Inventory Management System for Retailers

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ABSTRACT

Inventory management system which is helpful for the business operators, where shopkeeper keep the records of purchase and sales. Mismanaged inventory means disappointed customers ,too much cash tied up in slower sale and warehouses .This inventory is eliminate paper work, human faults , manual delay and speed up process .This inventory management system will have the ability to track sales and available inventory, tells a shopkeeper when it’s time to reorder and how much to purchase. Inventory management system is windows application developed for windows operating systems which focused in the area of inventory control and generate
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Literature Survey

1. Retailer Inventory Strategy based on System Dynamics Simulation

System dynamics (SD) was created during the mid-1950s by Professor Jay Forrester of the Massachusetts Institute of Technology.

The supply chain inventory management aims at meeting customers' demands, reducing inventory cost and increasing enterprise profit. We need place an order and replenish productions when the inventory is under safety stock quantity. So a simulation model is established and it must meet customers' demands, operate smoothly and use up the inventory in time. Therefore, we can use the method of system dynamic simulation to optimize the variable parameters in a two-stage supply chain inventory system. The model should meet the customers' demands primarily, and we need reset the variable parameters of adjustment production time, demand production delay time and demand sale time to get a better retail inventory strategy ultimately.

MECHANISM USED:

i) System Dynamics Simulation

System dynamics (SD) was created during the mid-1950s by Professor Jay Forrester of the Massachusetts Institute of Technology. A system is integrated by multiple elements, such as constraint conditions, inputs, outputs and feedbacks. They are all included in the complex of systems and the environment. The theory foundation of system dynamics consist of classical fluid mechanics and feedback control theory. It is a discipline that focuses on cognizing and solving system problems, connecting with natural science and social science

as well. System dynamics is usually called “strategic decision laboratory”.

Vensim software is a kind of visual modeling tool. When a system dynamics model is established, we can use this software to conceive it, simulate it, analyze it and optimize it, and the documents are created at the same time. In other words, its requirement of operating system and hardware environment is lower than some other simulation software.

REFERENCES:

[1] Forrester J W. “Industrial dynamics:A major breakthrough for decision makers”.Harvard Business Review, vol.36, no.4, pp.37-66, 1958.

[2] RIDDALLS C E, BENNETT S. “The stability of supply chains”. International Journal of Production Research, vol.40, no.2, pp.459-475, 2002.

[3] WARBURTON R D H, DISNEY S M, TOWILL. “Further insights into the stability of supply chains”. International Journal of Production Research, vol.42, no.3, pp.639-648, 2004.

OTHER PREVIOUS METHODS:

i) Exact Evaluation of A Two-Level Inventory System With Information Sharing.

ii) Inventory management optimization model with database synchronization through internet network.

Retail inventory management is the process of ensuring you carry merchandise that shoppers want, with neither too little nor too much on hand. By managing inventory, retailers meet customer demand without running out of stock or carrying excess supply.

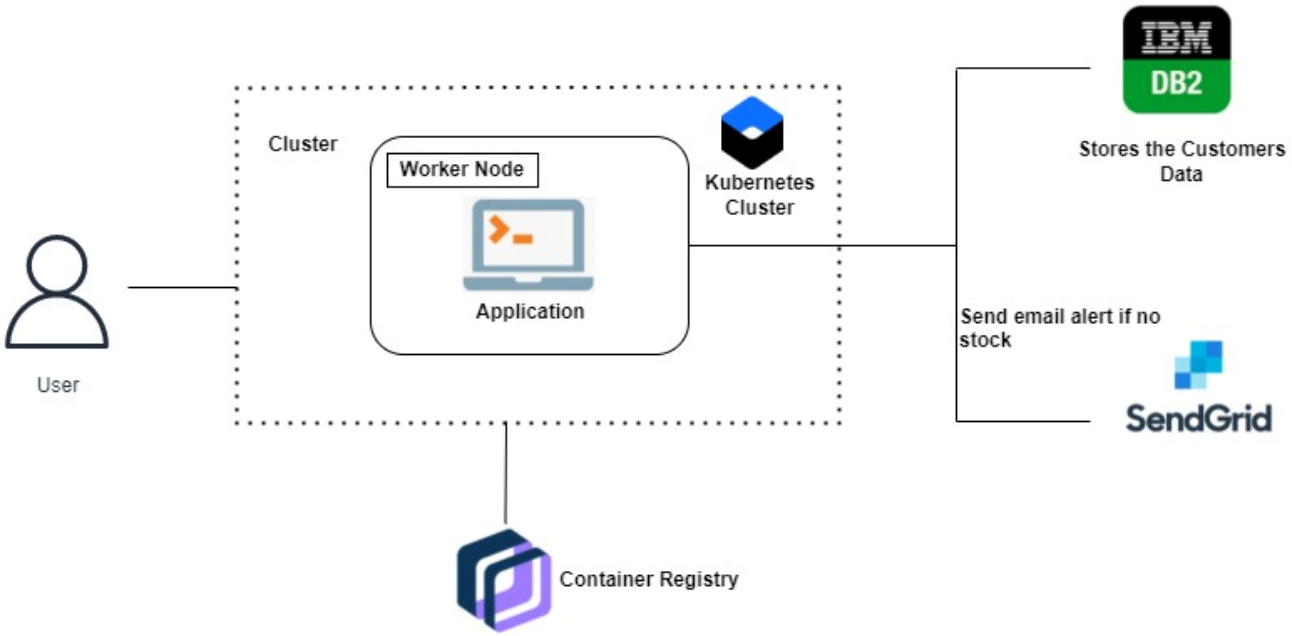
In practice, effective retail inventory management results in lower costs and a better understanding of sales patterns. Retail inventory management tools and methods give retailers more information on which to run their businesses. Applications have been developed to help retailers track and manage stocks related to their own products.

Once retailers successfully log in to the application they can update their inventory details, also users will be able to add new stock by submitting essential details related to the stock. They can view details of the current inventory. The System will automatically send an email alert to the retailers if there is no stock found in their accounts. So that they can order new stock.

Skills Required:

IBM Cloud, HTML,Javascript,IBM Cloud Object Storage, Python-Flask, Kubernetes, Docker,IBM DB2,IBM Container Registry

TECHNICAL ARCHITECTURE:



CLUSTER:

Clusters are typically defined as collections or groups of items with similar or different characteristics. The group or collection of items constitutes a cluster.

i)Enterprise computing
ii)Personal computing
iii)Terminals and workstations.

KUBERNETES CLUSTER:

A Kubernetes cluster is a set of nodes that run containerized applications.Kubernetes clusters allow containers to run across multiple machines and environments: virtual, physical, cloud-based, and on-premises.
Kubernetes clusters are comprised of one master node and a number of worker nodes.

CONTAINER REGISTRY:

A container registry is a repository—or collection of repositories—used to store and access container images. Container registries can support container-based application development, often as part of DevOps processes.

SENDGRID:

SendGrid is a cloud-based SMTP provider that allows you to send email without having to maintain email servers. SendGrid manages all of the technical details, from scaling the infrastructure to ISP outreach and reputation monitoring to whitelist services and real time analytics.