Chapter VIII

From Planning Tools to Intelligent Assistants: Meme Media and Logic Programming Technologies

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Abstract

This chapter introduces an approach for creating Web application capable of operating in complex environments is introduced. The approach shows how Meme Media technologies combined with other technologies can be used for solving deferent kinds of problems in particular related to Therapy Planning in clinical trials. Combination of logic programming and fuzzy logic for creating Web applications is also introduced.
Introduction and Motivation

Nowadays a large variety of Web technologies enable end users easily to use various services through their Web browsers. At the same time the evolution of these technologies causes various difficulties and makes high demands on software developers to create not only a static repository of hypertext information and graphics but also software that have intellectuality and mobility and that respond dynamically to user input.

Creating Web-based agents is one more step towards creating sites having artificial intelligence. One of the most interesting and promising approaches to programming agents is logic programming of agents (Davison, 2001). This approach has good prospects, because the ideology and principles of logic programming are very convenient for searching, recognition, and analysing unstructured, poorly structured, and hypertext information.

This chapter proposes an approach for creating and using agent systems in Web applications through their Web browsers (Ito & Tanaka, 2003; Tanaka, 2003). The approach allows users to manipulate pads in the IntelligentPad environment by using remote http servers as the Prolog Server and the MATLAB Web server.

Agent-System for IntelligentPad Environment

IntelligentPad architecture allows users to combine media objects (called pads) through their view integration (Ito & Tanaka, 2003; Tanaka; 2003; Tanaka, Fujima, & Sugibuchi, 2000).

Figure 1 shows an agent systems that combine media objects on behalf of users. Implementation of the system consists of two dependent parts:

- An HTTP-based Prolog Server, and
- Coordination of Meme Media objects through Prolog.

The Prolog server is a Web application that evaluates Prolog goals given by client programs such as Web browsers. HTML-based Web interface provides an input form for the goal clause to be sent to the server. The server evaluates
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