

WEB-BASED INVENTORY MANAGEMENT SYSTEM FOR FOOD AND BEVERAGES INDUSTRY WITH NOTIFICATION FEATURES

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ABSTRACT - This study addresses the lack of management information regarding sales and inventory in the food and beverage sector. Currently, many shops and restaurants still rely on outdated methods for inventory and sales management. To overcome this challenge, a web-based inventory management system tailored specifically for the food and beverage industry has been developed. This system allows food and beverage businesses to effectively track and manage perishable goods by monitoring expiration dates, setting reorder points, and accessing inventory levels remotely. Moreover, it enables companies to manage multiple locations, track suppliers and deliveries, and generate sales and inventory movement data. Implementing this technology can enhance sales, reduce food waste, and improve inventory management efficiency. The study focuses on stock and sales management in the food and beverage industry, utilizing information from relevant books, journals, and articles on web-based development for this sector. Through analysis, the research identifies crucial factors for designing a successful web-based inventory system, such as utilizing server-side scripting languages and databases for stock and sales management. Additionally, the study highlights the practicality of incorporating notification functionalities into the web-based system. Overall, the research aims to contribute to the growth of the food and beverage industry and provides insights into the strategic design approach for effective web-based inventory systems.

Keywords: web-based, inventory, System Development Life Cycle (SDLC), notification

1. INTRODUCTION

The food and beverage industry are a vast and constantly evolving sector, encompassing various products and specialized equipment. Effective inventory management within this industry can be challenging due to the need to track stock levels, monitor sales, and manage resources. Inefficient manual methods of inventory management, such as using pen and paper or relying on WhatsApp groups, often lead to errors, miscalculations, and delays. To address these issues, the Web Based Inventory System for the Food and Beverage Industry has been developed. This web application aims to automate and streamline inventory processes, providing a user-friendly interface accessible to both staff and shop owners. By digitizing purchase data, tracking suppliers and recipes, and facilitating bookkeeping, this system helps reduce food waste, save costs, and improve overall efficiency. Features like real-time stock updates, sales notifications, and production data management enhance decision-making and enable effective resource planning. By transitioning to a web-based inventory system, businesses in the food and beverage industry can optimize operations, maximize profits, and ultimately enhance customer satisfaction

2. METHODOLOGY

The project methodology for the Web Based Inventory System for the Food and Beverage (F&B) Industry involves the use of the Waterfall Model System Development Life Cycle (SDLC) to guide the planning, analysis, design, implementation, testing, and documentation phases of the project. The SDLC is a well-established approach used in the software industry to ensure the development of high-quality software that meets customer expectations within the specified timeframe and budget. This methodology emphasizes a systematic and structured approach to software development, aiming to enhance the overall development process and deliver a superior product. By following the SDLC, the project team will adhere to a well-defined framework, enabling them to effectively gather data, design the application, interface with local hosts, and implement the desired functionalities. The methodology ensures that the project progresses in a logical and organized manner, leading to the successful development of the Web Based Inventory System for the F&B Industry.

3. RESULTS AND DISCUSSION

The functionality testing for the final year project involved conducting a questionnaire survey among food and beverage workers, with most of them being students. The survey results indicated a clear demand for a system inventory to aid in the efficient management of stock in their stalls and restaurants. Additionally, the participants expressed a strong desire for the Telegram notification feature, which would provide convenient notifications when stock items run out. The functionality test results were highly successful, with all functions in the system performing exceptionally well. This indicates that the system meets the requirements and expectations of the food and beverage industry workers. The positive outcomes of the functionality test validate the effectiveness and reliability of the developed system, affirming its ability to streamline stock management processes and meet the needs of food and beverage establishments. By addressing the participants' requirements and ensuring seamless functionality, this project contributes to enhancing operational efficiency and inventory management practices in the industry.

4. NOVELTY OF RESEARCH / PRODUCT

The novel feature of the inventory system developed for this final year project is its advanced notification capabilities, which differentiate it from existing systems in the market. What sets this system apart is not only its ability to generate real-time notifications when stock levels reach a predefined threshold but also the underlying technology used for its development. Unlike other inventory systems, this project utilizes Laravel MVC, a modern and highly efficient framework. By leveraging Laravel's Model-View-Controller architecture, the system achieves a robust and scalable structure, ensuring seamless integration of inventory management functionalities. This innovative approach enhances the system's performance, reliability, and maintainability. The Laravel MVC framework provides a solid foundation for the system, offering flexibility in terms of customization and extension. With its elegant syntax and comprehensive set of tools, Laravel simplifies the development process, making it more efficient and productive. By incorporating this cutting-edge technology, the inventory system gains a competitive edge, delivering a user-friendly interface and seamless functionality. The advanced notification capabilities, coupled with the use of Laravel MVC, revolutionize inventory management in the food and beverage industry, enabling real-time alerts, efficient stock monitoring, improved decision-making, reduced errors, and enhanced operational efficiency.

5. CONCLUSION

In conclusion, the objective of developing an inventory management system for the food and beverage industry, integrated with the Telegram notification feature, has been successfully accomplished. The system effectively addresses the industry's inventory management challenges by providing real-time notifications through Telegram. The functionality test results demonstrate that all features of the system perform exceptionally well, ensuring efficient stock management and communication processes. By achieving these objectives, the developed system significantly improves operational efficiency. The successful integration of Telegram as a notification facilitating timely actions for restocking and replenishment. Overall, the project's outcomes affirm the value and effectiveness of the inventory management system in meeting the specific needs of the food and beverage industry, contributing to improved inventory control, and streamlined operations.

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