Research on Intelligent Exercise Prescription System for Civil Servant

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Abstract. Public servant refers to the people who work in the government institutions of various levels and execute the mission of state administrative functions and powers. Civil servant is in sub-health status and is high dangerous group of some chronics. Civil servant has a highly recognition about the value of sport for health and has desire to participate in it. But because some objective and subjective reasons, Civil servant cannot participate in exercise and is lack of targeted and scientific. The intelligent exercise prescription system for civil servant has been proposed by the following method such as literature, expert interviews, experimental test, software engineering method, data mining, system dynamics modeling. The intelligent exercise prescription system based theory on artificial intelligence and assessment of fitness-health include these achievements. The intelligent exercise prescription system is the life-style and rest/work system and chronics of civil servant taken into account deeply so as to ensure the feasibility and targeted and scientific of exercise prescription.

1 Introduction

Public servant refers to the people who work in the government institutions of various levels and execute the mission of state administrative functions and powers. Practice has shown that civil servants need to own health-related fitness such as physical and psychological to guarantee them competent in the posts. However, the properties and characteristics of civil servants' work easily lead to their fitness problems. Firstly, Due to the heavy working strength, long working hours, lacking of physical activities, the public servant's rates of metabolism and basic metabolism is lower, blood circulation is worse, the functions of human organs and main joints is decline, which easily make them got chronic occupational diseases, such as obesity, angiocardiopathy, arthritis. Secondly, the public servant' ability which resists disease and adapts to environment become decline because of many social intercourses, stimulation of tobacco and wine, the excessive intake of all kinds of high-calorie or high cholesterol foods. Finally, the fast pace of life, mental nervous have led to various psychological problems associated with job stress increased..

Based on it, The intelligent exercise prescription system for civil servant has been proposed by the following method such as literature, expert interviews, experimental test, software engineering method, data mining, system dynamics modeling. The intelligent exercise prescription system based theory on artificial intelligence and

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2   Decision Support System

A Decision Support System (DSS) is a computer-based information system that sup-
ports business or organizational decision-making activities. DSSs serve the manage-
ment, operations, and planning levels of an organization (usually mid and higher
management) and help to make decisions, which may be rapidly changing and not
easily specified in advance (Unstructured and Semi-Structured decision problems).
Decision support systems can be either fully computerized, human or a combination of
both.

   While academics have perceived DSS as a tool to support decision making process,
DSS users see DSS as a tool to facilitate organizational processes [1]. Some authors
have extended the definition of DSS to include any system that might support decision
making. Sprague (1980) defines DSS by its characteristics [2].

   DSS tends to be aimed at the less well structured, underspecified problem that
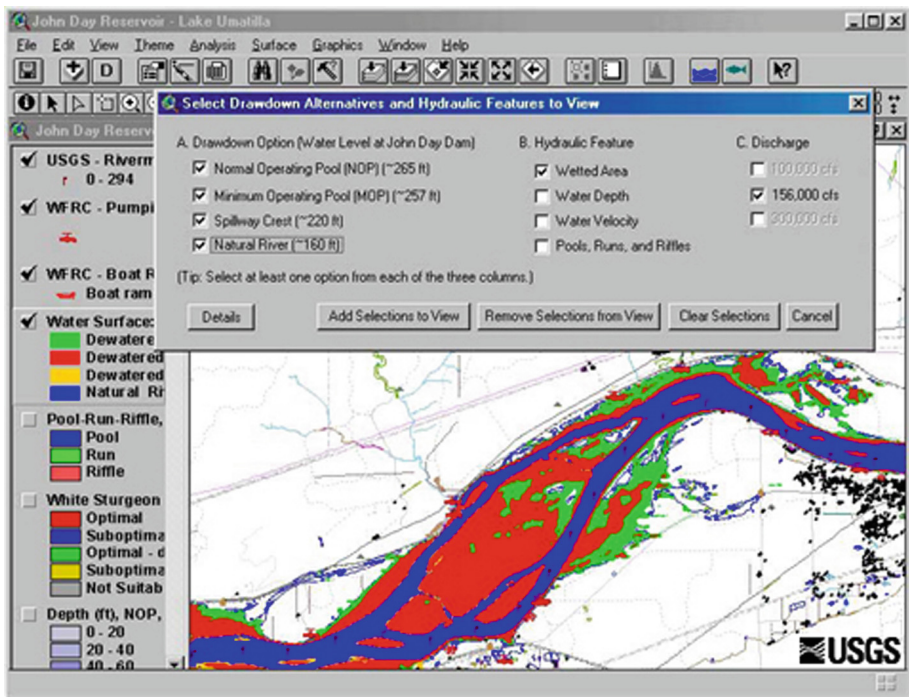upper level managers typically face; DSS attempts to combine the use of models or

Fig. 1. Example of a decision support system

analytic techniques with traditional data access and retrieval functions; DSS specifically focuses on features which make them easy to use by non-computer people in an interactive mode; and DSS emphasizes flexibility and adaptability to accommodate changes in the environment and the decision making approach of the user. DSSs include knowledge-based systems. A properly designed DSS is an interactive software-based system intended to help decision makers compile useful information from a combination of raw data, documents, and personal knowledge, or business models to identify and solve problems and make decisions.

Typical information that a decision support application might gather and present includes: inventories of information assets (including legacy and relational data sources, cubes, data warehouses, and data marts),comparative sales figures between one period and the next, projected revenue figures based on product sales assumptions [3, 4].
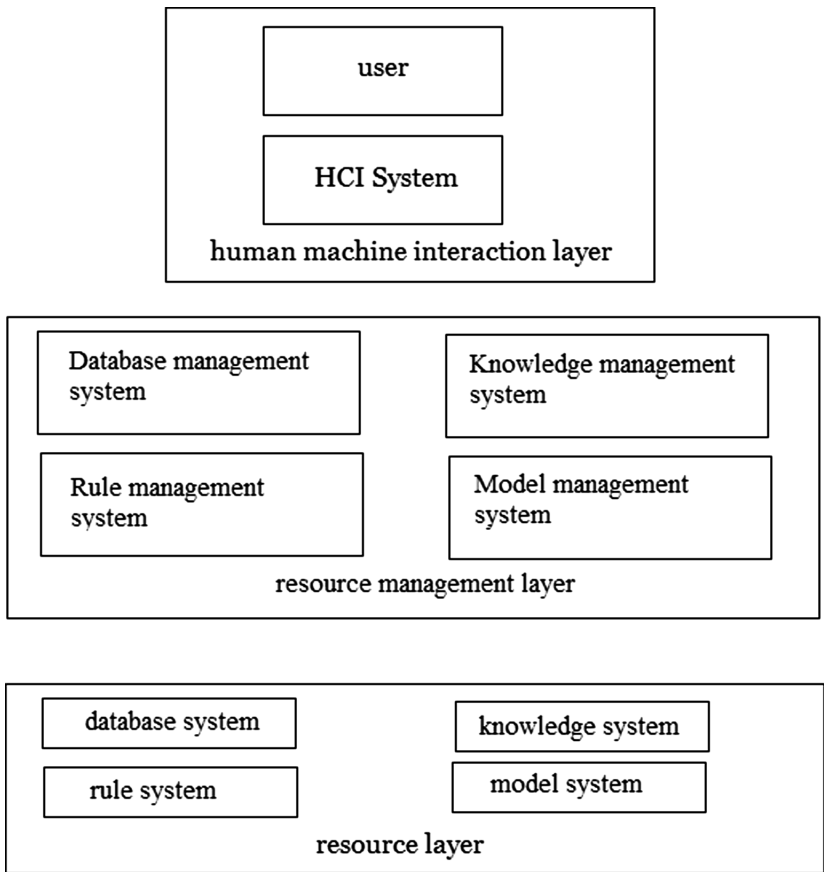
Example of a Decision Support System is Fig. 1.

Fig. 2. The structure of intelligent exercise prescription system for civil servant

3   Intelligent Exercise Prescription System for Civil Servant

Basing on Decision Support System theory, The structure of Intelligent Exercise Prescription System for Civil Servant is Fig. 2.

Setting up the system is based on three levels, including the resource layer, information processing layer, human machine interaction layer. From the structure, resource database is mainly composed of database, knowledge database, rule database and model database. Resource management layer is composed of four database management systems. Among the various management systems, which is related to each other. So, the resources can be called accurately, reasonably and conveniently. Human-computer interaction layer can realize direct dialogue between user and system, which can provide a convenient entrance of decision support for users.

From the elements of the system, the system consists of four major subsystems.

- Database subsystem = Database + Database management system
- Knowledge subsystem = Knowledge database + Knowledge management system
- Rule subsystem = Rule database + Rule management system
- Model subsystem = Model database + Model management system

4   Conclusions

The intelligent exercise prescription system for civil servant has been proposed by the following method such as literature, expert interviews, experimental test, software engineering method, data mining, system dynamics modeling. The intelligent exercise prescription system is dazed on the artificial intelligence and sued Browser/service as support and used internet technology to realize the service online of the scientific and intelligent exercise prescriptions.

References

1. Keen, P.: Decision support systems: A Research Perspective. Center for Information Systems Research, Alfred P. Sloan School of Management, Cambridge (1980)
2. Sprague, R.A.: Framework for the development of decision support systems. MIS Q. **4**(4), 1–25 (1980)
3. Haag, S., Cummings, M., McCubbrey, D.J., Pinsonneault, A., Donovan, R.: Management Information Systems: For the Information Age, pp. 136–140. McGraw-Hill Ryerson Limited, New York (2000)
4. Wright, A., Sittig, D.: A framework and model for evaluating clinical decision support architectures q. J. Biomed. Inform. **41**, 982–990 (2008)