# Inventory Management System for Costumer Service

Zedner Mick Morgadez Luminarias
BSCS Student
Malayan Colleges Mindanao

Andre Miguel Bacaling
BSCS Student
Malayan Colleges Mindanao

James Paul Abid
BSCS Student
Malayan Colleges Mindanao

**ABSTRACT**

Business has been around us, it is old as the human civilization. Business is a type of an organization engaged in commercial, industrial, or professional activities. One of the oldest known companies is Kongo Gumi; they design and build shrines in japan.

As time goes on, Technologies has been getting more advance and easy to use for people. Connie is a robotic concierge that helps hotel guests in whatever they need, including a best place to visit. Despite the usefulness of an advance technology, not all businesses can afford them in their establishment, especially the small and newer business.

A convenience store, for example, is a type of small retail business that stocks a range of everyday items such as coffees, can foods, meats, cigarettes, etc.

In this paper, we would build a small, simple application that would list the items in the store that would allow the costumers to search their wanted products, which counter they are located, and the price of the item using the Insert Sorting Algorithm.

**General Terms:**

Insert Sorting Algorithm.

**Keywords:**

Algorithm, Application, Sorting, Convenience store.

## 1. INTRODUCTION

Business has been around us, it is old as the human civilization. Business is a type of an organization engaged in commercial, industrial, or professional activities. One of the oldest known companies is Kongo Gumi; they design and build shrines in japan.

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## 2. RELATED WORKS

**Electronic shopping system having self-scanning price check and purchasing terminal -**

An electronic shopping system, communicating between a store computer and a customer assistance terminal, for providing item price information for general customers and effecting item transactions for customers carrying a valid customer identification indicia. The shopping assistance terminal operates as a price check terminal in a default mode and is adaptively reconfigurable to a transaction terminal mode upon receipt of a valid customer identification indicia. A Price Look Up table is maintained in the store data base and, as a product is scanned, the item's price is verified and displayed on an integral display screen. If the terminal is configured in the transaction terminal mode, the item data is further added to a transaction list maintained in a memory storage area of a customer ID card.

**Inventory management system -**

An inventory management and tracking system for tracking items with RFID tags, which includes a business logic rules engine having a plurality of rules which dictate how information is assembled and presented, provides specific dataset definitions which govern import and export of data to disparate systems, and provides an interface to planning applications as well as high end inventory, management and accounting systems. The system also includes a data storage module coupled to said business logic rules engine, a capture module operative to capture information from said RFID tags, a reporting module operative to determine and produce an accurate inventory of said items, and a data transformation interface coupling said business logic rules engine to said data storage, capture and reporting modules.

**Order and inventory management system -**

An interactive business to business order and inventory management system to fulfill customer requisitions and provide current product inventory status information comprising a supplier computer having information processing and storage capabilities to establish inventory of products and designated shipping sites, to establish and maintain product inventory

counts, receive, accept, fulfill, ship and bill individual customer product requests, to track status of customer product requests and to generate customer product order reports and at least one customer computer having information processing and storage capabilities to order products for shipment to designated sites and to selectively request customer product order reports operatively coupled by a data communications link capable of transferring data and information therebetween.

**Effectiveness of vendor managed inventory systems in retail supermarkets in Kenya -** Vendor Managed Inventory (VMI) is one of the many initiatives that strive towards closer cooperation between the members of supply chains in the area of inventory and demand management (Daughtery, 1999). Vendor Managed Inventory is an inventory management process that falls under the 'push'stock management processes. These are processes that are triggered by interpretation of an expected demand in inventory and supply is scheduled to meet this demand.

**System and method for completing in-store transactions using a mobile computing device** - Inventory management in a checkout-free store may use a combination of anti-theft tags, door sensors, a payment application on a smartphone and associated with a payment device, and a shopping cart or basket with a first communication device (e.g., a radio frequency identification ("RFID") tag, near-field communication ("NFC") device, etc.).

**Voice activated, voice responsive product locator system, including product location method utilizing product bar code and product-situated, location-identifying bar code** - The present invention is an item location system which relies upon voice activation and responsiveness to identify location(s) of item(s) sought by a user. The system includes a continuous speech recognition digital signal processor, a programmable microprocessor interfaced therewith, voice input and user feedback mechanisms, including audio and/or video feedback.

**Easy Checkout -** E-commerce means that articles can be searched for and found with great ease and speed. The payment process is just as easy and quick. Online purchases are confirmed and paid for in seconds with a click, fingerprint, or by facial recognition.

## 3. MATERIALS AND METHODS

### 3.1 BLOCK DIAGRAM

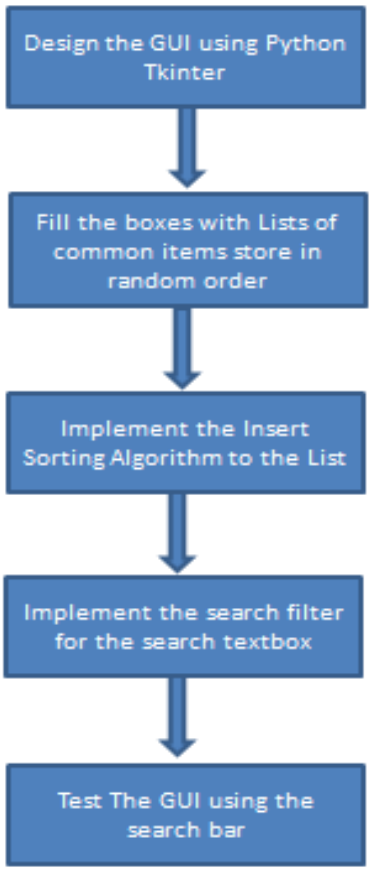


**Figure 1: Group flow chart**

Figure 1 represents the progression of the project. We split the work each of our three man group: Two tasks will be given to one person (Design and algorithm implementation), another two task for one person (search box and testing), and one task for the last person (making the list of items).

### 3.2 Title and Authors

# [1] Inventory management system

Author: Morand, A., Brown, J., & McInnes, B.

Affiliations: VERMETTE & CO.

Address: BOX 40, GRANVILLE SQUARE SUTE 230 - 200 GRANVILLE STREET VANCOUVER, BC V6C 1S4 (CA)

## [2] ELECTRONIC SHOPPING SYSTEM HAVING SELF-SCANNING PRICE CHECK AND PURCHASING TERMINAL.

Author: Matsumori, K.

Affiliations: Fujitsu Limited, Kanagawa (JP)

Address: San Diego, CA (US)

## [3] Voice activated, voice responsive product locator system, including product location method utilizing product bar code and product-situated, location-identifying bar code.

Author: Glynn, K., & Mahoney, J.

Affiliations: Lamson Holdings LLC, Wilmington,

DE (US)

Address: Township of Raritan, County of Hunterdon, NJ (US); Township of Colts Neck, County of Monmouth, NJ

## [4] Order and inventory management system.

Author: Kurt Schaller

Address: Arthur W. Fisher, III, Suite 316 5553 West Waters Avenue Tampa, FL 33634 (US)

## [5] Easy Checkout.

Author: Spanke, M.

Affiliations: BIG IDEAS Visual Merchandising IncMiamiUSA

## [5] Hilton and IBM built a Watson-powered concierge robot

Author: Statt, N.

Affiliations: San Francisco-based news editor and reporter at The Verge covering Silicon Valley, gaming, AI, and other neat things.

## 4. EXPERIMENTATION AND RESULTS

The Prototype of our app will be tested by the researchers themselves. The prototype consists of 36 lists of different items that are common to a convenient store or a small supermarket.

### 4.1 Subsections

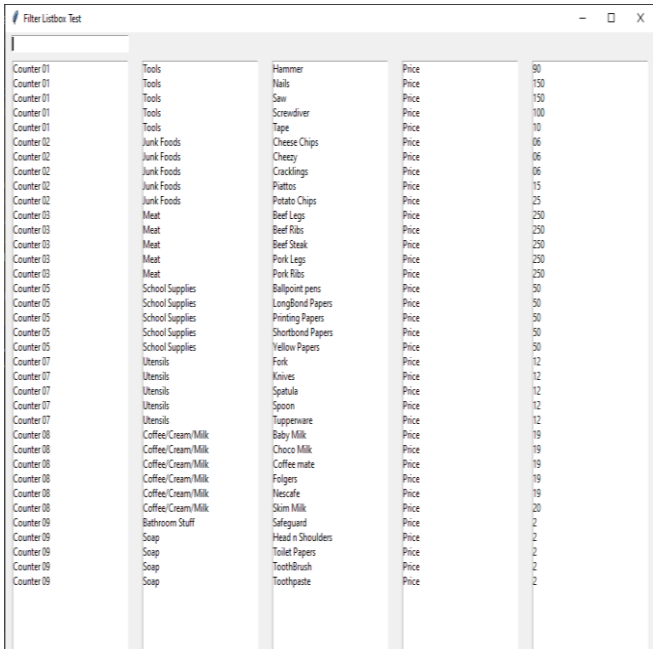


**Figure 1**

#### *4.1.1 Figure 1*

Figure 1 is the Main User Interface. This Form will be the only one the user will see and use. The Form consists of 36 lists, 5 items per counter. In the first table, the users can see the counter number. Second table, is the general name of the items that can be found in the first table. Third table, is the product name. Fourth and fifth table is the price table where the user can see prices of the items from the second table. The Insert Sorting algorithm would rearrange the items based on the counter number.

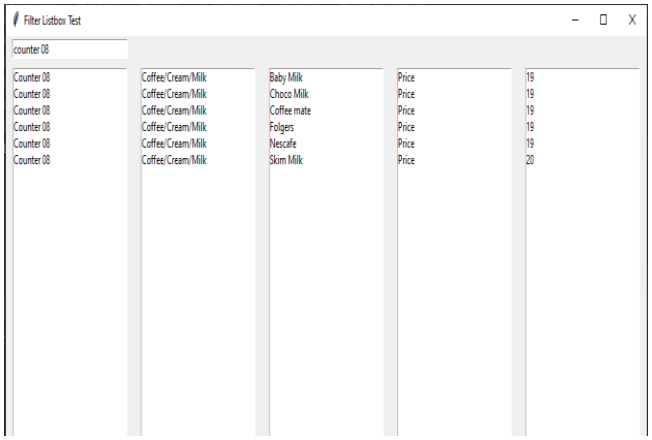

Figure 2

### *4.1.2 Figure 2*

When the user/costumer searcher for an item, the Search Filter would arrange the clear the items that are not searched and only the preferred items would stay put.

## 5. CONCLUSION AND RECOMMENDATION

**Conclusion:** The app works as the researchers planned and designed. The algorithm sorts the counter number from least to greatest and the search filter works as the user wants it to look up.

**Recommendation:** There should be a different form that a staff could add the items.

## 6. ACKNOWLEDGMENTS

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## 7. REFERENCES

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## About the authors:

Author: **Matthias Spanke** has been shaping the brands of leading international retailers for more than 25 years. His career began in Europe and led him to Macy's New York as Vice President Creative Director of Visual Merchandising