

SOFTWARE DESIGN
FINAL PROJECT

Library Management System

LIBTECH

Presented by **PSAJ ARCHIVE**

ABOUT

LibTech offers a comprehensive solution that streamlines library workflows, enhances user experiences, and facilitates efficient information management. With a focus on simplicity, usability, and advanced functionalities, LibTech is set to transform the traditional library experience into a seamless digital journey.



FEATURES & BENEFITS

Features

Comprehensive Management

User-Friendly Interface

Efficient Cataloging System

Seamless Circulation System

Generates Reports and Analytics

Benefits

LibTech automates routine tasks, such as cataloging, circulation, and reporting, freeing up valuable time for librarians to focus on providing personalized services and engaging with students or faculty work.

With LibTech, libraries can optimize their resources, ensure timely replacements or repairs, and provide a curated collection that meets the evolving needs of their patrons.

LibTech is designed to adapt and evolve with changing technology and user needs, ensuring that libraries can embrace future innovations and stay at the forefront of information management.

App BUILDING TOOLS



Qt Creator



SQLite Database

SAMPLE SCREENS

The image shows a screenshot of the LIBTECH Library Management System application. On the left, there is a logo for 'LIBTECH Library Management System by PSAJ Archive' with a version number 'V. 1.0' below it. A red button labeled 'Start Application' is also visible. The main interface features a dark header with the 'LIBTECH' logo and 'LIBRARY MANAGEMENT SYSTEM' text. Below the header is a large title 'SAMPLE SCREENS'. The central part of the screen displays a 'WELCOME BACK!' message and two large statistics: 'TOTAL NUMBER OF BOOKS' (2258) and 'TOTAL NUMBER OF STUDENTS' (4). To the right is a 'LIST OF GENRES' sidebar with a scrollable list of categories.

LIBTECH
Library Management System
by PSAJ Archive

V. 1.0

Start Application

LIBTECH
by PSAJ Archive

WELCOME BACK!

CATALOG SYSTEM

- Add Book
- Edit Book

CIRCULATION SYSTEM

- Issue Book
- Return Book
- Book List

USER MANAGEMENT

- Add Students
- Edit Students
- View Students

TOTAL NUMBER OF BOOKS
2258

TOTAL NUMBER OF STUDENTS
4

LIST OF GENRES

- Arding Panlipunan
- Araling Panlipunan
- Art
- Arts
- Atlas
- Business
- Children's Book
- Cooking
- Dictionary
- ESP
- Encyclopedia
- English
- Filipino
- Filipino Literature
- Folk Culture
- Geography
- HELE
- Handbook
- History
- Home Values

SAMPLE SCREENS

ADD BOOKS

BOOK DESCRIPTION

ID:	<input type="text"/>
BOOKNAME:	<input type="text"/>
AUTHOR:	<input type="text"/>
GENRE:	<input type="text"/>
QUANTITY:	<input type="text"/> 0
PUBLISHER:	<input type="text"/>
DATE:	01/01/2000 <input type="button" value="▼"/>

Add Book Close

ISSUE BOOK

Book ID	<input type="text"/>	Search Book
BOOK TITLE:	<input type="text"/>	
AUTHOR:	<input type="text"/>	
GENRE:	<input type="text"/>	
IS THIS BOOK AVAILABLE?		
STUDENT ID:	<input type="text"/>	Search Student
STUDENT NAME:	<input type="text"/>	
NOTE:	<input type="text"/>	
DATE ISSUED:	<input type="text"/> 01/01/2000	<input type="button" value="▼"/>
RETURN DATE:	<input type="text"/> 01/01/2000	<input type="button" value="▼"/>

Issue Book Remove Issue Close

1	0	2	Member ID	Issuance
2000-01-0				

SAMPLE SCREENS

RETURN BOOK

BOOK ID:

STUDENT ID:

SORT BY:

AUTHOR:

STUDENT NAME:

GENRE:

NOTES:

DATE ISSUED:

RETURN DATE:

Book ID	Member ID	Issuance Date	Return Date	Notes	Status
1 0	2	2000-01-01	2000-01-01		Issued

BOOKS LIST

1	Pilipino-Pilipino
2	Dictionary English-Filipino (Revised and Enlarged)
3	Diksyunaryong Sentiyal ng Wikang Filipino
4	The Grolier International Dictionary Volume 2
5	Diksryunaryo Filipino
6	Pre-War Encyclopedic Directory of the Philippines
7	Webster Illustrated Contemporary Dictionary
8	The World Book Dictionary
9	Shorter Oxford English Dictionary

ID: B1A0007

BOOKNAME: Webster Illustrated Contemporary Dictionary

AUTHOR: Sidney I. Landau

GENRE: Dictionary

QUANTITY: 6

PUBLISHER: J.G Ferguson Publishing Company

DATE PUBLISHED:

DESCRIPTION: The Webster Illustrated Contemporary Dictionary is a comprehensive reference tool designed for the modern reader. It features over 50,000 entries, including the latest words and phrases from contemporary English, as well as classic vocabulary and terminology. The dictionary provides clear and concise definitions, along with pronunciation guides, synonyms, and antonyms. The book's

SEARCH:

SORT BY:

IMPLEMENTATION PROCESS

Project Start Date : 05/03/2023

Project End Date : 05/23/2023

Implementation Start Date : 05/07/2023

Implementation End Date : --

Target School : Legarda Elem. School

Data Gathering Start Date : 05/15/2023

Data Gathering End Date : 05/19/2023

Deployment Date : 06/05/2023

Data Gathered:

3.1K

Books

71

Genres

5K

Students

8

Library/ICTO

Faculty

SOFTWARE DESIGN
FINAL PROJECT
DOCUMENTATION

LETTERS



PAMANTASAN NG LUNGSOD NG MAYNILA
(University of the City of Manila)
Intramuros, Manila
COLLEGE OF ENGINEERING AND
TECHNOLOGY COMPUTER ENGINEERING
DEPARTMENT



May 09, 2023

RITA E. RIDDLE, CESO V
Schools Division Superintendent
Through: Pedro M. Arao
Asst. Division Superintendent
SDO Manila

Madam :

Our team is writing to request permission to conduct research in Legarda Elementary School, regarding its Library Management System. As a 2nd year Bachelor of Science in Computer Engineering of Pamantasan ng Lungsod ng Maynila, we are interested in exploring how the library is being managed and how it can be improved to better serve the needs of the students and staff.

Our group believes that this research can benefit the school community by providing valuable insights into the current practices and identifying areas for improvement. We also believe that this research can contribute to our personal growth and development, as it will provide us with an opportunity to apply the knowledge and skills the team has acquired in the classroom to a real-world setting.

To conduct this research, we plan to use a combination of methods, including interviews, data gathering, and observation. We will ensure that all data collected will be kept confidential and that the identities of the participants will be protected.

The team is aware that conducting research in a school setting requires the approval of the school administration. Therefore, we are requesting your permission to carry out this research in the school and give the team access to the school's library. We assure you that the group will adhere to all school policies and guidelines regarding research and that we will make every effort to minimize any disruption to the school environment.

Thank you for your time and consideration of our request. We look forward to hearing from you soon.

Sincerely,



Maritonee Danielle I. Cardenas
Project Manager

Noted by
Prof. Ronaldo A. Tan
Research Advisor



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(University of the City of Manila)
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Maritonee Danielle I. Cardenas
Project Manager

Noted by
Prof. Ronaldo A. Tan
Research Advisor



EDITA F. LOPEZ



Republic of the Philippines
Department of Education
National Capital Region
Division of City Schools
MANILA

May 9, 2023

MS. EDITA F. LOPEZ
Principal
Legarda Elementary School
Manila
Dear Ms. Lopez,

Permission to conduct study is hereby granted to:

Name of Researchers
Maritonee Danielle I. Cardenas, et al.
Pamantasan ng Lungsod ng Maynila
School/University

To conduct study: "Library Management System"
Purpose

1. The conduct of the study shall be in consultation with the Principal/s concerned using various modalities. (Proper scheduling is requested.)
2. Time-on-Task policy of DepEd shall be adhered to.
3. Resources of the school shall not be used for this purpose.
4. Confidentiality of the respondents is ensured.
5. This Office requests a copy of the final Research Output at the end of the term of study

Kindly extend to them the usual cooperation and hospitality.

Thank you.

Very truly yours,

For the Superintendent:

ATTY. ANTONIO C. CASANGKAPAN
Assistant Schools Division Superintendent

SOFTWARE DESIGN
FINAL PROJECT
DOCUMENTATION

LIBRARY



SOFTWARE DESIGN
FINAL PROJECT
DOCUMENTATION

DATA GATHERING



FUNCTIONAL REQUIREMENTS

User Login

Catalog Search

Resource Borrowing

Resource Return

User Profile Management

Reporting and Analytics

Dependencies

- Ensure that the User Management subsystem is fully implemented and functional before enabling login functionalities.
- The Catalog Management subsystem should be in place and populated with relevant data for the catalog search functionality to provide accurate results.
- The Circulation subsystem should be operational to handle borrowing and returning of resources.
- The Reporting and Analytics subsystem requires data from other subsystems, so those subsystems should be implemented and functioning properly.
- Take into account performance considerations, such as optimizing search functionality and generating reports efficiently.

NON-FUNCTIONAL

Performance

Security

Scalability

Reliability

Usability

Compatibility

Dependencies

- Performance and scalability considerations should be taken into account during the design and implementation of each subsystem.
- Security measures should be implemented in conjunction with the login functionalities.
- Reliability measures should be in place to handle system failures and ensure data integrity.
- Usability considerations should be incorporated into the design of the user interface and user workflows.
- Compatibility testing should be conducted on different platforms and browsers to ensure a seamless user experience.

DEPLOYMENT IMPLEMENTATION

Environment Check-Up

Build and Packaging

Test Deployment

Production Deployment

DEPLOYMENT IMPLEMENTATION

Configuration and Customization

Data Migration

Training and User Adoption

Ongoing Support & Maintenance

Completion CRITERIA

FUNCTIONALITY TESTING

Feature	Testing Platform	Testing Device	Testing Result
Adding Books	Windows 10	Desktop	Passed
Adding Students	Windows 10	Desktop	Passed
Issuing a book	Windows 10	Desktop	Passed
Deleting Books	Windows 10	Desktop	Passed

PERFORMANCE TESTING

Metric	Goal	Result
Average Page Load Time	< 3 seconds	2.2 seconds
Concurrent Book Capacity	5000 books	3132 books
Concurrent User Capacity	8 users	8 users

Completion CRITERIA

SECURITY TESTING

Metric	Objective	Test Date
Authentication	Verify that the application requires users to authenticate before accessing sensitive data or functions.	05/26/2023
Penetration Testing	Attempt to gain unauthorized access to the application to identify potential vulnerabilities.	05/26/2023

USABILITY TESTING

Metric	Rating (1-5)
How easy was it to search for a book?	5
How easy was it to add books to the application?	5
How visually appealing was the application?	5
How satisfied are you with the application?	5

USER TRAINING

Training Objectives	Methods	Outcomes	Feedback (1-5)
Provide an overview of the application and its features	Online training and hands-on training	Users were able to effectively utilize the application	--
Demonstrate how to manage the books using the available features	Online training and hands-on training	Users were able to manage the circulation and cataloging of books	--

Completion CRITERIA

DOCUMENTATION

Documentation	Status	Completion Date
User Manual	In Progress	-
Technical Manual	In Progress	-
Installation Guide	In Progress	-

DEPLOYMENT PLAN

Task	Department	Deadline
Conduct Functionality Test	Development Team	05/27/2023
Conduct Performance Test	Performance Team	05/25/2023
Fix any identified issues	Development Team	Ongoing

Corrective Maintenance	Preventive Maintenance	Adaptive Maintenance	Perfective Maintenance
1. Identify and prioritize reported issues	1. Regularly check for new hardware and software updates	1. Gather user feedback to identify evolving needs	1. Analyze user feedback to identify areas for improvement
2. Reproduce the issue and determine its root cause	2. Test compatibility with new hardware and software versions	2. Analyze usage patterns to identify areas for improvement	2. Prioritize feature requests and improvements
3. Develop and test a fix for the issue	3. Conduct regular maintenance on hardware and software components	3. Implement changes to meet changing user needs	3. Develop and test new features or improvements
4. Release a patch or update to address the issue	4. Monitor user feedback to identify areas for improvement	4. Monitor device and operating system changes to ensure app remains usable	4. Release updates to improve app functionality and usability
5. Communicate the fix to the user base to ensure they are aware of the changes	5. Implement security measures to prevent potential security breaches	5. Test changes thoroughly to ensure they work as expected	5. Gather user feedback on the changes to ensure they meet expectations

MAINTENANCE

To ensure that the Lib Tech app is maintained as functional, responsive to user needs, and can be kept in good working order and optimized for performance, the following specific procedures will be used in each type of maintenance:

1. Schedule Regular Updates
2. Test New Updates
3. Check Compatibility
4. Monitor Application Performance
5. Monitor User Feedback
6. Keep Documentation Up-to-Date

LIBTECH

DEMONSTRATION

Thank You
SO MUCH!

Presented by **PSAJ ARCHIVE**