource distribution of the DeepMatrix allows modifications to the Java-sourcecode to provide a connection to the existing LDAP-directory service at the University of Hagen. This modification is very convenient for the users because no extra passwords and administrative effort is necessary. LDAP, the Lightweight Directory Access Protocol was proposed in 1995 (RFC 1777) as an open standard for directory services on the Internet. The virtual university environment of the university of Hagen [3] (platform 2001) is based on LDAP.

The user authentication names for students of the University of Hagen are usually numbers. To provide a convenient interface for the learning group and the tutor, real names of the user are also fetched from the directory server database.

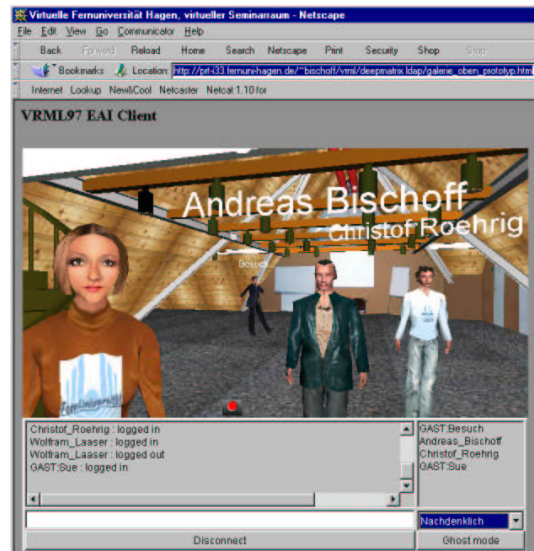


Figure 1: User avatars with real-names from LDAP

[1] http://prt.fernuni-hagen.de/pro/virtuelle_umgebung/

[2] <http://www.geometrek.com/products/deepmatrix.html>

[3] <https://vu.fernuni-hagen.de/>