

The Design and Implementation Research of Library Management Information System

Chunmei Wang¹

¹Jilin Agricultural University, Changchun, Jilin Province, China

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Abstract. The library is the main source of people to acquire knowledge and information, the library's main mission is to serve the readers wholeheartedly. With the rapid development of information technology and network technology, brought new challenges to the library service. In order to improve the service quality and work efficiency, this article on the basis of the actual demand analysis of the library, the library information management system for the design of the research. Mainly includes the library information management, books management, reader information management, information system management four function modules.

Introduction

With the development of the society, people demand for knowledge is in constant growth. Books as the main way of people get their knowledge and growth. That make the library occupies a certain position in people's life. But, as the amount of library book growing, caused the library space is extremely insufficient, extrusion, poor management [1]. These are directly influenced the readers to make full use of the library. How to provide convenient service for readers, improve the utilization rate of books and scientific management of the library and other issues have become increasingly prominent. Therefore, must be established to support of information technology, computer technology, and network technology, the combination of human and the library management system, management and system organically unifies in together, to maximize the function of library, service optimization, and management standardization [1]. In order to meet the requirement of readers of books, but also greatly reduce the workload of library work personnel, fully improve the efficiency of library management and service quality. At this time are special needs to develop a set of library management system, through the system to improve the management efficiency of the library, thus reduce the work flow and cost management.

The design of system structure frame

System requirements are concise and easy to operation, user friendly interface, convenient man-machine interaction [2]. Facilitate the preliminary understanding and use the books management system management system, information management is simple, simplify the work of people, retrieves, the search rapidly convenient, easy to modify, high reliability, large storage capacity, fast data processing, the secrecy good, long life, low cost, data redundancy is lower, the system stability is better, and so on [2].

- Entry: new books and basic information input,
- Delete: delete old books and basic information,
- Query: the query to borrow the books information,
- Update: modify an existing book information,
- Books borrowing: implement user book formalities,
- Books return: implement user also book formalities.

Users can query to this system for their needs, or modify operations, such as automatically according to the requirements of the user to add, delete, borrowed operation. We can also find the books, consult books to details, refer to the reader's details. Finally clear the full results in the screen.

Convenient for the user to the operation of the library, and improve the accuracy, and can achieve twice the result with half the effort [2].

The flow chart of the system is shown as picture 1.

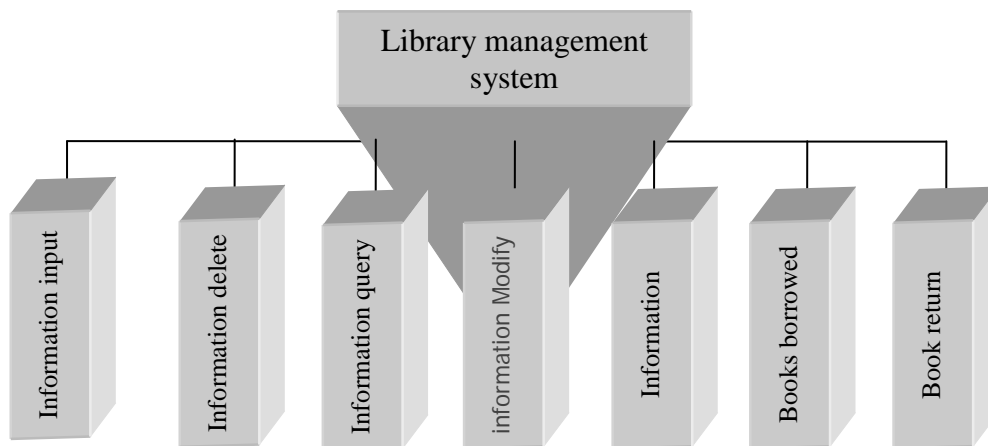


Fig. 1 The genial design flow chart of the system

Design should design a theme framework, with the top down, from coarse to fine, the design method of the subject frame design is completed, we can then its expansion on the base and further improvement, to meet the basic design requirements, the design can avoid the conflict of the module.

The main function design. Main body function requirement design is concise; only provide input, processing and output part of the function. In which each functions module in menu mode choice [3].

Main body function determines the appearance and effect of system; concise appearance can help people faster to understand the role of the various functions, to increase efficiency. Flow chart is shown in figure 2.

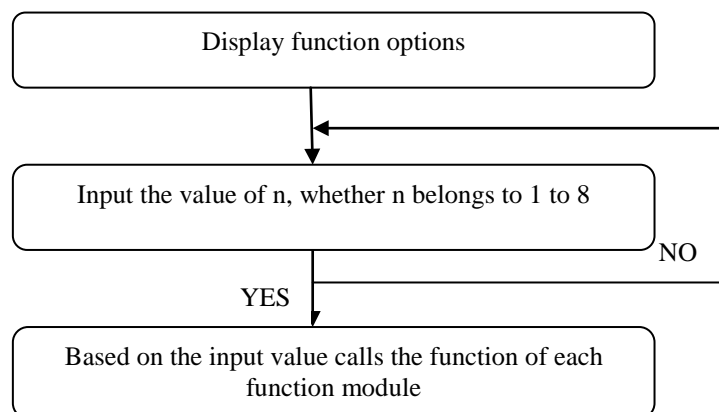


Fig. 2 Flow chart of the main function

Input module. The function of the module is if users need new new book information, through the keyboard input to add new information detailed in the original input file but fails to cover the original information. Input function can extend the books management system management system, the number of figure in real life, this is a must-have feature, increase the usability of the system [3]. Flow chart is shown as below figure 3.

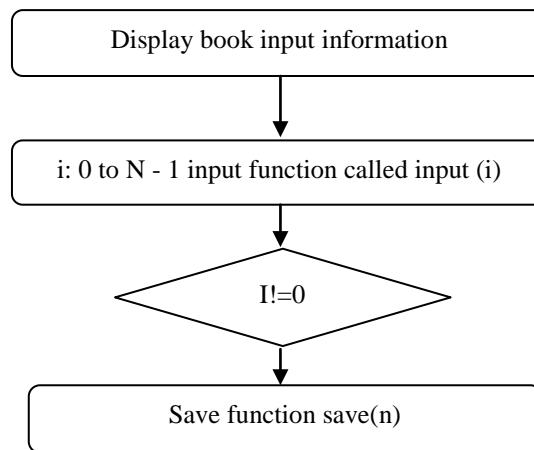


Fig. 3 Input module flow chart

Delete module. The module is used to display all of the books information, because the record is more, so take a split screen display [4]. After show all records, users need to input Numbers and then find the book information. Flow chart is shown as below figure 4.

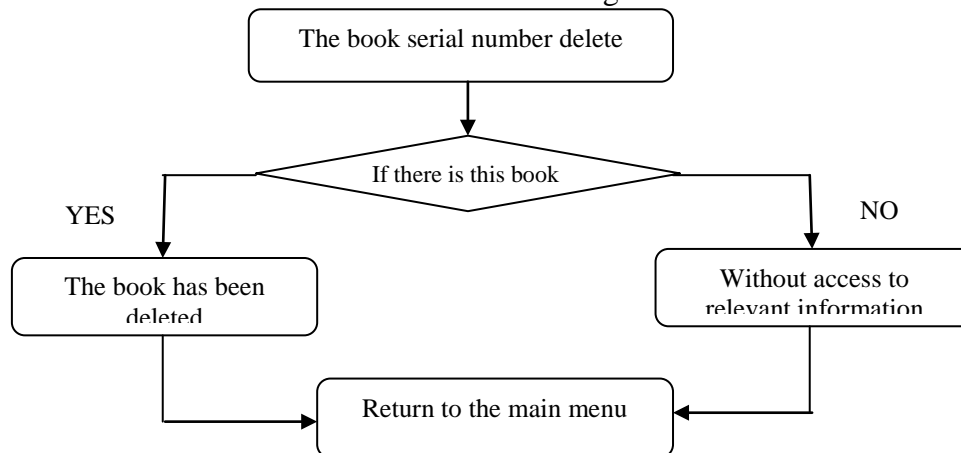


Fig. 4 Delete module flow chart

The module query. Function of the module should be embodied in the user to enter the book title, others if you have any queries. Query module type is one of the most used functions, the stand or fall of lookup to a certain extent determines the system is good or bad, good search module and algorithm can simplify the people find time and increase the search accuracy, so the query module must be designed to be simple and has fast response speed [1]. Flow chart is shown as below figure 5.

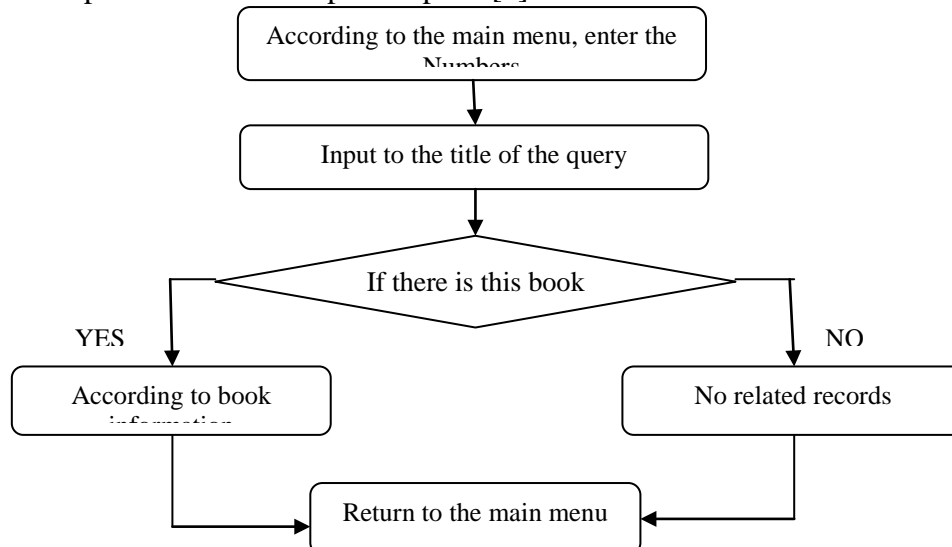


Fig. 5 The module query flow chart

The module modify. Reflect the module function for the user to modify the books information, if a record is modified information. Flow chart is shown as below figure 6.

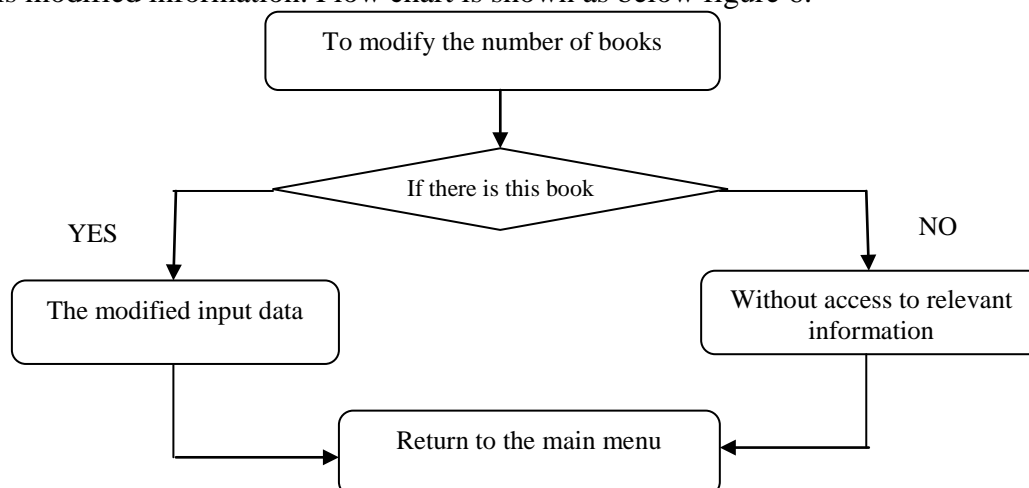


Fig. 6 Module modify flow chart

Display module. The module function to display all should be reflected in the book of information. Flow chart is shown as below figure 7.

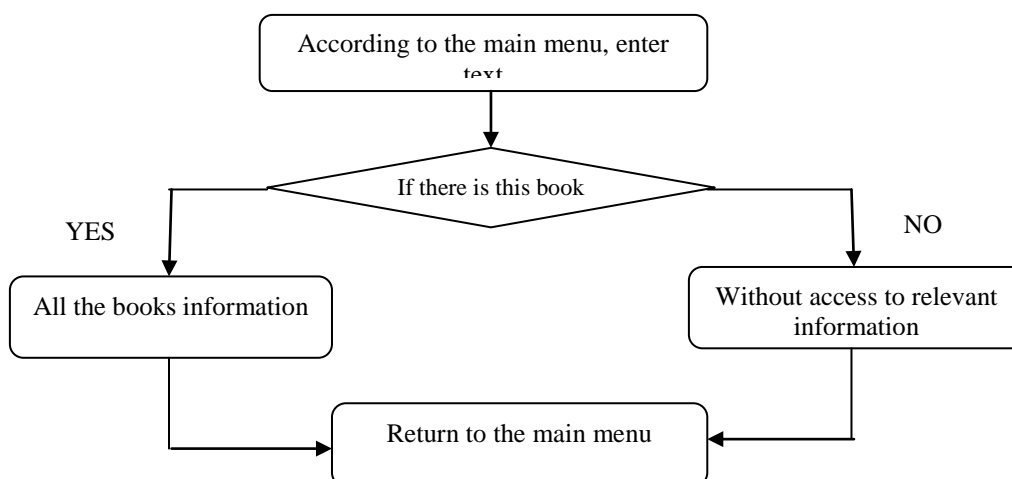


Fig. 7 The module display flow chart

Lending module. Function of the module should be embodied in the user to enter the serial number, if a book is required to enter your account number. Flow chart is shown as below figure 8.

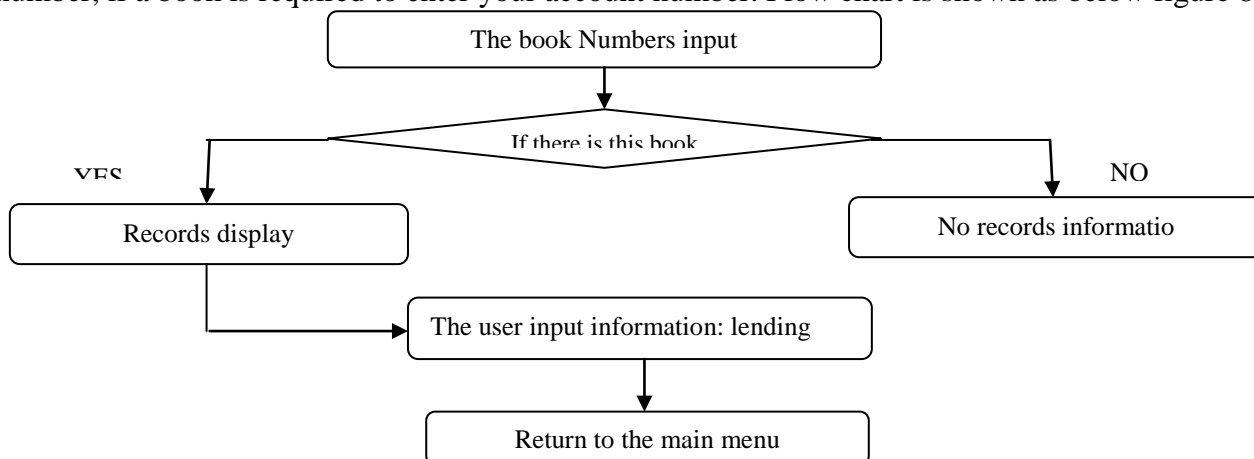


Fig. 8 Library lending module flow chart

Return the module. Reflect the module function for the convenience of the user to return books. Return module is mainly to update the number of books, for the next one library users with the possibility of a library, because the computer cannot accurately identify books was damaged, so the damage degree of a librarian decision, and should formulate corresponding indemnity clause [5]. Flow chart is shown as below figure 9.

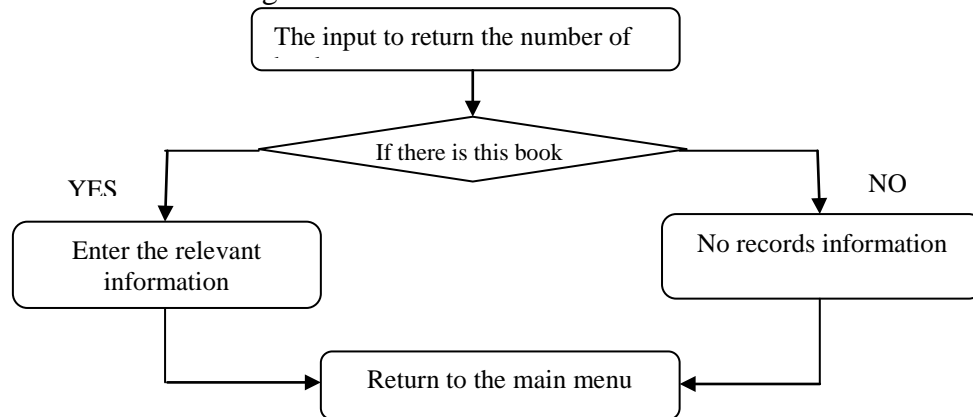


Fig. 9 Books return module

System debugging and running

The purpose of the test is to hope can with the least amount of manpower and event found potential of various errors and defects, we should according to the development stages of the requirements, design, such as the internal structure of a document or program design test case, and use these examples to run the program, so that the discovery of the error. The principle of the system test should follow the basic rules [6].

1) Should be tested as soon as possible and constantly. Test is not finished in the system development before, because of the complexity of the original problem, the diversity of the development phase, and such factors as the participant of thin, at various stages in the development process may be an error, therefore, the test should be at all stages of development, we should correct the crops as soon as possible, eliminate hidden dangers.

2) The test work should be avoided by the original development software, on the one hand, developers are often reluctant to deny their work, always think own developed software program there is no error, on the other hand, developers are often difficult to find your own mistakes, has limitations, so we should find someone else to help check procedure. This will become more objective and more effective.

3) Design test plan, not only to determine the input data, and according to the output of the system function to determine the expected effect and results. Comparing the actual output and the expected results can be found that the test object is correct, whether there are some hidden dangers.

4) When designing test cases, not only to design effective and reasonable input conditions, but also contains the unreasonable, failure of input conditions. Test of time, people often used according to the reasonable and normal circumstances, thus ignoring anomaly, the unreasonable, the unexpected situation, and these conditions may be concerns, may cause the collapse of the system.

5) In the test program, not only to test whether the program to do the thing to do, to test whether the program did not to do. Redundant work have side effects, affect the efficiency of the program, something will bring the potential harm or error.

6) In strict accordance with the test plan, to avoid the randomness of the test. Test plan should include the test content, schedule, test environment, test tools and test data, etc. In strict accordance with the test plan can ensure progress, to coordinate all aspects.

7) Keep test plan, test cases, as part of the software documentation, in order to maintain the convenience of later.

8) Test cases are designed carefully, can provide convenient to test or additional tests. When correcting error, system function expansion, needs to be tested, and these highly repetitive work, can

take advantage of the previous test cases, or on the basis of its modification, and then in the test, this technology to simplify the system maintenance time and improve the efficiency of maintenance.

Summary

This system operation is simple, compact and practical, stable operation, high automatic degree, have a variety of functions, can meet the needs of the general the day-to-day management of the library. For books, readers, borrowing and returning books and other information input, modify, and delete, at the same time provide flexible rich query, and other functions, convenient statistical summary.

References

- [1] M. H. Zhang, Visual c++ development books management system management system. Beijing: Beijing normal university, 2005, vol. 6, pp. 32-40.
- [2] C. T. Hong, Database theory and design, The library theory and practice, 2014, vol. 3, pp. 63-66.
- [3] J. W. Zhong, Visual Basic database instance navigation, Beijing: Tsinghua university press, 2003, vol. 4, pp. 33-37.
- [4] Z. F. Wang, Library management information system design and analysis, Journal of library of China, 2013, vol. 3, pp. 12-16.
- [5] H. X. Tao, Library management information system, Library journal, 2004, vol. 8, pp. 65-69.
- [6] Z. X. Yuan, Books management system management system design and implementation, Work of university library, 2012, vol. 2, pp. 21-25.