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Hardware Store Cashier System

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ABSTRACT: Cashier System makes the work of every owner/employee easy for them, making all the transactions fast, reliable, and secure. The Hardware Store offers quality hardware products in a customer-friendly shopping environment. The Hardware Store needs a system that will have an inventory for their items/products, a printed receipt with the time and date of purchase included and the computation of total bill/amount of the customer. Visual Studio 2017 and Microsoft Access 2010 were used to develop the system. Waterfall method was used in developing this project. These stages start with as planning, analysis, design, implementation, and maintenance. The evaluation result of the system was, Efficiency, Compatibility, and Maintainability ranked as 4.0. Based from the evaluation results, the programmers believe that the discoveries in this task contribute altogether to the proprietor of the hardware shop. In any case, the system is open for further improvement and upgrade as far as improving the accompanying features which is to monitor, edit/delete the number of stocks.

KEYWORDS: Reliable, Secure, Customer-friendly, Inventory, Sequential, Waterfall

I. INTRODUCTION

Manual data entry put weight on people to be right in all subtleties of their work consistently, the problem is that people are not perfect. With manual systems, the dimension of administration is reliant on human beings and this puts a necessity on the board to run preparing often for team of workers to hold them persuaded and to assurance they are following the proper techniques. It tends to be very simple to by the way switch subtleties and cease up with irregularity in records area or in manually written requests. This has an impact on of inflicting problems with consumer administration as properly as making statistics incapable be utilized for detailing or discovering patterns with statistics disclosure. Announcing and observing that facts is sturdy can be convenient and costly. This is regularly a region where noteworthy money can be spared by way of computerization. [8]

The Hardware Store needs a system that will have an inventory for their items/products, a printed receipt with the time and date of purchase included and the computation of total bill/amount of the customer. This project aims to develop a cashier system with inventory that will help the Hardware store in managing their items/products and a system that will automatically compute the total bill/amount of the customer. The Hardware store cashier system will have the following information with every purchase made by customers; a unique product number assigned to every item/product, the item description and its price, the date and time of the transaction and the total amount of all items bought.

II. REVIEW OF RELATED LITERATURE STUDIES

Point of Sale (POS) systems are a focal system of exchanges that happen in an exchanging domain. The system is regularly used to figure the cost of a thing dependent on its estimation, at that point show it to the client lastly create a receipt, name or other printout [1]. POS systems, in some cases alluded to as Point of Purchase systems allude to the area of an exchange otherwise called a checkout. These systems incorporate money registers, handheld gadgets, exceptional terminals, optical scanners and attractive card per users. POS systems are generally utilized in the retail and neighborliness industry [2].

There has been critical improvement in the mechanical improvement in the eatery commercial enterprise also. Verifiably increment have been moderate to acquire new innovation [3]. Seen in actuality as adding fees to the

advantage and misfortune articulations, eateries would in established timid some distance from new innovative advances, given that they delivered expenses to efficaciously skinny internet revenues. In the preceding 10 years there has been a steady increment in eateries understanding the value of expanding their dimension of innovation to turn out to be increasingly more focused in dealing with the business [4]. The mechanical development stage has seen eateries cross from the money register as the chief innovation to the present slicing edge online reservation frameworks just as computerized inquiring for frameworks [5]

According to Koutroumanis [6], the first upsetting innovation executed by eateries, was the outstanding purpose of offer (POS) frameworks. Created in the mid 1980's the frameworks fit into the eatery business well via robotizing the occupations of the administration staff and kitchen staff. Never again was penmanship requests and hand conveying them to the kitchen the methods by which visitor orders were prepared. The POS had the capacity to spare significant time and was a substantially more proficient method for executing this capacity. A noteworthy development in this underlying POS framework was that the servers never again needed to recall or information valuing on manually written checks. The POS framework was customized with menu things comparing with cost, expanding proficiency higher than ever [6]

III. SCOPE OF THE SYSTEM

The system is more focused on the transaction between the customer and the cashier in charge. The scope of the system are registered items/product will have a unique product number and the system will also notify the user if s/he registered the same product number. The user of the system can also view their registered items/products in the inventory. System will also automatically compute the total amount of the customer and will have a printed receipt with the time and date of purchase included. The system's limitations is that the number of stocks are not monitored and can't be updated and the user can't edit the items/products registered in the inventory. However, the system is open for further improvement and upgrade as far as improving the accompanying features which is to monitor the number of stocks and to edit/delete the items/products registered in the inventory.

IV. METHODOLOGY

In developing this project, we used the sequential method, which is the Waterfall. These stages start with as planning, analysis, design, implementation, and maintenance. As we go on in this project we will follow the stages to derive in a successful system.

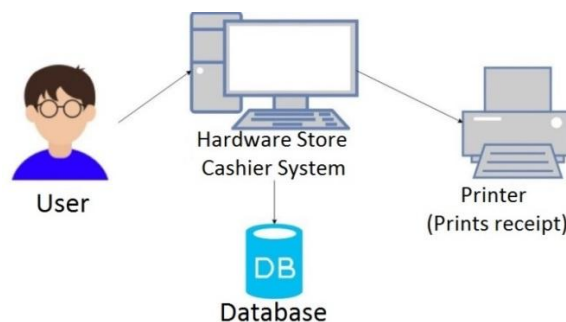


Figure 1.0 System Architecture of the Hardware Store Cashier System

Figure 1.0 above shows the System Architecture of the Hardware Store Cashier System where the User/Owner will only have the access to the Hardware Store Cashier System. For the Database, the system shall be able to store the Unique Product Number, the Product Name, and the Product Price. For this project, a printer is needed for a printed receipt with the time and date of purchase included and the computation of total bill/amount of the customer.

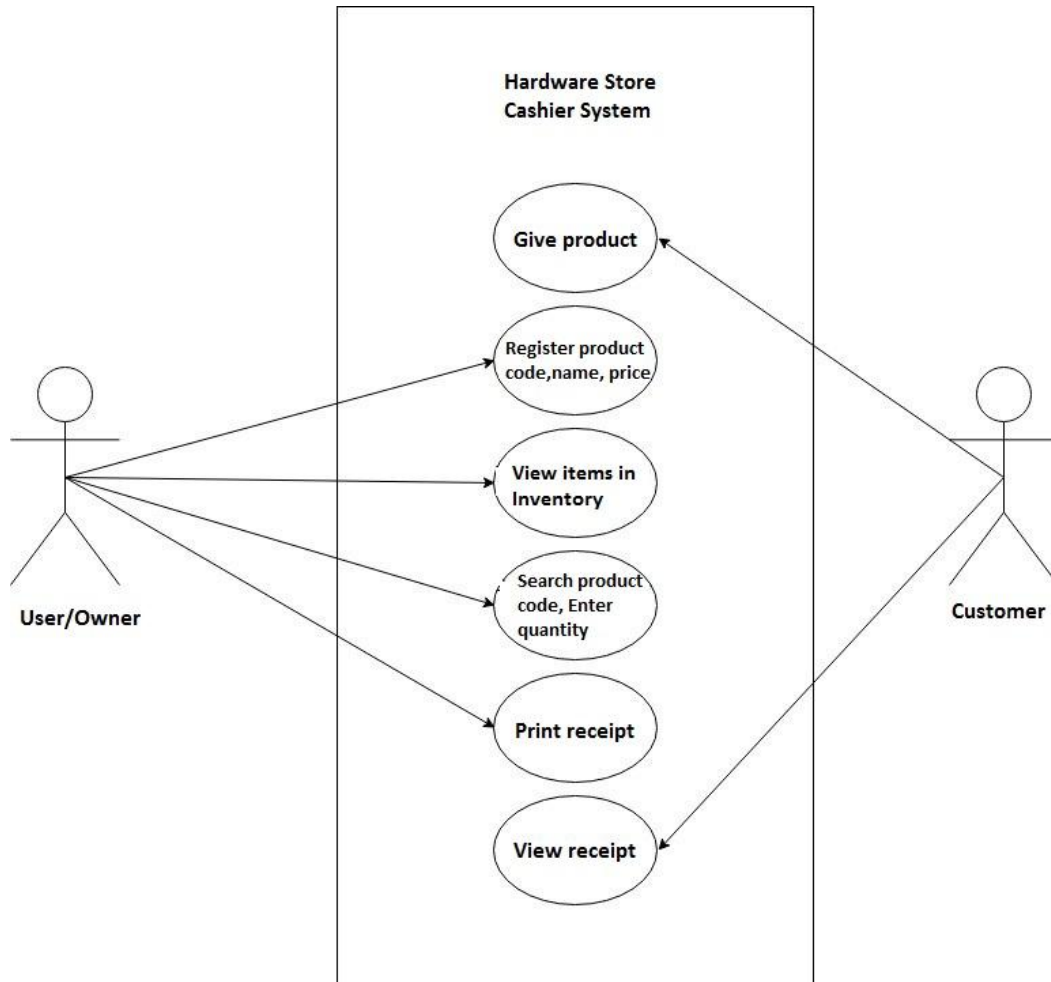


Figure 2.0 Use Case diagram of the Hardware Store Cashier System

Figure 2.0 above shows the Use Case Diagram of the Hardware Store Cashier System where the User/Owner can register the product code, name, and price. The User/Owner can also view items/products in the Inventory and can print the receipt with the date and time of purchase included. The Customer will just only give the product and can view the printed receipt.

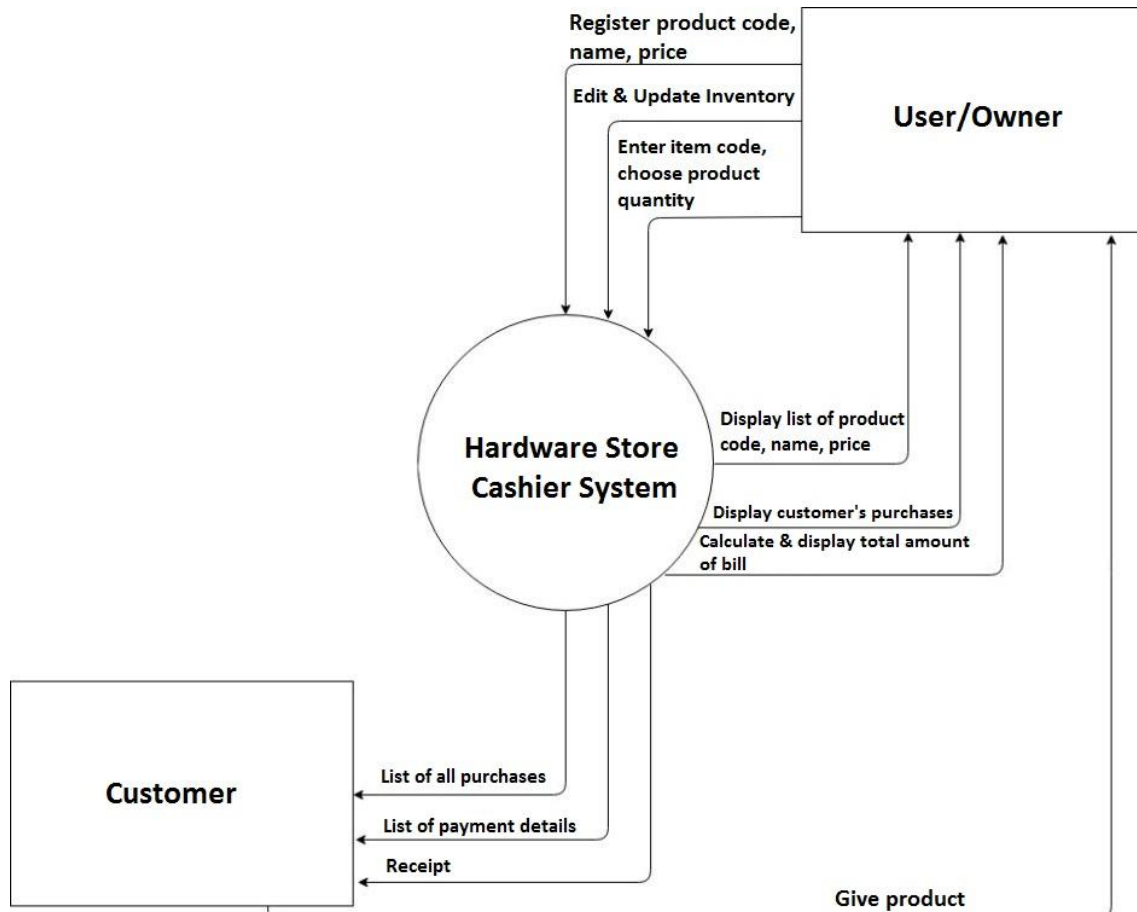


Figure 3.0 Context Flow Diagram of the Hardware Store Cashier System

Figure 3.0 above shows the Context Flow Diagram of the Hardware Store Cashier System. It contains a procedure shape that speaks to the system to demonstrate, for this situation, the "Hardware Store Cashier System". It demonstrates the members who will cooperate with the system, called the external entities. In this figure, Customer and User/Owner are the entities who will cooperate in the system.

First interaction will be the Customer will give the product to the User/Owner. The User/Owner can then Register the product code, name, and price, View items/products in the Inventory, and Enter the item code and choose the quantity of the product to the Hardware Store Cashier System. The Hardware Store Cashier System can then display the list of product code, name, and price, the Customer's purchases, and will calculate and display the total amount of the Customer's bill to the User/Owner. The interaction between the Hardware Store Cashier System and the Customer is that the Hardware Store can display the list of all the purchases, payment details, and can issue and print a receipt.

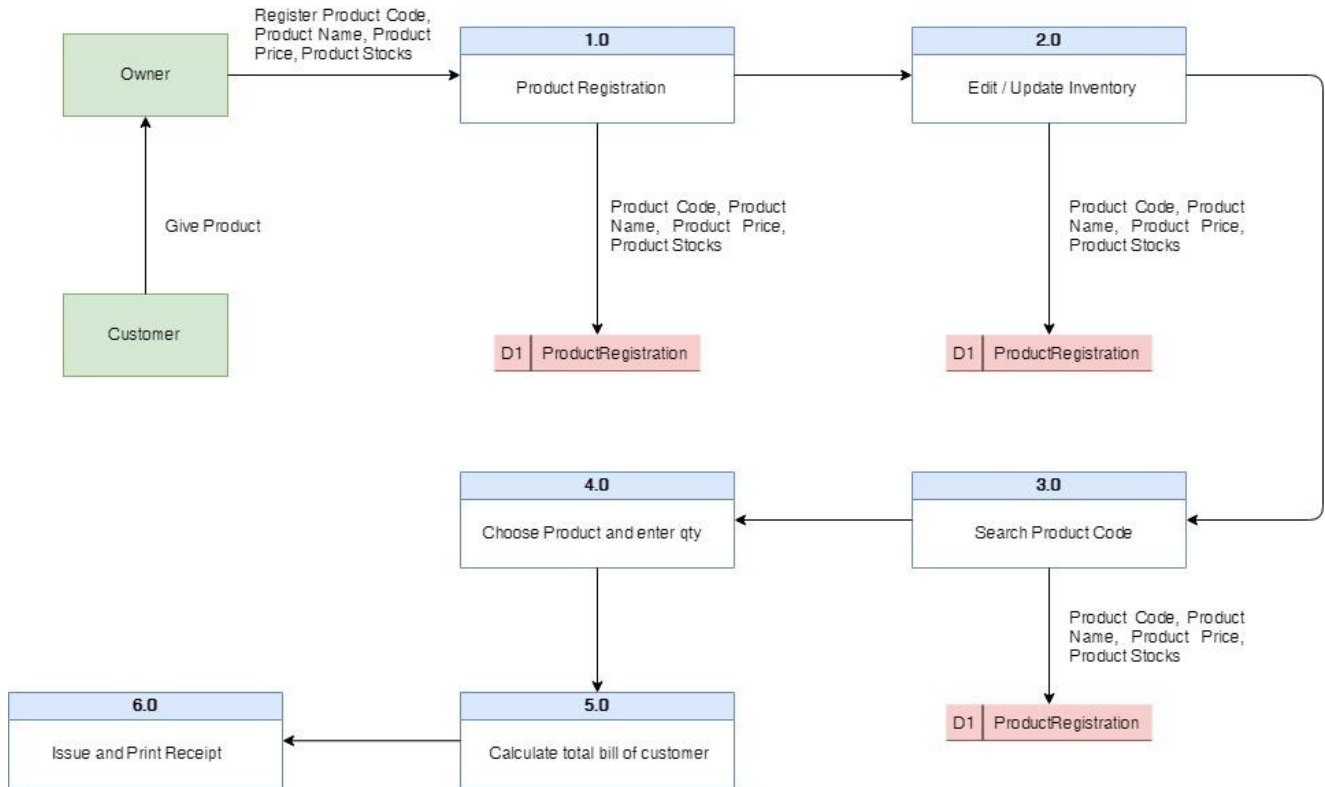


Figure 4.0 Data Flow Diagram of the Hardware Store Cashier System

Figure 4.0 above shows the Data Flow Diagram of the Hardware Store Cashier System where the diagram contains six processes (1.0, 2.0, 3.0, 4.0, 5.0, and 6.0), two external entities (Customer and the Owner) and one data store (Product Registration). The Customer will give the product to the Owner. The Owner then will register the Product Code, Name, Price, and Stocks in process 1.0 (Product Registration) and save it to the data store (Product Registration). The Owner can view the registered items in process 2.0 (Edit/Update Inventory). The Owner will search the Product Code in process 3.0 (Search Product Code) and choose the product and enter quantity in process 4.0 (Choose product and enter quantity). The Owner then will calculate the total bill of the customer in process 5.0 (Calculate total bill of customer) and issue and print a receipt in process 6.0 (Issue and Print Receipt).

V. RESULTS AND DISCUSSION

In developing this project, we used the sequential method, which is the waterfall. These stages start with as planning, analysis, design, implementation, and maintenance. As we go on in this project we will follow the stages to derive in a successful system.

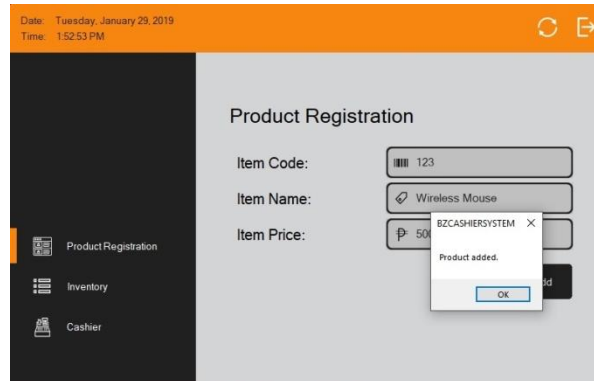


Figure 5.0 Product Registration page

Figure 5.0 above shows the Product Registration page where the user will register the items/product with a unique product number. The developers trust that the features made in this undertaking contribute altogether to the proprietor of the hardware store.

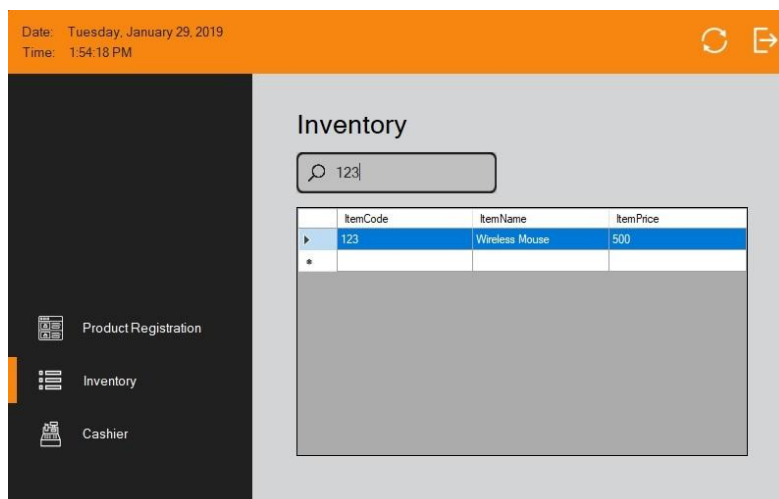


Figure 6.0 Inventory page

Figure 6.0 above shows the Inventory page where the user can manage and view their registered items/products. The developers trust that the features made in this undertaking contribute altogether to the proprietor of the hardware store.

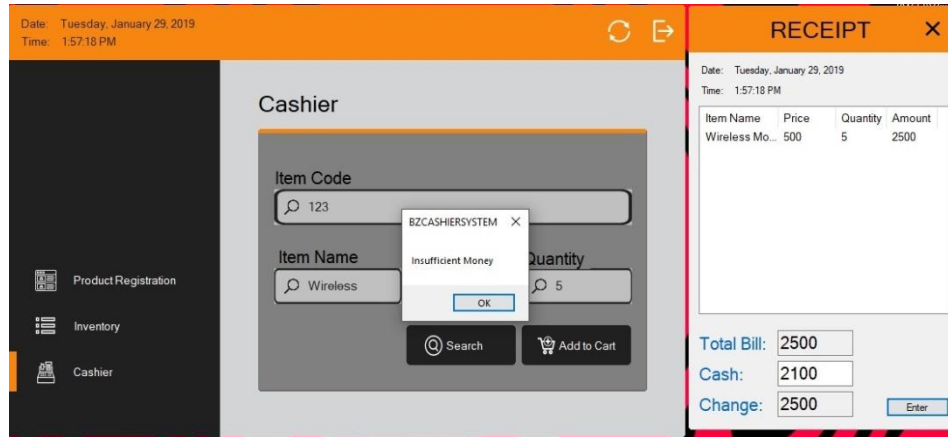


Figure 7.0 Cashiering Area

Figure 7.0 above shows Cashiering Area where the system will compute the total amount/bill of the customers and will notify the user if the customer has insufficient money. The system will also have a printed receipt with the time and date of purchase included. The developers trust that the features made in this undertaking contribute altogether to the proprietor of the hardware store.

VI. EXPERIMENTAL RESULTS

Table 1.0: Software Evaluation Results

Criteria	Mean	Interpretation
Functional Suitability	3.67	Moderately Acceptable
Performance efficiency	4	Acceptable
Compatibility	4	Acceptable
Usability	3.8	Moderately Acceptable
Reliability	3.33	Moderately Acceptable
Security	3.33	Moderately Acceptable
Maintainability	4	Acceptable
Portability	3.5	Moderately Acceptable

Table 1.0 presents the overall evaluation of the System; the highest which is the efficiency, compatibility, and maintainability having 4, and reliability and security as the lowest with 3.33 weighted mean. The overall weighted mean is 3.70 which is considered as Very Good.

In view of the results, the system's point of developing a cashier system alongside its particular objectives was met and has been effective. The survey demonstrates the productivity of the system and results to a general positive criticism to both the developers and the end-clients.

VII. CONCLUSION

Based from the finding of the study, the developers in this way presume the system functionalities are done in all the exchange and the system will be valuable and will surely help the proprietor of the Hardware store.

The Hardware store need a system that will help them to print a receipt with the time and date of purchase included and will automatically compute the total amount/bill of their customer. The developers trust that the features made in this undertaking contribute altogether to the proprietor of the hardware store.

However, the system is open for further improvement and upgrade as far as improving the accompanying features:



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- Monitoring the number of stocks.
- Editing/Deleting of stocks.

VIII. ACKNOWLEDGEMENT

The programmers want to give thanks to all the persons that have become a big part of this project especially to the owner of the hardware store for allowing us to conduct our project to their store. Initially, we might want to express gratitude toward God for giving us solidarity to complete this venture. To our family, particularly to our mom and father for their good and monetary help so as to complete this undertaking. To our teachers for controlling and helping us so as to make this task a well done accomplishment. To our university for helping each student to be responsible in the future. Ultimately to every one of the respondents for all their full participation that made them a major piece of this venture.

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