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INTRODUCTION

At present, efficient inventory management is essential for the success of any business, especially in the fashion sector where product turnover is constant and trends change quickly. The "Kiara" business, dedicated to selling clothing in the locality of Sangolquí, faces significant challenges due to the manual management of inventories across its four locations. This traditional method not only consumes time but also increases the likelihood of human errors, making the accurate accounting of revenues and expenses difficult and limiting the owner's ability to monitor and make decisions.

PROBLEM FORMULATION

Kiara is a clothing business in Sangolquí that has been operating for more than three years. The business has a total of four locations; however, up to now, inventory management is done manually. This issue is a nuisance for the owner because with four locations there is a large amount of merchandise that must be recorded. Moreover, this problem means that there is no efficient accounting system to determine total revenues and expenses.

OVERVIEW

Manual inventory management in the "Kiara" business has proven to be inefficient and prone to errors, especially since it operates across four locations and handles a significant amount of

merchandise. This traditional method requires a high consumption of time and resources, leading to inconsistencies in the recording of entries and exits and making it difficult to obtain reliable information for strategic decision-making.

An automated inventory management system is crucial to solve these problems, as it will centralize information, automate key processes, and generate precise financial reports. The implementation of this technological solution will not only reduce human errors but also optimize daily operations and strengthen the control over business activities.

GENERAL OBJECTIVE

Implement an inventory management system in the "Kiara" business to improve operational efficiency, optimize merchandise control in the four locations, and enhance the accuracy in revenue and expense accounting through the use of a user stories matrix.

SPECIFIC OBJECTIVES

• Automate the registration of merchandise entries and exits in real time to reduce errors and the time associated with manual management.

• Consolidate the inventory information from the four locations into a single platform to facilitate oversight and decision-making.

• Identify the functional and non-functional requirements.

SCOPE

• Registration of new merchandise entries with details such as description, name, price, and date.

• Real-time registration of merchandise exits that reflect completed sales.

• Automatic updating of available stock per product and per location.

• Consolidation of inventory data from the four locations into one centralized platform.

• Ability to filter information by specific location or product.

METHODOLOGY (5W+2H FRAMEWORK)

The 5W+2H method (What, Why, Who, Where, When, How, How Much) allows for a clear and logical structuring of the development of the inventory management system for the "Kiara" business. Below is its application:

WHAT (What is going to be done?)

Develop and implement an inventory management system that allows the registration of merchandise entries and exits, centralizes the information from the four locations, generates financial reports, and optimizes business administration.

WHY (Why is it going to be done?)

The system will be developed to resolve issues like manual inventory handling, lack of precision in records, and the difficulty in supervising the four locations. This will improve operational efficiency, reduce human errors, and enable decision-making based on reliable information.

WHO (Who will do it?)

The development will be carried out by a team composed of:

• Product Owner: Sivinta Steve (Business Administrator), who will define priorities.

• Development Team: Sanchez Julio, Sivinta Jahir, Rosas Mateo

WHERE (Where will it be implemented?)

A test will be conducted in the development environment to evaluate the system's performance. Once this stage is successfully completed, the solution will be implemented in one of the four locations, subject to client approval.

WHEN (When will it be done?)

It is scheduled for the third week of January, according to the proposed timeline.

HOW (How will it be done?)

The development will follow the principles of the Scrum framework, working iteratively and incrementally. The most critical functionalities—such as inventory registration and report generation—will be prioritized. The process will include requirements analysis, design, development, testing, and training.

IDEAS TO DEFEND

• A centralized inventory system improves visibility and facilitates rapid, accurate decision-making.

• The use of a user stories matrix to identify both functional and non-functional requirements.

EXPECTED RESULTS

Once the functional and non-functional requirements were established, three codes were developed: one for login, one for collecting garment information, and one for searching the garments.

TECHNOLOGICAL

• Hardware: It will be necessary to have computing equipment, servers, and scanning devices (barcode or RFID) to manage inventory in real time.

• Software: JAVA will be used to create the code for the inventory system.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

In conclusion, the three codes presented are aligned with the project's objective of implementing an inventory management system for the "Kiara" business. Each of the key aspects of the system is addressed as follows:

• First code: Allows filtering garments based on criteria such as type, gender, and size, simplifying inventory searches. This facilitates efficient stock control and meets the project's scope.

• Second code: Provides functionality for registration and login with robust credential validation, ensuring secure and controlled access to the system—an essential element for centralized inventory management.

• Third code: Complements the first with similar filtering functions, ensuring that product information can be managed accurately and in real time.

Furthermore, thanks to black-box testing, it was determined that the input data is correct, thereby confirming that the developed program is free of defects.

RECOMMENDATIONS

• It is recommended to maintain good communication with the client, as clearly establishing their needs is essential; this will allow the creation of an effective user stories matrix to gather both functional and non-functional requirements. This ensures that the final product meets the owner's specifications.

• Additionally, when programming, it is important to use "if" conditionals, as this will facilitate the development of white-box tests.

BIBLIOGRAPHY

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