

## WEB-BASED INVENTORY MANAGEMENT SYSTEM

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### ABSTRACT

Inventory management is the practice of monitoring and controlling the ordering, storage, and use of parts that a company uses in the manufacture of its products. Inventory management has been used as a decision by countless businesses and has been widely studied in academia and business circles. But according to the survey, a lot of manpower is spent on inventory every day, which requires a lot of manpower to order. There are two ways to create an inventory list: manually or by computer. Manual stocktaking is usually done by handwriting data on paper. It has many disadvantages. One is that managers are prone to typos when entering data. Many organizations and businesses are moving from manual collection and processing of data to computerized systems. There are several options for computer systems. You can use a word processing or spreadsheet program such as Microsoft Office to accomplish this, but it has drawbacks. Manually entering data into a spreadsheet can take a long time, especially when users have large amounts of data to enter and may view or edit important data that should not be displayed. This is very disadvantageous. The purpose of this system is to improve this problem. The inventory management system can effectively manage inventory through timely inventory management such as inventory entry and exit, distribution, batch, and shelf life.

So, the project aims to develop a web-based system and develop it using PHP, HTML and JavaScript languages. The database you will be using is MySQL.

**Keywords: [inventory management (system), data, evaluation]**

## INTRODUCTION

With the rapid development of science and technology, convenient and fast management has become an urgent requirement of various management departments. Inventory management is the foundation of business management. Whether inventory management can be scientific and effective will directly affect the production and operation of other departments.

With the continuous development of some enterprises, their business volume and business scope are also increasing on a large scale. The previous manual management mode can no longer meet the management requirements of the enterprise. Therefore, it is urgent to have a scientific management information system to effectively manage its inventory. The implementation of this system will greatly improve the efficiency of inventory management, enable warehouse managers to quickly and timely obtain the current inventory situation and various incoming and outgoing information, and respond quickly according to market changes, so that enterprises can always occupy a favorable position in market competition. The implementation of the system will also make the management of the enterprise enter a new stage of modernization and scientization, improve the management level, improve work efficiency, and bring greater economic

benefits to the enterprise.

Therefore, this project aims to overcome the inventory system management problems of some enterprises, develop a network-based inventory management system, and let the inventory personnel of the enterprise have an inventory management system, so that they can use the system anytime and anywhere to better organize inventory and check inventory status. details.

The system will be developed based on the web. The software that will be used to develop the web-based inventory management system is Sublime, using programming languages such as HTML, PHP, and CSS. Not only that, but the system will also be developed in English.

The methodology used to develop the APP management system is an agile methodology. This is because it simplifies the system development process and also ensures the quality of the produced system. Not only that, but the approach can help to better manage project activities. User participation in development also contributes to improvements and changes to produce good systems.

In this report, the methodology and results of Inventory Management System development will be further discussed. Research methods include developing process models, data collection methods, data analysis methods, and measurement tools. The mentioned parts are very helpful in understanding the inventory management system that is about to be completed.

## STUDY METHODOLOGY

In the development of this project, the method of choice was Agile. This model will be developed throughout the project. Agile approaches are designed to iteratively deliver products through small cross-functional self-organizing teams that deliver small subsets of functionality incrementally and frequently. It also allows for frequent customer feedback and course corrections as needed.

Adopting agile methodology can complete the system development process in a short time and reduce the risk of software implementation failure from the technical point of view. With this development system, each phase is repeated multiple times, and improvements can be made with each iteration. The following is the iterative structure of an agile model.

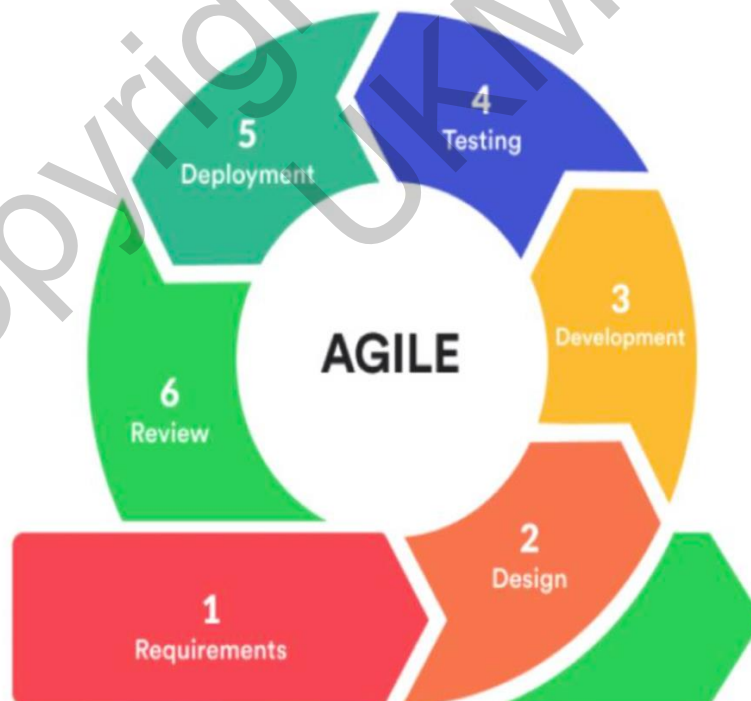


Figure 1.1 Agile model

The main method used for data collection was a combination of qualitative and

quantitative techniques. Qualitative data was collected through interviews and surveys with key stakeholders including inventory managers, warehouse staff and end users. This approach allowed us to gain valuable insights into existing challenges and user needs. Quantitative data such as historical inventory records and transaction logs are also collected to analyze inventory turns, demand patterns and identify potential bottlenecks.

The collected data were analyzed using mixed methods. Conduct thematic analysis of qualitative data to identify common themes and pain points. This helps shape the user interface and functionality of the system to match user expectations. For quantitative data, perform statistical analysis to identify trends, fluctuations in demand, and accurately forecast inventory requirements.

To measure the effectiveness of the inventory management system, several key performance indicators (KPIs) were identified. These KPIs include inventory turns, fill rates, out-of-stock rates, lead times, and order accuracy. Regularly measure the effectiveness of your inventory management system against these metrics. To capture real-time data, barcode scanners and RFID technology are integrated into the system, allowing accurate and automatic tracking of inventory movements.

## **CONCLUSION**

In conclusion, the development and implementation of an inventory management system has been successfully completed, achieving the objectives set forth in the

introduction section. This technical report outlines the process of creating an efficient and user-friendly system for our organization to manage inventory.

The implementation of the inventory management system has had very positive results.

The system has shown improved inventory tracking, real-time inventory monitoring and automated replenishment processes. Comprehensive dashboards and reporting capabilities provide better visibility into inventory levels and movements, leading to smarter decisions.

The main goal set out in the introduction is to create a robust and scalable inventory management system that simplifies operations and reduces inventory costs. We are pleased to report that the system has successfully achieved these goals. It minimizes out-of-stocks, overstocking and increases inventory turnover, resulting in cost savings and increased efficiency.

The impact of the findings goes beyond our organization and has important implications for other businesses in the industry. The implemented system can serve as a model for efficient inventory management, providing valuable insights and best practices. It contributes to existing knowledge by demonstrating the benefits of using technology to optimize inventory control processes.

Although inventory management systems show great promise, there are still some areas for improvement. A notable aspect is the integration with existing ERP systems for seamless data synchronization. In the future, the automation of supplier communication can be further enhanced to enable automated fulfillment of orders.

Additionally, we recommend exploring the integration of AI-driven demand forecasting

capabilities to improve the accuracy of inventory planning and further reduce excess inventory.

In conclusion, the Inventory Management System is a major milestone for our organization. It revolutionized our inventory control practices, resulting in improved resource allocation and better customer service. The successful implementation of this system highlights the advantages of technology-driven inventory management solutions and lays the foundation for future research and innovation in this field.

Overall, the development and deployment of inventory management systems has had positive results and demonstrates the potential of the technology to optimize supply chain operations. The success of this system will undoubtedly contribute to the overall development and competitiveness of our organization in the market.

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