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Study on Communication Support System by Annotations

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With the rapid expansion of the World Wide Web, there are also rapidly growing Web resources available; and this brings much convenience for human life. The Web information retrieval tools such as Google, Yahoo and AltaVista help people obtain required information by simply keyword-based search. However, difficulties still exist in the current Web information retrieval tools; especially, one key problem is that the current mainstream Web information retrieval tools essentially do not support semantic retrieval. The concept of the Semantic Web has risen to address this problem. In the Semantic Web, the Web-pages become not merely human-understandable, but also machine-processable. To achieve this, there is the requirement to annotate the Web pages with machine-processable metadata.

Nevertheless, adding metadata to Web pages is not an easy task. Most of existing methods require modifying the source files of the Web pages with the normalized structures. This demands large amounts of workload; and it is time-consuming and error-prone. The Annotea protocol, which was recommended by W3C in 2001, provides a good option to solve this problem. Annotea can be used to annotate the Web pages (that is, create metadata) without modifying the contents of the destination Web-pages. What's more,

as Annotea stores the annotation information in a specific server independent from the Web server, the retrieval of the Annotea-created metadata can be realized by access to the Annotea server.

Making use of the feature of Annotea to uniformly manage the storage of annotation information, the present thesis studies the methods and technologies of using Annotea to support Web-based medical information exchange. The Web has provided medical doctors a communication platform to discuss the medical problem. However the basic forms of Web-based communication between doctors are on BBS, which is limited in smooth idea and knowledge transfer. Thus, this thesis studies a metadata-creating tool to use Annotea to semantically annotate the doctors' ideas; with this tool, the medical professionals can collect and re-organize the medical information that is originally scattered around the network, so that it can be more easily understood by other professionals and thus the Web-based communications and idea exchange between medical professionals can be promoted. Furthermore, to organize the annotation information in the Annotea server, the thesis studies knowledge structurization based on the "Pyramid model", which supports structuring knowledge blocks in accordance with the logic of thinking and the personal habits of information retrieval.