Mobile Library Application Using Desktop and Smartphone

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Abstract- **The aim of this system was to allow students and professors easily searching for desired books and relevant information and to provide users with more convenient and practicable information services. With the advancement of information technology, the wireless network and mobile device continue development, which make people can acquire new knowledge with unlimited time and space. These reasons make the research necessary to prepare a library that can be accessed by users using Android Smartphone. The method used in this research is the First to define the problem and to analyze of user requirements. Second, to design and system design using UML (Unified Model Language). Third, develop a mobile application using android technology and SQL as databseserver, Fourth perform application testing and fault finding before this application is implemented. The system will be developed in the research is the application can be used as an alternative media library catalog search form, search Books, Magazines, Journal, Proceedings, also borrowing services online, so after doing the online borrowing member libraries can come to the library to pick up the book without to wait and queue.**

Keywords **-Library websites, smartphones, mobile devices, mobile applications.**

I. Introduction

Recently, with the popularization of wireless Internet and mobile devices, more users use mobile devices to browse web pages without time and space limitations. More students and teachers use tablet computers or smart phones to read electronic books or electronic journals. This phenomenon indicates that mobile library has become learners' main resources of acquiring knowledge. This major paradigm shift is mainly because of the desire for people to use mobile communication gadgets as the primary medium to access internet. Desktop computers are rapidly replaced by mobile communication devices such as tablets, phablets, smartphones and wearable technologies. The aim of this system was to allow students and professors easily searching for desired books and relevant information and to provide users with more convenient and practicable information services.

A successful information system needs to take other elements into consideration, such as system quality, users' willingness, satisfaction and so on. Therefore, to increase use rate of a mobile library, this study aimed to provide references for future mobile information systems' evaluation and improvement of libraries by analyzing use statues, satisfaction and success model of "Mobile Library APP System."One part in college, libraries need an information system that is accurate and fast. Library is a means source of knowledge from different disciplines.

II. Literature Review

A. Mobile Library

Recently, wireless telecommunication combined with mobile devices has become peoples' important channel of accessing information. More students and teachers use tablet PC and smart phones to search for electronic journals, electronic books and other e-resources. As a result, a great amount of libraries combine mobile telecommunication

technologies with their services to develop mobile services compatible with mobile devices, which shortens users' time in searching for their desired information. The phenomenon indicates that Mobile Library has become an important source for learners to acquire knowledge.

B. Informational System Success Factors

The Informational System Success Factors was developed by DeLone & McLean in 2003. Informational system success factors was mainly based on findings of communication model by Weaver (1949) and Mason's (1978) information influence model and synthesized over 180 empirical studies on information management between 1981 and 1987 (DeLone & McLean, 2003). Informational system success factors comprise four constructs: information quality, system quality, service quality, user satisfaction as perspectives to evaluate the usage status of an information system.
Information Quality: Evaluation of the quality of information systems' production
System Quality: Evaluation of system effectiveness of the information system
Service Quality: Evaluation of service quality that information system providers offer to users
User Satisfaction: Evaluation of users' reaction when using the information system

III. Mobile Library App System

In view of this, this study used telecommunication service as the main idea and adapted Android open source code to develop a "Mobile Library APP System" that mainly focused on the library resources of the Library. The system allowed students and faculty easily searching for their desired book information in the hope of providing more convenient and practicable information services to users.

The function design framework of the system is illustrated in Figure 1.
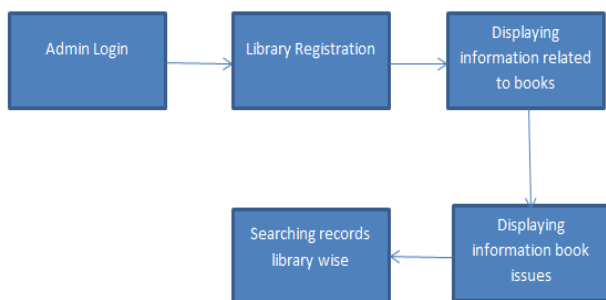

Fig. 1. The functional architecture of mobile library app system.

The system used Android open source code to develop a service system of mobile communication library application. It can be installed in tablet PC or smart phones. Thorough Mobile Library APP System, the faculty and students of the university can easily check the book status, new book notice, the individual book-borrowing and returning records and carries on reserving. Users could fasten the searching process to find their desired books or to use relevant services.
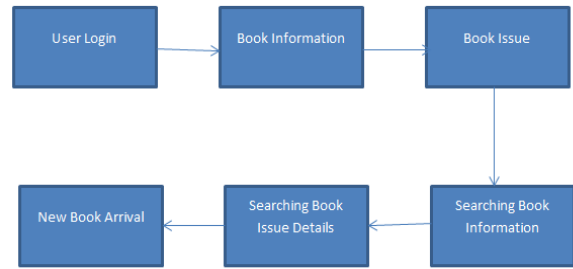
IV. System Architecture

There are two type of system: Centralized System and User System.
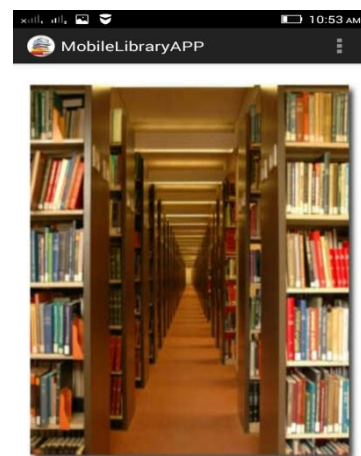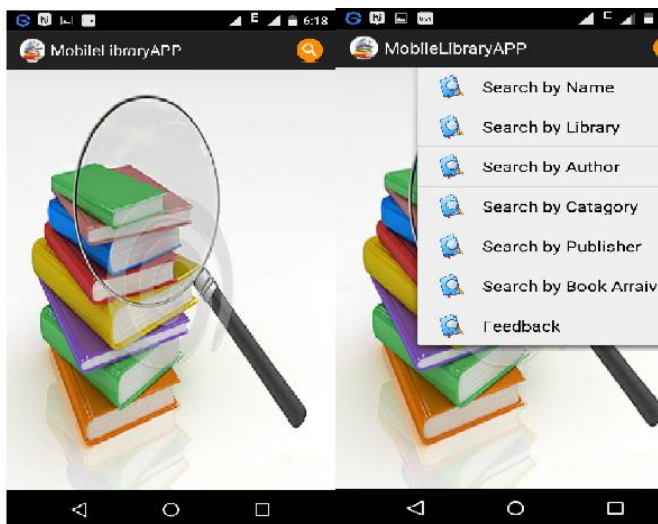1. Centralized System:

2. User System:

V. Methodology

This study evaluated and analyzed college students' use status, satisfaction and other relevant factors of the "Mobile Library APP System" by using questionnaire. Therefore, to develop a valid and reliable questionnaire, this study consulted previous studies carried by scholars and experts to design the questionnaire content (Balaban et al., 2013; Wang & Wang, 2009). Upon completing the first draft of the questionnaire, fifteen members of college faculty were invited to conduct pre-test of it. Part of wording in first draft was amended according to pre-test results and suggestions of the faculty. The purpose was to produce more complete and comprehensive questionnaire and let interviewees understand the questions before officially issuing it. The content of the questionnaire of this study can be categorized into five perspectives: personal data of interviewees, information quality, system quality, service quality, and user satisfaction. The Lakers scale was adapted in the questionnaire:
(1) Strongly disagree,
(2) Disagree,
(3) Neutral,
(4) Agree,
(5) Strongly agree.

VI. Result
Start App:

Main Form:

VII. DISCUSSION

This study mainly developed a "Mobil Library App System" for college students, used information system success factors to verify their use statues and satisfaction with the system. Based on the analysis of experiment results,this study developed the "Mobile Library APP System" was helpful to college students when they were searching books or information relevant to books and their willingness of continuous use.

This study investigated the Mobile Library APP System with information system success factors by DeLone & McLean (2003), based on the experiment results, the system can be really help the faculty and students of the university to quickly searching books information or e-resources. This indicates their level of satisfaction with the system is strong and willingness of continuous use in future library relevant activities.

In addition, among previous studies in library relevant fields, there are empirical studies which conduct in-depth discussions on information systems. Therefore, although this study included merely students in National University of Tainan as experiment subjects and analyzed 206 valid questionnaires, the data analysis showed positive results.

Therefore, the results are representative which the main contribution of this study. In the future, the findings of this study can serve as the foundation for further exploration on mobile library.

VIII. Conclusion

This study mainly developed a Mobile Library APP System for college students, used information system success factors to verify their use statues and satisfaction with the system.

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