International Journal of Current Engineering and Technology
E-ISSN 2277 – 4106, P-ISSN 2347 – 5161

Available at http://inpressco.com/category/ijcet

Research Article

Inventory Management System using STRUTS Framework Architecture

Shreyas Borwankar and Dr. Mininath Nighot

Computer Engg, D Y Patil College of Engineering, Pune, Maharashtra, India

Received 10 Nov 2020, Accepted 10 Dec 2020, Available online 01 Feb 2021, **Special Issue-8 (Feb 2021)**

Abstract

Development of web technology and its growth lead to a large volume of data present in the world wide web for users, also a lot of data is generated via sites present on the web. The Internet has become a platform for various things such as online learning, social networking, exchanging ideas, online marketing and sharing opinions. Social networking sites like Facebook, Google+, Twitter are rapidly becoming popular as they allow people to express their views about different topics, have a discussion within communities, independent of the location post messages across the world. Natural language processing, sentiment analysis these are continuously evolving fields, there is a vast scope of development in these fields. Sentiment analysis of Twitter data is mainly focused in this paper. On Twitter, information is present in form of tweets where opinions are heterogeneous, highly unstructured and are either negative or positive, or neutral in some cases. Various machine learning algorithms are used for sentiment analysis of tweets and their comparison is carried out in this paper.

Keywords: *Twitter, Sentiment Analysis, Machine Learning*

Introduction

Inventory is a technique of maintaining the inventory at different authorized level, so that the production and management applied on different level. Inventory Management is tracking of Information Services and data. In this system four main areas are concern: - • Maintaining enough inventory- An organization needed to manage the inventory such that (Stock, Employee info, Product, PO, Quotation) Management.

- Authorization access in inventory Authorization is important for security purpose. Authorization is the function of specifying access rights to resources related to information security in general and to access control in particular.
- Tracking Inventory

The tracking system is important in inventory system because it will use for track the inventory and analyse the inventory.

- Maintain Flow of control

In this flow of control manage the level wise control to handle inventory system.

Literature Survey

1)Development of Inventory management System.
This paper introduces Agent technology into domestic storage management and uses the autonomy, re activity and sociality of Agent to realize the seamless connection among enterprises by defining interaction and cooperation mechanisms among different Agents, thereby achieving the aim of reducing and even eliminating inventory, so it is a feasible thought and method for enterprises to realize effective storage management. This paper mainly designs a storage management system model based on multi-Agent and describes main Agent cooperation processes of the system.

2) Design and Application of Java Web Software Architecture Based on the SH Middleware.
Some technical problems in developing Java Web application software are discussed. With introduction of SH (Struts + Hibernate) middleware, the advantages of SH in J2EE software development are analysed, and a feasible B/S software architecture is proposed in this paper. The interface coupling between different layers of software architecture reduces the influence on the whole software system caused by the change of certain layer. At presentation layer, utilizing Struts2 frame can separate the display and control at the data layer. Therefore, the mapping between the object and the relation is realized with the use of Hibernate3 framework. In order to manage Hibernate systematically and to provide services for DAO, it is necessary to design Hibernate management tool class. In such framework, POJO is always used as a transfer parameter between different layers from the front stage JSP to the back stage Hibernate. It encapsulates

the client data at presentation layer and maps the database table at the data layer.

3)Agricultural Inventory Management System.

Agricultural Inventory Management System makes agricultural production pattern accessible to the detail of agricultural parcel and farmer. Moreover, animal and agricultural mechanization assets and their details are recorded at village and farmer level. Thus, it becomes possible to produce agricultural statistics which leads national agricultural policies andstrategies by using reliable, insight data and support national commerce policies by annually, semiannually, quarterly and monthly periods. In addition, with online up to-date data warehouse and data mining services, on-field checks of agricultural supports; monitoring agricultural activity seasonally; planning and timing activities like expropriation and land consolidation that can harm the crops; detection of production and farmers that are affected by natural disasters are made possible. System is controlled and managed by Control Centre.

4) Business Processes Solution with Apache Struts Framework,Su Su Khin,

Department of Engineering Physics, Mandalay Technological University, Mandalay. A web application is a software system that contains the computing and networking technologies required for use through web browsers on the Internet Web application has now become one of the major forms of the information systems over the computer network based on the World Wide Web technology. The fundamental feature of web applications is that its behavior is specified by the interaction between the environment and the system. One of the major platforms to build web applications is J2EE based on the MVC model. A framework gives a concrete method for the building pattern. A framework based on the MVC model such as Struts. This paper is concerned with the use of Apache Struts Framework. This framework is analyzed at designing educational Web Application "Library" Reservation System and focused on the action processes of model (Model) have been created new component.

5) An Efficient Implementation of SHA-1 Hash Function.

The latest cryptographical application demands in a typical embedded system demand both high speed and small area. Hash function has been widely used in the digital signature, message authentication. In this paper, a new area efficient SHA-1 implementation is proposed. The proposed design was captured using VHDL hardware language and also implemented on Xilinx FPGA. The correctness of the functionality has been verified using simulation tools and the test vectors. A comparison between the proposed SHA-1 hash function implementation with other related works show that it occupies very small area while also achieving a high throughput, thus it could be adopted in an embedded system where area constraint is a concern.

Issues of Inventory

In this organization Inventory Management is main issue, for managing the product, employee and supplier details, a tracking the progress. In this Inventory Management System using all issue will be cover on this particular organization, because in this system manage the product, supplier as well as employee details also. And most important module in this inventory which will be use an encryption technique, for secure login session. This Inventory Management System will be access in Offline network, and it will be also support multi-user inventory system. This inventory management system is not Desktop application it will be a Web-Based application. most important thing is in this web-based application will be made using a struts framework architecture because it will provide unified framework for deploying JSP and Servlet webpages.

Proposed system

This Inventory System will focus on individuals and small businesses' companies. The primary use for the Inventory Management System is to track and monitor sales and available inventory of a business system. Moreover, the functionalities needed by Organization are Items, Orders, Suppliers, Customers, Users and Authentication, Report, Billing". In this inventory system manage the inventory on web-based application with authentication. When organization needed to maintain the daily work, daily selling, Producing Stock Management, Employee information, Purchase order, Quotation, Billing, Monthly Report. This system is a using JAVA (JSP) technology use for developing the inventories WEB-Based Application. Using the struts framework many securities are provided with authentication algorithm also applied by using java source code because java platform independent language and one more thing it will supported by JAVA programming languages. In this system will be use 3layerd architecture for making the operation on inventory. First layer will be used for a GUI user side, second layer will be operational layer and third layer will be database side. The database is used for MySQL for store and updates the data in inventory for managing and eliminating the cost of managing the inventories.

Software Process

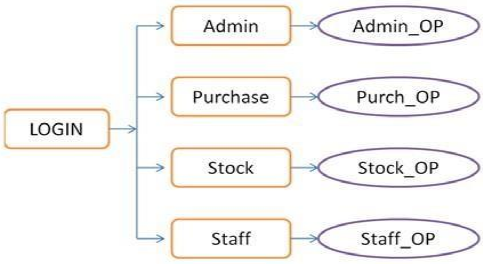

Fig.4.1.1 Inventory Management System Process

i. Login: All the Module have login sessions which will be helpful for security purpose.
Every User have particular Login-Id and Password.

ii. Admin: Admin have all authority which is handled Purchase, Stock, Staff module. Admin access all the module for View, Update and
Delete. Admin able to control the all module authority.

iii. Purchase: Purchase module purchases the product if the product available or not. Purchase module generates purchase order. Purchase orders take request from staff and stock when the products want to purchase.

iv. Stock: Stock module Manage the product import export and tracing the sale product and manage the stock (Products)

v. Staff: Staff module is employee-based module, this module only for the get the product for stock module and assemble the client location.

Internal Process

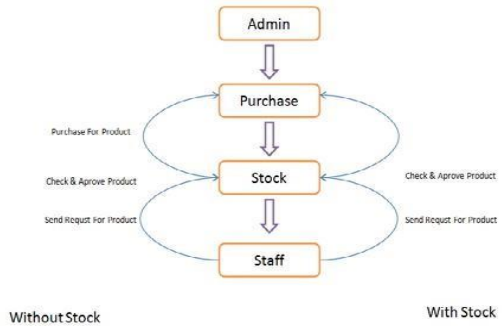

Fig 4.2.1 Internal System Process

With Stock: Staff panel is sent request to the stock panel for product then stock panel will be checked the product in stock (IN/OUT Stock) when the product in stock then the stock panel should be approving the request and then take this product for staff (Employee).

Without Stock: Staff panel is send request to the stock panel for product then stock panel will be checked the product in stock (IN/OUT Stock) when the product Out of stock then the stock panel should be approve and send the request to purchase panel and then purchase panel should be purchase the product to supplier, and then take this product for staff(Employee) using stock panel.

Algorithm
MySQL sha1() function calculates a SHA-1 160-bit checksum for a string. The function returns a value as a binary string of 40 hex digits. If the string supplied as argument is NULL, the function returns NULL.

Eg. SHA1(str)

Query for SHA Encryption
SELECT SHA1('admin');

Explanation: -
The above MySQL statement returns SHA1 checksum of admin string. The return value is

d228359c41174cede6b3c401eb8d11746a4ad1eb.

Mathematical Model

- Let S be the solution perspective of the given problem such that,
- **S**= s, x, y, DD, NDD, Fme, cpucorecnt, failure, success,
- **S** - s be the initial state
- **X** - x be the input of the system.
- **Y** - y be the output of the system.
- **Fme** - be the main algorithm resulting into outcome y.
- **DD** - The DD be the deterministic data,it help identifying the user Validation record.
- **NDD** - NDD be the non-deterministic data of the system to be solved. These being

computing function or CPU time or Alu time complexity.

- **CPU core cnt** -is the no of core of the CPU.
- **Success**- desired output is generated.
- **Failure** -Desired output not generated, forced exit due to system error.
- **In our problem statement:**
  Input X=X1 Initial success can be defined by giving Login validation details

- **Input Analysis:**
- Let

X1={x0,x1,x2,x3,x4,x5,x6,x7,x8,x9,x10,x11 ,x12,x13,x14,x15,x16,x17,x18,x19}

- Be such that
- **x0** be the id.
- **x1** be the Name.
- **x2** be the Address.
- **x3** be the Contact No.

- **x4** be the email-id.
- **x5** be the Quantity.
- **x6** be the Price.
- **x7** be the Vendor Name.
- **x8** be the User Type.
- x9 be the password.
- x10 be the date.
- x11 be the month.
- x12 be the stock id.
- x13 be the Quantity In.
- x14 be the Quantity Out.
- x15 be the Site Location.
- x16 be the User Id.
- x17 be the User Name.
- x18 be the Quotation Id.
- x19 be the Billing Id.
- Memory requirement based on the data:
- These are the necessary system dependencies to be included.
- Hence,
- F = {f1,f2,f3,f4,f5,f6,f7,f8,f9,f10,f12,f13}
- f1 be the Purchase Order.
- f2 be the Billing History.
- f3 be the Login.
- f4 be the Logout.
- f5 be the Add New User.
- f6 be the Display.
- f7 be the Export.
- f8 be the Edit.
- F9 be the Save.
- F10 be the Enquiry Details.
- F11 be the Follow Up.
- F12 be the Quotation Info.
- F13 be the Billing Info.
- Outcome analysis:
- Let Fme be a function that perform the core function in the problem to be executed successfully. Fme- y1 - x1

Results

In this paper, using Apache Struts Framework is analyzed at designing Web Application Inventory System, as shown in figure 5.1. Struts framework architecture based MVC model to managed correctly action and action flow of system. A web-based system has control according to authority, so that increase in speedup and efficiency of inventory system.

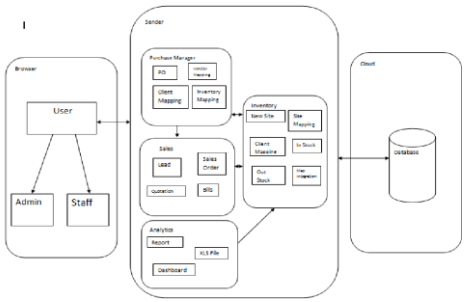

Fig 5.1 Inventory Management System

Conclusion

This paper has presented an inventory management system, the database needs to be updated every day or before inventories so that new eligible data may be enrolled and those who are useless are removed from the database. In this paper the inventory related discussed and in general and the focus is on making the Inventory system more user friendly and faster than other. Also, we have discussed Struts framework architecture based MVC Model technique to managed correctly action to view and view to action flow. This Inventory management system helps a particular organization or companies to manage the inventories without any problem.

References

[1]. Yang Fan, "Development of Inventory management System", Information Management and Engineering (ICIME), 2010 The 2nd IEEE International Conference on: Chengdu.
[2]. WANG Jing; CHEN Yue -feng,"Design and Application of Java Web Software Architecture Based on the SH Middleware", Database Technology and Applications (DBTA), 2010 2nd International Workshop on: Wuhan.
[3]. Puja S.Prasad, Hitesh R.Yerekar, Parag G.Satpute, Gaurav P.Borkar, Ajinkya S. Shendre, "ERP Sales and Inventory Management System" International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-3, Issue-6, January 2013.
[4]. Hakan ERDEN,"The Agricultural Inventory Management System ", Agro-Geoinformatics (Agro-eoinformatics),2015 Fourth International Conference on Istanbul
[5] Business Processes Solution with Apache Struts Framework Su Su Khin Department of Engineering Physics, Mandalay Technological University, Mandalay.
[6]. An Efficient Implementation of SHA-1 Hash Function Guoping Wang Department of Engineering Indiana University Purdue University Fort Wayne
[7]. Design of SHA-1 Algorithm based on FPGA Cheng Xiao-hui, Deng Jian-zhi College of Information Science and Engineering Guilin University of Technology