

Development of nuclear data application software with “Webble World”

S. Ebata,*¹ A. Makinaga,*² and M. Aikawa*²

Nuclear reaction data is applicable and considerably important for public societies and various academic communities, e.g., nuclear engineering, radiation therapy, and physics. Moreover, there exists a need for means to utilize this data efficiently and conveniently by individual users. To realize a system capable of utilizing such nuclear data, we are developing application software.

There are several open tools available for searching through data. However, these tools are versatile, and not optimized for individual users. It is difficult to satisfy both universality and optimization of the tools simultaneously. Under such situations, we are motivated to create a tool customizable by “users”. In Hokkaido University Meme Media Laboratory, the IntelligentPad (IP) system has been developed to circulate and manage the knowledge of information¹⁾. On the IP system, data and functions are treated as objects, which are called “Pads”. Since Pads can be connected to each other, user can combine required Pads and constructs original tools for the suitable to their needs.

In the previous work, we developed a “Nuclear Reaction Data and Handling Tools for the NRDF”²⁻⁵⁾ and the “Charged particle nuclear reaction data retrieval system (CONTIP)”^{4,5)}. Here in, we plan to introduce “Webble World” to develop the current systems on the Web. If the system can be extended through Webble World, it will be independent of operating systems; it is available through the Internet and can be shared between users. The users can customize and construct an original tool for their own purposes.

The fundamental idea of Webble World is same as that of the IP system. In the Webble World, an object with a function is called a “Webble” (Fig.1), instead of a “Pad”. Webbles connected by users are conserved in the Webble World, and they are used as components for a new Webble. Webble has some slots to connect with others. For instance, if we connect an appropriate slot in the “Text Webble” with the corresponding slot in the “Display Webble” correctly, we can send the text from the former Webble to the latter and view the text on the latter. A user, however, needs to know the basic structure detail of a Webble, which is part of the tasks in the development of a Webble tool.

The proposed new system can be utilized to search, retrieve, and plot nuclear data. As objectives, an appropriate connection between the system and a database and also the plot of the retrieved data are necessary. There have already been Webbles with func-

tions for the purposes as shown in Fig.2. The proposed system is slightly difficulty in terms of intuitiveness. Therefore, we plan to develop simple usage manual to assist in developing the tools, while also considering the needs of nuclear data users.

Hokkaido University Nuclear Data Centre (JCPRG) is developing the system for using nuclear data with Webble World. Work on making set of Webbles for searching nuclear data, and manuals to use these compound Webbles, is progressing. In addition, we are constructing a new data format using XML in order to improve the usability⁷ of the system.

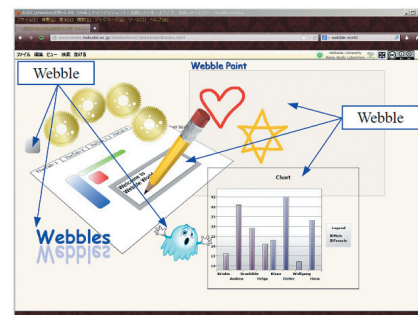


Fig. 1. Many Webbles on Webble World⁶⁾

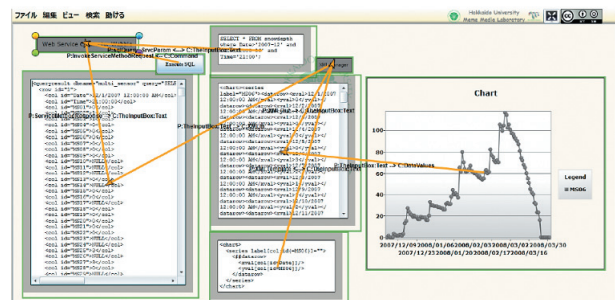


Fig. 2. Compound Webble to read and convert nuclear data, and to subsequently express them on a graph. Yellow lines show the relation between Webbles.

References

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*1 Meme Media Laboratory, Hokkaido University

*2 Faculty of science, Hokkaido University