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Web based library system for digital age

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Abstract — The Library Management System contain a huge amount of data related to books, users, and movements, such as loans, reservations and inquiries. This stored data can already be used to obtain statistical data relating to book's areas and movements. The incorporation of Data Mining techniques to Libraries Management Systems allows to identify different kind of users and their behavior within the system, which in turn allows to offer a service more according to real information needs. The obtained benefits can improve and increase the access to information, enabling a significant advance on education. Some data mining techniques encompassed in this research include segmentation techniques to define the behavior of the users in Libraries, in addition to the use of recommendation techniques for more efficient interaction with users [1]

Keywords- Library, Books, Classification of books, QR Code, GPS.

I. INTRODUCTION

The project titled Library Management System is Library Management software for monitoring and controlling the transactions in a library. Which mainly focuses on basic operations in a library like adding new books, and updating new information, searching books and members and return books [2]. The digital content may be stored into system and accessed remotely via android application.

This project of "LIBRARY MANAGEMENT" of gives us the complete information about the library. Admin can enter the record of new books and retrieve the details of books available in the library. Admin can issue the books to the students and maintain their records and can also check how many books are issued and stock available in the library. In this project we can maintain the late fine of students who returns the issued books after the due date. Student search required book into database. System send book location in the form of section, rack, row no. Propose system provide security to the data. Every user have to register into system. After successfully registration user can access all services of propose system by login into system. Without login user can't access any service of library [3].

Throughout the project the focus has been on presenting information and comments in an easy and intelligible manner. The project is very useful for those who want to know about Library Management System [4].

II. LITERATURE REVIEW

Title: A proposal of clustering techniques applied to a Library Management System [5]

Author: Adriana Aranda Centurión, Wilfrido Inchausti

The incorporation of Data Mining techniques to Libraries Management Systems allows to identify different kind of users and their behavior within the system, which in turn allows to offer a service more according to real information needs. The obtained benefits can improve and increase the access to information, enabling a significant advance on education.

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Title: A Distributed Stream Library for Java 8 [6]

Author: Yu Chan, Andy Wellings, Ian Gray and Neil Audsley

Java 8 has introduced new capabilities such as lambda expressions and streams which simplify data-parallel computing.

However, as a base language for Big Data systems, it still lacks a number of important capabilities such as processing very large datasets and distributing the computation over multiple machines. This paper gives an overview of the Java 8 Streams API and proposes extensions to allow its use in Big Data systems. It also shows how the API can be used to

implement a range of standard Big Data paradigms. Finally, it compares performance with that of Hadoop and Spark. Despite being a proof-of-concept implementation, results indicate that it is a lightweight and efficient framework, comparable in performance to Hadoop and Spark, and is up to 5 times faster for the largest input sizes tested.

Title: Design and Implementation of a Library Management System Based on the Web Service [7]

Authors: Yujun Li , Hao Zheng , Tengfei Yang, Zhiqiang Liu.

At present, the extent of library management manner in most universities remains a manual operation. For the matter of the normal manual operation is long and inconvenience, this paper proposes a library management system is meant and enforced supported the net service. during this system, the three-layer design is utilized , applying model building language that UML carries on wants analysis and style, victimization the JSP technique to make the system front interface, and victimization SQL Server 2005 technology to make the back-end info.

So as to timely feedback of relevant info for the employment of the reader, we tend to add the Guest Book submodule to the system in implementation method. Finally, to enhance the operational potency of the info, we tend to use the hold on procedures and triggers technology to optimize the info performance. By actual take a look at, we tend to correct the system bug, and more improve the system performance

Title: Research on Library Management System for CDs Attached to Books Based on Cloud Computing [8]

Authors: Honghai Kan, Zhimin Yang, Yue Wang, Nana Qi

Nowadays, all of library management systems for CDs hooked up to books square measure running freelance: independent devices, freelance systems, and creating CD pictures severally. That brings Brobdingnagian waste of investment and labor. During this paper, we tend to plan the management system for CDs hooked up to books supported Cloud Computing.

By scrutiny and analyzing the 2 systems, we are able to see that the system supported Cloud Computing saves the value of the library greatly. Then we tend to discuss the progress of info style for the system, management module, unleash module, and therefore the computing approach of the expense.

Title: Multimedia Security: Steganography and Digital Watermarking Techniques for Protection of Intellectual Property [9]

Authors: Chun-Shien Lu.

Digital watermarking techniques are developed to safeguard the copyright of media signals. This chapter aims to supply a universal review and background concerning the watermarking definition, thought and also the main contributions during this field. The chapter starts with a general read of digital knowledge, the net and also the product of those 2, namely, the transmission and also the e-commerce.

Then, it provides the reader with some initial background and history of digital watermarking. The chapter presents an in depth and deep literature review of the sector of digital watermarking and watermarking algorithms. It additionally highlights the long run prospective of the digital watermarking

Title: Open Knowledge on e-Infrastructures: the BELIEF Project Digital Library [10]

Authors: Donatella CASTELLI 1, Simon J E TAYLOR2, Franco ZOPPI1.

The BELIEF Project could be a Coordination Action funded by the eu Commission within the context of the FP6 and FP7 Programs. It aims to form a platform wherever e-Infrastructures suppliers and users will collaborate and exchange information, guaranteeing that e-Infrastructures area unit developed and effectively used worldwide, filling the gap separating the e-Infrastructures suppliers from the users, and so contribute to the emergence of a competitive knowledge-based economy. To form this activity among multi-disciplinary communities, BELIEF created a one-stop-shop providing a Portal and a Digital Library with an enormous range of eInfrastructures open access publications.

The Digital Library offers uniform access to multimedia system documentation providing unendingly updated info on eInfrastructures-related comes, initiatives and events. The contents area unit harvested from completely different sources, like comes internet sites, repositories and databases. The deciliter - enforced on high of the OpenDLib Digital Library Management System - provides services to support the submission, description, searching, browsing, retrieval, access, preservation and visual image of multimedia system documents. Though designed to fulfill the requirements of the e-Infrastructures community, the technology adopted by BELIEF will be simply tailored to fulfill the knowledge and cooperative desires of different scientific communities.

Title: Tagging Based Evolving Recommendation System for Digital library System [11]

Authors: Punit Gupta, Ravi Shankar Jha.

Recommendation systems area unit won't to cluster the information and suggest the users with all connected things to users. These systems have shown an excellent edges within the field of e-commerce which give details of user with all connected data. Several similar models area unit been projected for system.

However these models can't be directly fitted into the sphere of digital library system to amass the advantages of advice system. Thus to beat this we've projected a tagging based mostly evolving recommendation system for digital library managements system for user and library admin.

III. PROBLEM STATEMENT

All libraries, large or small and regardless of type, perform the same functions of purchasing, cataloging and loaning materials. Libraries are very record-intensive; that is, they must maintain acquisition records and bibliographic data of many specific materials. They also must record multiple transactions to keep track of each patron's and material's circulation status. The purpose of the Library Management system is to allow for storing details of a large number of books, magazines, Journals, thesis and allow for add, search, borrow, return facilities separately to administrator/Librarian, staff and students. Different privileges are given to different types of users. Since the system is a manual operation like searching book, issue book, returning book, is time consuming. The procedure of modification and deletion with the new transaction requires more man power. This causes delay in the process [12].

IV. PROPOSE SYSTEM

We have to implement Library management system .In that system 2 main module. first is digital system in digital system we have to search book, paper publication, Maxine system will perform operation and give result to user and user will download this book .digital system also maintain history of each user.

Is physical system first user will search the book, paper publication and Maxine system will show this book with exact location of this book .then user will issue this book and system will generate QR code to this particular user. System also maintain history of each user .if user book is expire then system will automatic alert to this particular user and calculate fine. User also renew this book.

V. PROPOSE SYSTEM

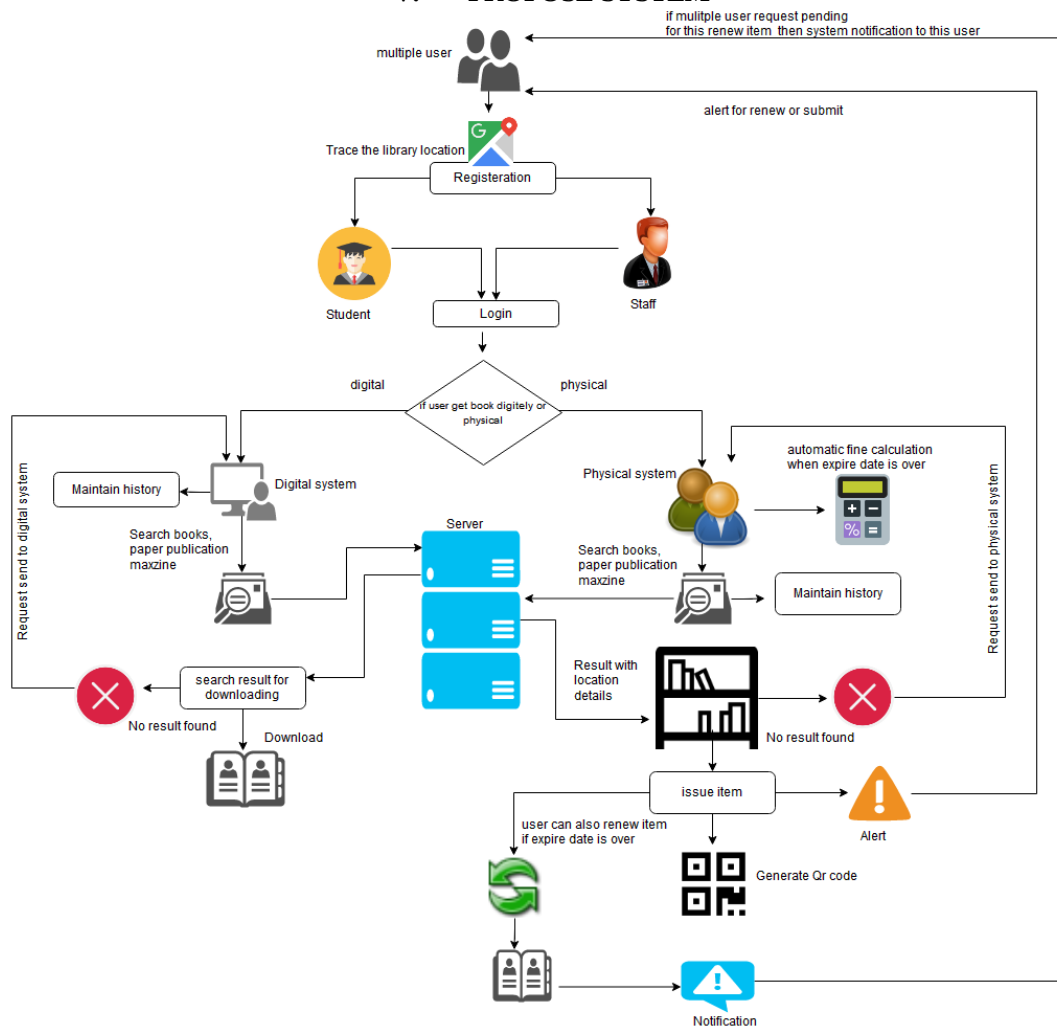


Figure 4.1. System Architecture

VI. ADVANTAGES

- We have to maintain huge record dynamically
- System alert automatic when expire date is completed
- System will calculate fine automatically
- System generate QR-Code for particular user

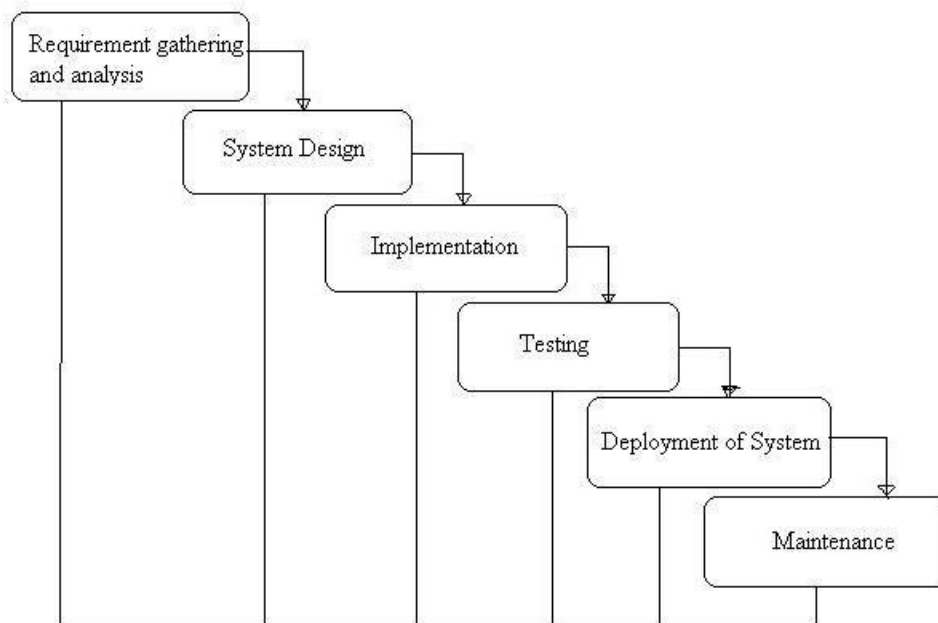
VII. APPLICATION

- Propose system could be used in different colleges by student and faculty to search books and maintain all records. Propose system could be used in different university by student, teacher, and exam paper setter authority.
- Propose system could be used in different government libraries by librarian and general public (readers)
- Propose system could be used in different private libraries by librarian and general public (readers).

VIII. METHODOLOGY

We are using waterfall model for our project.

General Overview of "Waterfall Model"



1. Requirement gathering and analysis:

In this step of waterfall we identify what are various requirements are need for our project such are software and hardware required, database, and interfaces.

2. System Design:

In this system design phase we design the system which is easily understood for end user i.e. user friendly.

We design some UML diagrams and data flow diagram to understand the system flow and system module and sequence of execution.

3. Implementation:

In implementation phase of our project we have implemented various module required of successfully getting expected outcome at the different module levels. With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

4. Testing:

The different test cases are performed to test whether the project module are giving expected outcome in assumed time.

All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

5. Deployment of System:

Once the functional and non-functional testing is done, the product is deployed in the customer environment or released into the market.

6. Maintenance:

There are some issues which come up in the client environment. To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment. All these phases are cascaded to each other in which progress is seen as flowing steadily downwards like a waterfall through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name "Waterfall Model". In this model phases do not overlap.

IX. CONCLUSION AND FUTURE SCOPE

We analyzed the solutions currently available for the implementation of library management system. The discussed technologies are close to being standardized, and industry players are already active in the production of devices that take advantage of these technologies to enable the applications of interest. This application can be used by any Library to automate the process of manually maintaining the records related to the subject of maintaining the stock and Book Issues. It's totally dynamic system [9]

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