HHME15-K229
A DRUG INFORMATION MANAGEMENT SYSTEM DESIGN AND IMPLEMENTATION BASED ON DATABASE

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Aims: Currently, drug management systems are bound up with the whole process of procurement, inventory, sales, utilization and so on of drugs. In order to realize effective drug management, drug information must be organized according to actual requirements of different departments and processes in hospitals.

Methods: According to the drug management needs in small hospitals, the requirements to develop a drug information system are analyzed. The system functions, architecture and data flow are determined and the detailed design for the system is completed. An extendable XML format is used to design a drug code data structure. A user interface is developed to realize visually interactive encoding. A flexible coding method is put forward based on code classification theory. The system adopts B/S structure with Java as the development tool and SQL Sever as its background database.

Results: A drug information management system is designed and developed for major sections of a hospital..

Conclusions: The system can provide flexible drug information service for various applications in a hospital based on a uniform database.

HHME15-K230
STUDY ON BIOLOGICAL INFORMATION RETRIEVAL TECHNOLOGY BASED ON SEMANTIC WEB

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Aims: Digital publishing has become the trend of scientific and technological information publishing. Different digital publishing modes require different data representation that blocks content mining, knowledge discovery and knowledge association. Effectively using information retrieval technology based on semantic Web can improve knowledge mining and association capability.

Methods: The architecture of biological information retrieval is divided into several modules. The man-machine interaction module receives user's query request that is converted into corresponding ontology query according to a domain knowledge ontology library so that a computer can recognize the query. A semantic logic reasoning machine carries out similarity matching, reasoning, result sorting and clustering and so on with association knowledge in a reasoning knowledge database. A domain knowledge collector is in charge of domain knowledge collectionand management from various resources.

Results: The architecture to retrieve biological information from different resources based on semantic Web is presented and related technologies are studied.

Conclusions: Biological information retrieval based on semantic Web can play an important role in knowledge mining and association.

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A CALCULATION METHOD OF SEMANTIC SIMILARITY AND ASSOCIATION FOR BIOLOGICAL INFORMATION RETRIEVAL

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Aims: In order to retrieve information more efficiently and accurately, different information retrieval technologies are developed. However, there still exist many deficiencies of traditional information retrieval technology. How to calculate the semantic similarity and association is one of the key issue to improve biological information retrieval efficiency and accuracy based on ontology and semantic Web.

Methods: According to a semantic retrieval model based on ontology, a semantic similarity and association calculation method is presented. Protégé is used to construct biological vocabulary ontology. The method integrates concept distance, concept content and user-defined properties to quantify the semantic similarity and association between concepts with some presented calculation formula. Query keywords are then extended and their similarity and association are calculated and normalized.

Results: The retrieval results prove that the calculation method is feasible.

Conclusions: The method can be used to determine the semantic similarity and association among a large number of relevant or irrelevant biological information.

HHME15-Z02
THE MECHANICAL BIOSENSOR DESIGN AND SIMULATION BASED ON MICRO MECHANICAL CAVITY ARRAY STRUCTURE

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Aims: The requirements of the size, shape and surface appearance accuracy of the medical biological sensors were very high in the life and health monitoring system. The multi sensor is more entry level in the wearable system area. These biosensors are hard to meet the clinical medicine demand of clinical medicine on the detection accuracy currently.

Methods: Aimed at the application background, a kind of micro mechanical cavity array structure medical biological sensor was designed using computer software UG. This sensor has higher detection accuracy.

Results: The advantages of the sensor aresmall volume, light weight and high surface precision. This product will have broad application prospect after the completion.

Conclusions: Through the simulation and analysis we can see that the sensor has higher precision than the current monitoring sensors which being used on the biosensor device.