


Developing Flexible GUI Systems to Support Self-Learning		
Kimio SATO		
Professor	ksato@sendai-nct.ac.jp	
Affiliated Societies	IEICE, JSIAM, JSEE	
Keywords	utilization of ICT (09070), learning support (62030), discrete mathematics (12030)	

Research Topics

- Developing a compact basketball data management system
- Developing a graph theory learning integrated support system
- Application of graph theory to network analysis problems

Research Seeds

• Development of GUI System with high operability

We are developing flexible GUI systems such as a basketball data management system (BM) and a graph theory learning integrated support system (GLIS) to support students' self-learning using C# programming language.

As presented in Fig. 1, BM consists not only of standard data input and analytical processing functions, but also of shot analysis functions that can analyze shot data in detail. Using BM, we can input data easily and efficiently with a pen or mouse, and can do various analyses while playing games. We also plan to implement additional functions in BM that can automatically advise teams or individual players in terms of technique, centrality, mental status, physical stress, etc. from the input data. Furthermore, by connecting two or more BMs to a mobile wireless router, BM users can share the input game data and analytical results in real time.

The GLIS presented in Fig. 2 is designed to support graph theory learning. Actually, GLIS has the following main functions: basic graph edit (graph drawing, delete or move vertices and edges), automatic conversion from graphs to various matrices, and plug-in in C programming language. Particularly, the plug-in function is important for self-learning of students. Using this function, users can produce analytical programs of the main body of GLIS independently; users can compile them, put them in a specified folder, and use them by selecting them directly from the GLIS menu. Now, we are improving the functionality and convenience of GLIS, and applying GLIS actively to graph and network analysis problems.

Related Technology

- Construction of flexible GUI systems in C# programming language



Fig .1 BM.

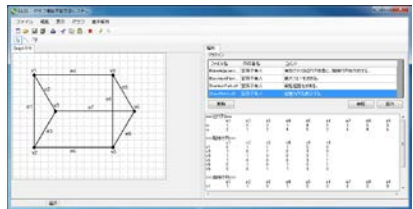


Fig .2 GLIS.