Open Source POS

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Introduction

A point of sale (POS) system is a system that allows a customer to make payment for a product or service. Every time a customer makes a purchase, they are completing a point of sale transaction. The POS system is where most sales, inventory, and customer information are stored and managed. “As evident as the benefits of a POS system are, we found that 56 percent of single-store retailers are still not using one. Instead, we found, many are still using a combination of manual methods, cash registers, QuickBooks and Excel for bookkeeping” (Stubbs, 2019). Most modern POS systems require a subscription License. Therefore, there is need for a lightweight, simplistic, open source POS system.

Inception

There are many small businesses in America that only complete transactions with cash and keep hard copies of all sales. An open source POS system would be beneficial to these businesses to save the owners money. The benefits of an open source system do not end there, all the source code should be available which will allow for custom solutions that better fits the business needs.

Requirements

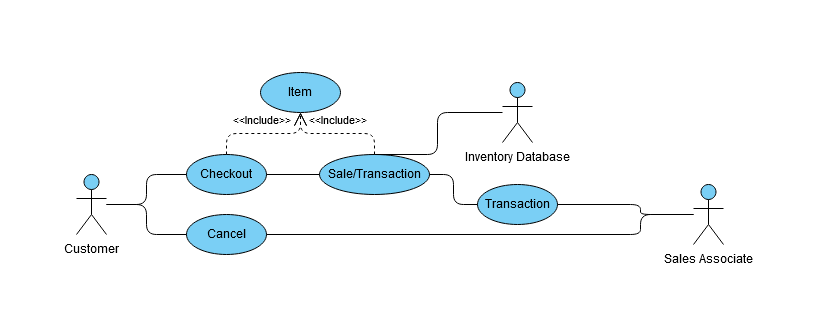
This system should fulfill the following requirements:

* The system must track sales and payment.
* The system must allow management of the products and services.
* The system must assist in payment.
* The system must give reports.
* The system must complete audits.
* The system must be used by workers, and supervisors.
* The system must be modular (could be adjusted for multiple business types).

Diagrams

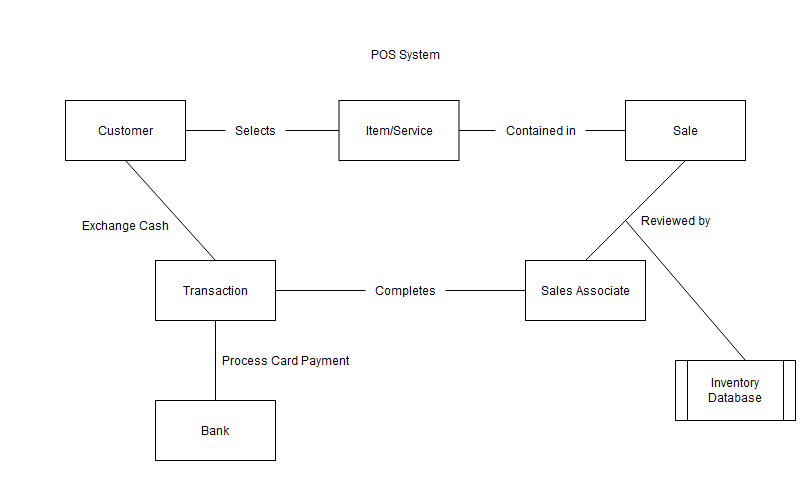
**Use Case Diagrams**

The customer should be allowed to perform 2 actions. It is important to note that the sales associate will complete the actions for the customer on the POS system. The customer should not be able to access the system. The customer should be allowed to checkout with an item and cancel a transaction. The sales associate should be able to complete the transaction on the POS system and cancel the sale as well. The Item should be a class that is included in the Sale, the Transaction should wrap the Sale and Item, the Transaction should make the call to the inventory database to update the inventory.



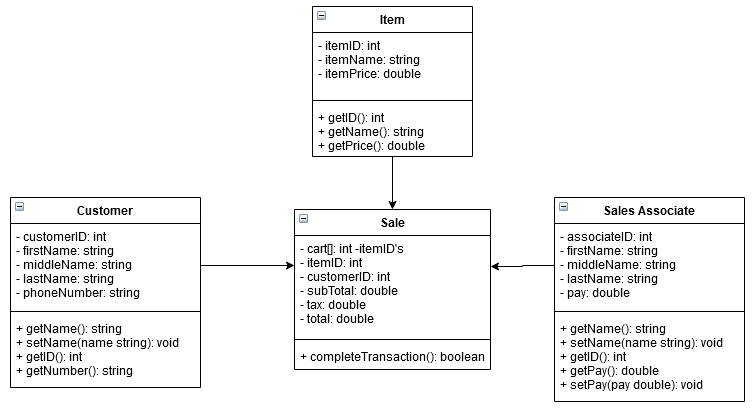
**ERD**

This diagram helps to show the flow of operations between the objects in the Use Case Diagram. The customer should select an Item. The Item will be wrapped by the Sale. The Sale will be reviewed by the POS system and the sales associate. The system will review the Sale by referencing the inventory database. The sales associate will then complete the transaction by exchanging cash or processing a card payment through a bank.



**Class Diagram**

The Class Diagram is showing a detailed definition of the classes and their functions. The Customer can be a class in the system for tracking and contact for tailored product deals. The customerID would be critical for the Sale when the Supervisors run reports from the system. This will link the customer to the Transaction. The Item is important to track with the Sale so that it can be traced through the inventory system and removed from stock when it is sold. This shows how the Sale will be composed of elements from the Customer, the Item, and the Sales Associate.



Environment

This system should be able to run independently on a Windows or Linux system. The entire goal of this project is to provide a low-cost alternative to the expensive and hard to install systems that are available today. The ability to run independent of operating system will allow for completely free installation on Linux distros and still allow the flexibility for windows if the users are more comfortable. The Inventory Database should be hosted on a Linux distro for the ease of use and install. The database could be accessed from a webserver API call (That is out of the scope of this project).

Conclusion

In conclusion, I believe this system could help single-store retailers convert their management systems from manual processes to a POS system. This system will help bring these businesses up to more modern standards and allow them to save time and money by freeing manpower. This type of program could change how small business works and encourage competition in retail, leading to a strengthened economy.

References

Stubbs, A. T. (2019, October 25). What Is a POS System? Retrieved March 26, 2020, from

https://www.softwareadvice.com/resources/what-is-a-point-of-sale-system/