QR CODED QUEST: A LIBRARY MANAGEMENT INDOOR POSITIONING SYSTEM WITH QR CODE INTEGRATION FOR BRIDGING BOOK CATALOGS AND BIBLIOGRAPHIC RECORDS

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INTRODUCTION

The LMIPS is a timely response to these pressing needs and will serve as an encouragement for self-guided exploration within the library. The IPS with QR codes will also help librarians improve their performance. This study will also benefit other schools by providing them with ideas and knowledge on how to improve their performances. This method is for seamless navigation between the digital and physical sectors for an improved experience for an overall experience of users. The system is open to all students of CAHS from High School to Senior High. The Library Management Indoor Positioning System (LMIPS) is a multi-faceted platform that combines library catalog features with basic indoor positioning via QR codes. The LMIPS caters to both the High School and Senior High School students of Cayetano High School (CAHSArellano) The system was developed with a range of development tools including Figma, Tailwind for faster designing of pages, Vuejs for frontend development, Laravel for backend development, and Xampp.

METHOD

The LMIPS system was designed to meet the needs of the Librarians of CAHS. The team evaluated the functionality and usability of the features implemented. They also evaluated the quality of the website. The results of the evaluation are as follows:1. Shelves Data Dictionary Table. The unique identifier of the labeled name of a shelf. The number of copies per book that the library has. The name of the book that was modified. The date and time when the number of racks was added to the shelves. The LMIPS was deployed to the CAHS library in September 2013. The system was tested using the Likert scale to measure the execution of the system. The project development process was divided into several phases for the project team to achieve the goals of designing and developing the system, shown in Table 11. The respondents were given an evaluation form and were requested to evaluate the system using Google Forms. The results were then evaluated to assess the functionality of the LMI PS. The team monitored and evaluated its performance to address issues and make necessary adjustments as needed. The system comprises an admin portal and a public user portal with both serving distinct functions. It allows librarians to manage the library?s collection, assign codes to books, and assign data. The system is a web application that necessitates knowledge of Figma, HTML, CSS, Laravel, Vue.js, MySQL, VS Code, and XAMPP. The actors that interact with the system are the Librarian and the Students. The team outlined the UI of the library's framework, making sure that it isintuitive, organized, engaging, and supports the defined search criteria. The development team was able to conclude thatthere were no errors or issues that arose. that was modelled to present the outside world. The development team concluded that there were no issues or errors that arose in the design of the game. The game was designed to present an outside view of the U.S. and the world at large. It was also designed to show how the world would look from a different perspective. It is not intended to be a complete picture of the world as a whole.

RESULTS

The Admin Portal is solely for the authorized admins and personnels who can access and manage the student details and book bibliographic records of the book collections of the library. The Librarian Admin Portal has the options add, edit, and delete, whereas the account created for the staff does not have any functionality for that. The Public Student Portal supports all browsers of smartphones, iOS, and the system can add and edit the number of racks per shelf. The users can click on a book to display it to display its location and their location within the library premises. The system provides an extra layer of security for handling multiple users. The system can monitor and record the actions made by the admin users to every book record in the database. The librarian has the authority to add new administrators once s(he) is logged-in to the system. If an Admin clicks on the ?Export? call-to-action button, s(he) will be able to download the PDF File of the Book Catalog data subset based on their applied filters. The LMIPS project description, project structure, project test results, project capabilities and limitations, and project evaluation results of the study are presented. The system provides a table showcasing the audit trail history of each book entry for a comprehensive record of the book-related activities that happened. It also provides a Dashboard Tab that displays the number of books that they currently have, the donated ones, and how many students have registered in the public portal. The project was completed in 100% of two test cases. The public portal is open and can be accessible to all students of CAHS at any year level. A drop-down ?Year Level? button on top to filter and focus on specific student classifications. The system can automatically generate a readable QR Code for a book containing bibliographic details. The Admin Portal can be handled only by desktop or laptop. The QR Code generated by the system is accurate. This indicates that the system meets the required functions and specifications. This section was conducted using the ISO 25010 standard criteria for software quality.

DISCUSSION

The LMIPS system was rated Highly Acceptable in the Functionality Suitability, Reliability, Usability, and Performance Efficiency categories. The system was also deemed Highly Accepted in the Security Aspect. The level of acceptability for the developed system was assessed based on the ISO 25010 software standards. The study obtained the following recommendations to improve the system?s benefits. The recommendations are presented in the following chapters: Chapter 5: The summary of findings in the testing and deployment, conclusions, and recommendations. The Library Management Indoor Positioning System was able to provide a real-time update of the locations of the books even if relocations or changes are made by the library. The Qr Coded Quest: A library management indoor positioning system with QR code integration for bridging book catalogs and bibliographic records was developed combining the following modules: Streamline the take home book borrowing transactions within the libraries by including it in the system?s functionality. Allow the system to be responsive and accessible to various screen sizes of devices.