BSIT FINAL PROJECT PROPOSAL

Akhuwat Pearl's of Wisdom Library Management System

Term of Registration: Fall 2024

Presented by:

Registration No:	Name:
2020-AMK-04	Kashif Mehmood Jilani
20F-BSIT-17	Muhmmad Asamullah Ulfat

Department of Information Technology

Akhuwat Institute Kasur

Project Topic

Developing a Management System for Akhuwat Pearls of Wisdom Library College Kasur.

Project Advisor

Dr Bilal Shoaib Khan

Particulars of the students:

Sr. No	Registration#	Name in Full	CGPA	Signatures
1	2020-AMK-04	Kashif Mehmood Jilani	2.92	
2	2020-AMK-14	Muhmmad Asamullah Ulfat	3.30	

Advisor's Consent

I Prof./Dr./Mr./Ms. **Dr Bilal Shoaib Khan** am willing to guide these students in all phases of above-mentioned project as advisor. I have carefully seen the Title and description of the project and believe that it is of an appropriate difficulty level for the number of students named above.

Note:

Advisor cannot be changed without prior permission of the Department and the duration for completion of the Project is 2 regular semesters (approx.) from the date of Registration of Project.

Signatures and Date

Advisor

Abstract / Executive Summary

Library management systems (LMS) are generally designed to digitalize the operations of library. It also handles the students accounts, book purchasing, archives handling, budgeting, and auditing. In Akhuwat institute, a purpose build library has been established in cooperation with the chughtai lab since 2020. In this particular library, an open source Koha software is working. This software has some drawbacks like limited integration options, lack of commercial support or customization, budgeting records, complexity issues, no admin and audit accounts, limited archives management, accessibility issue without internet, limited vendor support. There is a dire need of Library management system for the Akhuwat institute Kasur. So, in order to cope up this particular need we should develop a web-based application named as "Akhuwat Library management system." This project will be ensured efficient management of library operation such as user authentication, fine management, auditing capabilities, vendor, and archive management. It consists of book inventory in Portable Document Format upload option as well as provide user-friendly interface with different dashboard such as administration, librarian, and user(students/Teachers). We need to enhance library operations, improve user experience, and increase the efficiency of resource management.

Introduction and Background

The Library Management System (LMS) is a web application for increasing the efficiency of library operations. The system includes various features to meet the needs of administrators, librarians, and users. The home page serves as an entrance to the system and allows easy navigation to important sections. The "About Us" page provides detailed information about the library's mission. Uploading digital PDF books to the system creates a large and accessible collection. The "Contacts" page ensure smooth communication. The login page is divided into three sections: Administrator Login, Librarian Login, and User Login. Admin dashboard features include librarian and student management, book inventory management, book tracking, fine management, digital book management, book recommendations, audits management, and password reset requests. The admin dashboard allows administrators to add and manage librarian and student accounts, categorize, and manage books, monitor book operations, manage fines, manage digital books, and conduct audits. Librarians, on the other hand, have a customized dashboard for student and book management, book operations, fine management, digital books, book recommendations, audits, and password reset requests.

The user dashboard provides users with a personalized area to view and update their profiles, request new book editions, manage fines, access an online PDF book library, and view reports. The college uses a traditional system which has limitations in managing resources efficiently. The purpose of this project is to provide an introducing digital solution to these problems. The significance/meaning of this problem lies in the need to improve and further develop library operations/activities and provide better services and assistance to students and staff. By developing this system, we aim to make easier resource management, make processes more efficient, and ultimately improve the overall make a better experience for library users.

Statement of the Problem

There are some problems faced by the AIK librarian while using KOHA like limited integration options, lack of commercial support or customization, budgeting records, complexity issues, no admin and audit accounts, limited archives management, accessibility issue without internet, limited vendor support. In our system all the above-mentioned problems will be managed properly in consultation of the librarian.

Objective(s) / Aim(s) / Target(s)

The research objectives of this final project aim to contribute to the field of library management through the development of a comprehensive digital library system. The aim of the project is to create a user-friendly platform with features such as a homepage and an "About Us" section and the ability to download digital PDF books. The system provides user authentication with different roles such as administrator, librarian, and user, each with specific functions. The admin dashboard contains information about librarians, students, book inventory, book transactions, fines, and email. Book management, book recommendations, auditing and password reset requests. Librarian and patron dashboards provide functionality tailored to their respective roles. Technologies used in this project include HTML/CSS and JavaScript for front-end development and PHP for back-end. End of development and databases in MySQL. The research objectives/targets of our project are to contribute to the improvement of library management practices by providing a digital solution that enhances resource management, user experience, and overall increase the efficiency of system at Akhuwat College Kasur.

Completeness Criteria

Features:

1) Home Page:
2) About us
3) Link with Digital Library:(journals & Other Books) just redirection to other website
4) Contact Us:
5) Login Page
      (1) Admin login
      (2) Librarian login
      (3) User login

  1) Admin dashboard:
    ➢   Librarian
         • Add and Manage Librarian account
    ➢   Students
         • Add and Manage Students account
    ➢   Book inventory
         • Add books and Manage category
         • Add and Manage Books
    ➢   Book operations
         ✓ Issue and return books record
         ✓ damage and lost books record
         ✓ Report of books
    ➢   Manage fine

- ✓ Add and Manage fine and generate Report
- ➢ Digital books managements
    - ✓ Book list and Upload pdf books
- ➢ Books Recommendation
    - ✓ Add and Mange books recommendation
- ➢ Audits
    - ✓ Books categories
    - ✓ Books Record and report
    - ✓ Digital library record
    - ✓ Fine management record
- ➢ Password reset request
    - ✓ Pass reset request for librarian and students

2) Librarian dashboard
- ➢ Students
    - • Add and Manage Students account
- ➢ Book inventory
    - • Add books and Manage category
    - • Add and Manage Books
- ➢ Book operations
    - ✓ Issue and return books record
    - ✓ damage and lost books record
    - ✓ Report of books
- ➢ Manage fine
    - ✓ Add and Manage fine
    - ✓ Report
- ➢ Digital books managements
    - ✓ Book list
    - ✓ Upload pdf books
- ➢ Books Recommendation
    - ✓ Add and Mange books recommendation
- ➢ Audits
    - ✓ Books categories
    - ✓ Books Record and report
    - ✓ Digital library record
    - ✓ Fine management record
- ➢ Password reset request
    - ✓ For students

3) User dashboard
- ✓ Profile
    - • View
    - • Updates
- ✓ Request for issue a new book
- ✓ Manage fines
- ✓ Online library for pdf books
    - • View and Downloads
- ✓ Manage report

Challenges

- • Complete liaison with the library.

- • Software authentication (Latest paid version might be required for database integration)

- • Stable local network required within campus/specially within library for implementation .

- Payment channel may be required for online order.
- Security issues.

Knowledge Areas Required

Key knowledge areas that include during the development of project are software engineering, database management using MySQL, and user interface design HTML and CSS. PHP is required for the connection with the database.

Software engineering: Creating and executing the Library Management System for Akhuwat collage Kasur.

Database management: Planning, Designing, managing, and dealing with the database for book stock management, vendor management, achieve handling user accounts and records management, and transactions for book buying.

Web development: Creating an easy to use and user-friendly and attractive web interface for administrators, librarians, and users.

Algorithms and data structures: Implementing and putting effective algorithms for recommendation systems, fine management, and book operations.

Learning Outcomes

- Capability in web development technologies such as HTML, CSS, and JavaScript.
- High level and Advanced skills in database management/administration and SQL queries.
- Familiarity with the principles and practices of software engineering.
- Understanding of user interface design and concepts.
- Understanding of algorithms and concepts how they can be used in book inventory management and fine calculation
- Ability to conduct and lead testing and debugging processes for software validation.
- Experience in project management and teamwork through cooperative development efforts.
- Ability to understand the digitalization of the library.

Nature of the End Product / Research Outcomes

The highlighting featuring are user-friendly and easy to understand interface for administrators, librarians, and users. In order to improve functionality and efficient the book inventory management algorithms and enhance communication functionality. This system aims to solved challenges and difficulties recognized in the problem statement, providing a centralized, technologically advanced solution to library operations. The project's goals include improving and further developing resource management and user experience at Akhuwat College Kasur. Participants are expected to acquire useful and valuable skills in web development, database

management, and software engineering. Overall, the Library Management System is designed to help both the university community and library staff by offering a modernized and efficient solution.

Related Work / Literature Survey / Literature Review

The concept of academic information services emphasizes the potential of networked information resources for scholarly communication, necessitating collaboration among libraries, scholars, computing centers, and university presses.

Barriers to collaboration, including clashes of organizational cultures, personal incompatibilities, and differing approaches to change, highlight challenges in this endeavor. Library managers can mitigate these barriers by developing suitable organizational structures, selecting collaborative-minded staff, and demonstrating leadership in fostering organizational flexibility, thereby facilitating successful collaboration in academic information systems [1].

while exploring factors influencing the adoption of digital library systems in developing countries, applying the Technology Acceptance Model (TAM). Analysis of data from 16 institutions across Africa, Asia, and Central/Latin America reveals perceived ease of use significantly impacts perceived usefulness, influencing behavioral intention to use. It emphasizes the need to consider external variables in system design to align with local contexts, crucial for successful adoption in developing countries [2].

By the use of open-source integrated library systems in Nigerian academic libraries, focusing on Koha software's capabilities and global relevance. Conducted with a descriptive survey design, it sampled 25 institutions, revealing a growing adoption of free and open-source software amidst challenges like funding and managerial support. The findings underscore the practical benefits of open-source solutions for academic libraries globally, highlighting their flexibility and user-friendly nature in information retrieval [3].

By implementing Koha Integrated Library Management Software at Babcock University Library, Nigeria. Utilizing a survey design with questionnaires, experiences of 17 librarians and 24 technical staff were gathered, focusing on data migration strategies and challenges faced. Findings highlight the need for adequate training, addressing challenges like erratic power supply and insufficient man power. Recommendations include incorporating ILS courses and organizing seminars, emphasizing effective collaboration between ICT units and libraries. The study serves as a practical guide for libraries, especially in Nigeria, seeking to implement automation software like Koha[4].

University of Guyana Library's adopted Koha, an open-source software, in 2007 marked its first implementation in Guyana, driven by the need to modernize its automation approach. Koha, renowned for its worldwide use, was selected after thorough research, highlighting its role in shaping library automation regionally. The study discusses the selection process and outcomes of implementing Koha 3.8 LMS, displaying its benefits such as flexibility and collaboration promotion, alongside challenges like ongoing expenses. [5].

Deliverables / Work Breakdown Structure

1. **Planning & Analysis (Jan 1, 2024 - Feb 26, 2024):**

• Gather requirements from stakeholders.

• Analyze existing systems and identify necessary features.

• Define project scope and objectives.

2. **Design (Feb 27, 2024 - May 6, 2024):**

• Design user interface for Home Page, About Us, Contact Us, and Login Page.

• Design database schema for storing user accounts, book information, and transaction records.

3. **Development (May 7, 2024 - Sept 9, 2024):**

• Implement Home Page, About Us, Contact Us, and Login Page functionalities.

• Develop Admin dashboard for managing librarians, students, and book inventory.

• Develop Librarian dashboard for managing students, books, and operations.

• Develop User dashboard for profile management, book requests, fines, and online library access.

4. **Testing (Sept 10, 2024 - Nov 18, 2024):**

• Perform unit testing for each module.

• Perform user acceptance testing with stakeholders.

5. **Deployment & Training (Nov 19, 2024 - Dec 30, 2024):**

• Deploy the system in the college environment.

• Provide training sessions for administrators, librarians, and users on how to use the system effectively.

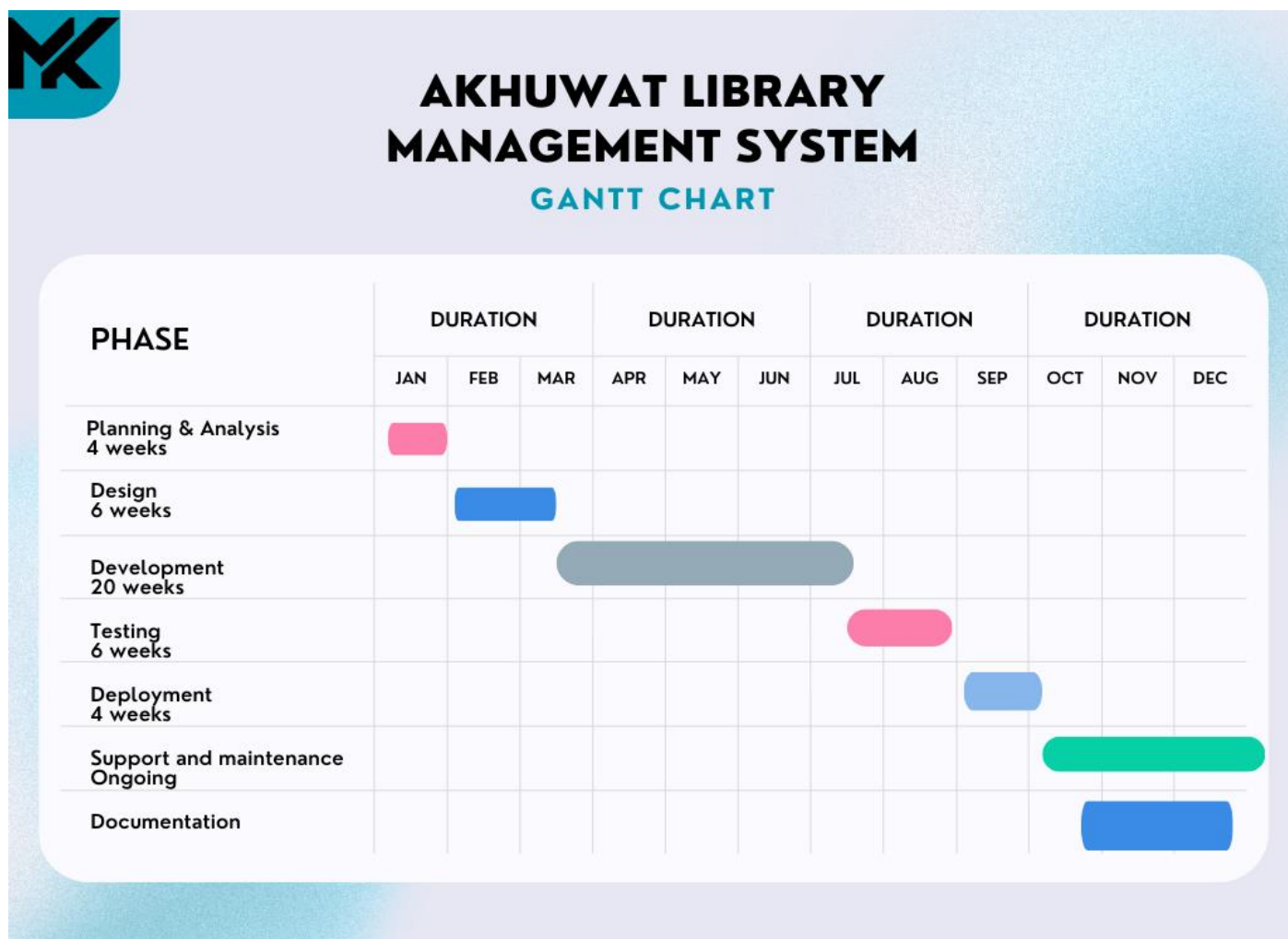6. **Maintenance & Support (Jan 1, 2025 - Dec 31, 2025):**

• Provide ongoing maintenance and support to address any issues or updates required.

• Monitor system performance and user feedback for continuous improvement.

Project Plan / Project Schedule / Project Timetable / Project Calendar

Gantt Chart for Library Management System (One-Year Duration)

Phase	Duration	Start Date	End Date
Planning & Analysis	8 weeks	Jan 1, 2024	Feb 26, 2024
Design	10 weeks	Feb 27, 2024	May 6, 2024
Development	18 weeks	May 7, 2024	Sept 9, 2024
Testing	10 weeks	Sept 10, 2024	Nov 18, 2024

Deployment & Training	6 weeks	Nov 19, 2024	Dec 30, 2024
Maintenance & Support .	Ongoing .	Jan 1, 2025 .	Dec 31, 2025 .

Resources Required:

- Software development systems: Improvement instruments and programming including Coordinated Advancement Conditions (IDEs), information base administration frameworks, and form control frameworks.
- Work stations to implement in localhost
- Visual studio.
- Xampp for localhost sever

References/Bibliography

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