
图书馆管理系统的设计与实现

摘要

随着计算机技术的快速发展，电子信息化慢慢成为主流的管理手法。作为一种现代流行的经营模式，采用信息管理系统能够有效提高管理效率和改善业务的规范性。图书馆代表着一间学校或者地区的文化标志，图书馆丰富的图书资源能够带给我们重要并且优越的学习资源，图书馆管理系统是学校管理机制中重要的一环。

通过对图书馆管理系统的运行管理机制进行调查研究，开发了此基于微信小程序的图书馆管理系统。本系统实现了学校图书馆的基本功能以及相关管理工作。本系统主要分为两个部分，分别为用户模块和管理模块。用户模块是由图书借阅扫码模块、图书检索模块和论坛交流模块三部分组成。管理模块主要是包括单点登录模块、资源借阅模块、资源检索模块、资源发布模块、用户管理模块、系统管理模块和近期浏览借阅量模块。本系统使用 JSP 技术开发系统页面，采用 MySQL 设计数据库，通过 JDBC 技术连接数据库，通过微信开发者工具实现前端界面，通过编写 Servlet 来实现具体功能模块，为图书馆建立的一套能够完成日常使用，通过人机的交互，更快速有效的完成图书借阅等操作的系统。

为了图书资源合理利用并及时优化图书库，采用了基于用户的 FCM 聚类算法来设计。首先用户对书籍的借阅信息、资源浏览的时长、次数和评论的次数等都会通过服务器转到后端，然后通过 FCM 聚类算法将收集到的信息进行计算，然后传给管理员，最终即可达到及时优化图书库的效果。

关键词：图书馆管理系统；微信小程序；FCM 聚类算法；MySQL

Abstract

With the rapid development of computer technology, electronic information technology has gradually become the mainstream management method. This is a modern and popular business model, using management system can effectively improve management efficiency. The library represents the cultural symbol of a school or region. The rich book resources of the library can bring us important and superior learning resources. The library management system is an important part of the school management mechanism.

Through the investigation and Research on the operation and management mechanism of library management system, the library management system based on Wechat applet is developed. This system realizes the basic functions of school library and related management. The system is mainly divided into two parts: user module and management module. It is composed of three modules: book retrieval module and book exchange module. The management module mainly includes single sign on module, book borrowing module, resource retrieval module, resource publishing module, user management module, system management module and recent browsing and borrowing module. This system uses JSP technology to develop the system page, uses MySQL to design the database, connects the database through JDBC technology, realizes the front-end interface through Wechat developer tools, and realizes the specific functional modules by writing servlets. It establishes a set of system for the library to complete the daily use, through the human-computer interaction, to complete the book borrowing and other operations more quickly and effectively.

In order to make rational use of book resources and optimize the library in time, FCM clustering algorithm based on users is adopted. First of all, the borrowing information of books, the length of resource browsing, and the number of times of review and so on, will be transferred to the back-end through the

server, and then the collected information will be calculated by FCM clustering algorithm, and then transmitted to the administrator. Finally, the library can be optimized in time.

Keywords: Campus reading room; We chat applet; FCM clustering algorithm; MySQL

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