Smart Inventory Management System

1. **Problem Definition**

Most of the stock management companies `are putting more manual effort to manage transactions and historical data used in various godowns.

Smart Inventory Management System is an online software application which fulfils the requirement of a typical Stock Analysis in various godowns. It provides the interface to users in a graphical way to manage the daily transactions as well as historical data. Also provides the management reports like monthly inwards, monthly deliveries and monthly returns.

* 1. **Business Requirement Analysis:**

It is a Stock Storage department related to Reliance Industries which sells different items to the public through their retail outlets like Reliance Fresh, Reliance Footwear etc. Since the company needs to maintain all their goods and items at a separate storage area which requires separate department also for tracking the details related to in and outs of all godowns. The in and out’s will henceforth be referred to as inwards and outwards.

Prior to storage of goods this department has to manage different godowns, product wise stocks in each godown, inwards and outwards of each godown. It has to hold the details of all gowdowns like godown id, godown location, capacity in quintals, godown manager and start date. Whenever a product comes into a particular godown then the details like Godown ID, Name of the Supplier, Date of Supply, Item Name, Invoice No, quantity, received by, receipt no and bill checked by need to be stored in the inwards register of the that godown by godown manager.

Whenever stock comes out from the godown then the details like Godown ID, Item Name, Invoice No, Date of Supply, Date of delivery, Delivered to, Quantity, Purpose (Sale/Service), Receipt No, Bill Value, Bill Checked by need to be stored in the outwards register by the godown manager.

Whenever a customer returns a stock to the gowdown then we need to check the reason for returning that item. If it is a damage then the details like Item Name, Date of delivery, date of return, Return Godown ID, Quanity, invoice no, returned by, receipt no, bill value and checked by needs to stored in returns register. If the reason is order cancelled then we need to update the stock no in that godown. Checking for particular inwards, outwards or returns entry info takes lot of time here.

1. **Use Case**

**2.1 Users:**

The major functionality of this product is divided into two categories.

1. Administrative User Functions.

2. Normal User Functions.

* + 1. **Administrative User Functions:**

Administrators can perform the following task

• Create new users

• Change the password

• Add/Update the details of Employees of the Company

• Add the information about the Godowns

• Can view the information about the Inwards

• Can view the information about the Deliveries

• Can view the information about the Returns

• Can view/generate management reports

* + 1. **Shopping cart management like amazon, flipkart**
* Register user with basic details and Sign In
* Display list of items available
* User can pick item and put in to its cart or remove item from the cart
* Generate invoice for the user purchased items
* Provide some discount based on occasion
* Update the items count based on user operation.

Example: if particular 10 mobiles are available if user purchased one mobile then remaining 9 mobile will be available

**3.Back end functionality:**

Store and update employee details in DB

Store and update godowns details in DB

Store and update Supplier details in DB

Store and update Product details in DB

Store and update Customer details in DB

Store and update Inward and Outward Registers in DB

Create API for customer purchasing product

Create API for adding employee, product, customer, supplier records in DB

Create API for adding entry in InwardRegister during product arrival at godown

Create API for adding entry in OutwardRegister during product dispatch to customer.

Create API to process purchase and refund of customer product online

Create API for adding new Employees and Managers of Godowns

Create API for employee and manager login for performing ops

Implement proper security in the application.

Reporting APIs’

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\* REPORT API 1:

\* Given the supplier ID, give following details of products supplied by the supplier.

\* # productTitle, productQuantity, productPrice, supplierName, supplierCity

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\* REPORT API 2:

\* Given the customerId, give following details of products purchased by the customer.

\* [{"customerName",2}, {"customerName",3}]

\* Hint: use HashMap<Key,value> Key: customer Name, value if number of products purchased.

\* Steps:

\* 1.First fetch all customers from the DB List<Customer> list

\* 2. Iterate over the list and fetch number of products bought by each cutomer and save it

\* in HashMap with customer name as key and count as value.

\* 3. return the map

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\* REPORT API 3:

Display outwardRegisterEntries in following format. Should be accessed only by ADMIN

# productTitle, productQuantity, GodownLocation godownManager, recieptNo

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\* REPORT API 4:

\* Generate list of godown details to be accessed only by ADMIN

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/\* Other APIs:

\* All controllers/ Entities must have following 5 APIs.

\* a. POST

\* b. GETALL

\* c. GETOne

\* d. Delete

\* e. Update

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Note: All entities must have CRUD apis’ in their controller.

**4.UI Screens**

**Login Page**

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Homepage will be displayed like this.

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- Please refer Amazon/flipkart screens for your reference or UI can be designed as per individual’s choice.

- Just make sure UI should be professional. Easily navigable and should be properly designed.

**5. Technology Stack:**

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| --- | --- | --- |
|  | Option 1 | Option 2 |
| Front end | React JS | React JS |
| Back end | NodeJS, MySQL | Spring Boot, Spring Security, Spring Web, Spring JPA, Hibernate, MySQL, Tomcat, Rest APIs |
| Devops | Project should be uploaded on GIT.  For java create Maven projects | |