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The Collaborative WWW browsing system through awareness informations

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Affected by an explosive spread of the INTERNET, many of CSCW (Computer Supported Cooperative Work) researches are focusing on the WWW (World Wide Web) or the e-mail. Especially the WWW is becoming a major foundation like Operating Systems because of its ability to execute Java and JavaScript other processes through CGI. But its asynchronous characteristics for information reference prevent it from dealing with realtime cooperative works sufficiently.

For the cooperative works, the environment must be given in which first we can come together, second we're aware of each other and lastly we can have a smooth communication. Although in the WWW many users exist, navigate and refer to the same URL at the same moment, they can't recognize other users nor a gathering situation.

For the reason, we can say that the WWW doesn't support a function of "awareness of other user's existences and actions", which is the second stage of a collaboration process.

On the other hand, the present WWW has a problem that it is difficult to search information because its contents are vast and distributed. First of all, the difficulty of hyper-media, which consists of information linking each other, has been pointed out. Usually users are searching information with supporting systems such as a search engine, but it has a problem of difficulty to select only necessary information well.

In this paper, we propose the collaborative navigation system by supplementing awareness information and try to resolve the difficulty of information retrieval by inquiring and monitoring, the most selectable actions in strange situations. This is such constructed as a system in which many users can recognize current actions on the WWW each other. We expect the system also to be effective for problems of moral because it can control irresponsible activities from excessive anonymity that is difficult to be restrained in traditional systems.

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In this system, awareness information is mainly presented as a realtime URL referring history. This paper is named such awareness information as "WWW Awareness for searching". Users search in the WWW space collaboratively with other users through this function and a chat system adaptive to WWW navigation.

This system also targets on communities in a virtual space member of which has no common purpose besides groups that have some common purposes such as a groupware. With this view, we must set up a place in which people come together before supplements of awareness information. Here the place should define the variety of people who come together. This would be presented through the function to visualize the WWW space and we can define directions of the community or common ground senses which the members should share to some degree.

We implemented a prototype system and processed a preparatory evaluation to make sure of this system's efficiency. Then we got some good results through the above experiments that users could be aware of other users' existences and actions. Users could search more efficiently according to a smooth communication each other.