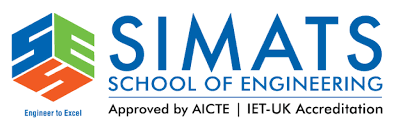
# Title page:



INVENTORY CONTROL MANAGEMENT SYSTEM

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**CASE STUDY:**

**"Optimizing Inventory Management: Implementing an Inventory Control Management System at Companies or Electronics"**

**Context:** In the dynamic landscape of modern business, effective Inventory Control Management is critical for the success of any organization. This involves overseeing the acquisition, storage, and distribution of goods to ensure optimal levels of inventory that meet customer demand while minimizing carrying costs.

**The Problem:** However, many organizations struggle with inefficient inventory management practices. This leads to issues such as overstocking, stockouts, and obsolete inventory, all of which have a detrimental impact on profitability, customer satisfaction, and operational efficiency.

**Impact and Consequences:** The consequences of poor inventory management are multifaceted. Excessive inventory ties up capital, increases storage costs, and may lead to product obsolescence. Conversely, stockouts result in lost sales, dissatisfied customers, and potential damage to the company's reputation.

**INTRODUCTION:**

Inventory control management system (ICMS) plays a crucial role in the operations of businesses across various industries. Effective management of inventory ensures that organizations can meet customer demand, minimize costs, and maintain competitive advantages in the marketplace. This introduction provides background information on the subject of the case study, focusing on the importance of inventory control management and its impact on business operations**.**

**Objectives:**

1.To optimize inventory levels to meet customer demand while minimizing carrying costs.

2.To reduce stockouts and backorders, thereby enhancing customer satisfaction and retention.

3.To streamline procurement processes and supplier relationships to improve lead times and decrease holding costs.

4.To implement data-driven demand forecasting techniques to enhance accuracy and responsiveness in inventory planning.

**Scope:** This project will focus on evaluating and improving the inventory control management practices within Organization. It encompasses the analysis of historical sales data, procurement processes, and supplier relationships.

**Methodology:** The approach will involve a comprehensive analysis of historical sales data, lead times, carrying costs, and supplier performance. Advanced inventory optimization models and demand forecasting techniques will be employed to develop data-driven strategies.

**Findings:**

The findings indicate that Inventory Control Management Systems play a crucial role in enhancing operational efficiency for businesses. By implementing effective ICMS, organizations can achieve better inventory accuracy, reduce stockouts, and minimize carrying costs. Through features like demand forecasting and replenishment planning, businesses can optimize their inventory levels and improve overall performance

**Expected Outcomes:**

1.Reduction in carrying costs by X% within the first six months.

2.Decrease in stockouts by X% leading to increased customer satisfaction and revenue.

3.Improvement in inventory turnover rate by X% indicating better capital utilization.

4.By addressing these issues in organization, aims to achieve efficient and cost-effective inventory control management, ultimately enhancing its competitive edge in the market.

**Technological Infrastructure**:

**Inventory Management Software**: Invest in an inventory management system (IMS) or software. This should be capable of tracking and managing stock levels, orders, sales, and other relevant data.

**Barcoding or RFID Systems**: Implement barcoding or RFID (Radio- Frequency Identification) systems for accurate and efficient tracking of individual items.

**Point of Sale (POS) Integration**: If applicable, integrate your inventory management system with your POS system to ensure real-time updates on sales and stock levels.

**Data Backup and Security**: Implement robust data backup and security measures to protect critical inventory data from loss or unauthorized access.

**Organizational Procedures**:

**Inventory Classification**: Categorize your inventory based on factors like demand, value, and turnover rate. This can help in prioritizing and managing stock levels effectively.

**Reorder Point and Safety Stock Levels**: Establish reorder points and safety stock levels to ensure you don't run out of essential items and avoid overstocking.

**Supplier Management**: Develop clear procedures for ordering and receiving inventory from suppliers. This may involve setting up a reliable procurement process.

**Cycle Counting and Auditing**: Implement a system for regular cycle counting and audits to verify physical inventory levels against recorded levels in the system.

**Code In C++:**

**// This is a program system for tracking inventory levels, orders and sales and also creation of**

**// bills from sales.**

**#include<iostream>**

**#include <fstream>**

**#include <string>**

**#include <vector>**

**#include <iomanip>**

**#include <fstream>**

**#include <ostream>**

**using namespace std;**

**//Global variable for total of items entered**

**int productsub[100];**

**int productsadd[100];**

**ofstream file;**

**ifstream ifile;**

**string filename;**

**int out;**

**float itemtotal;**

**string itemspurchased;**

**string date;**

**int productid;**

**int itemsnum;**

**int totalproducts;**

**int defaultamount;**

**int newamount;**

**int price[9];**

**int subproductsnum[100];**

**int productsnum[100];**

**int newproductsnum[100];**

**string products[100] = {"Milk", "Rice", "Sugar", "Butter", "Bread", "Meat", "Fish", "Cereal", "Candy"};**

**//function prototypes**

**void displaystock(); // 4.**

**void defaultstock();**

**void items(); // 1.**

**void search();**

**void exportfile();**

**void menu();**

**void addproducts(); // 2.**

**void deleteproducts(); //5.**

**void disstock();**

**void viewstock();**

**void addmoreproducts();**

**int main()**

**{**

**char yes;**

**system("cls");**

**cout << " PIES Groceries Inventory Management System program\n";**

**cout << " Press Any Key to Proceed\n";**

**cin >> yes;**

**system("cls");**

**menu();**

**return 0;**

**}**

**void menu()**

**{**

**int menunum;**

**cout << " Menu \n";**

**cout << " \*\*\*\*\*\*";**

**cout << "\n\n1.Add Products to Stock\n";**

**cout << "2.Add Sales Made(This would Make changes in your number of units)\n";**

**cout << "3.Generate bill(Can only Generate a Bill for one Item purchased)\n";**

**cout << "4.Display Current Stock & save Data to file\n";**

**cout << "5.Display Old Stock and Display Last Data saved\n";**

**cout << "6.Search Item in Stock\n";**

**cout << "7.Exit Program\n\n";**

**cout << "Enter your choice here:";**

**cin >> menunum;**

**if (menunum == 1)**

**{**

**system("cls");**

**addproducts();**

**}**

**else if (menunum == 2)**

**{**

**system("cls");**

**items();**

**}**

**else if (menunum == 3)**

**{**

**system("cls");**

**cout << "What is Today's Date?\n";**

**cout << "Enter here: ";**

**cin.ignore();**

**getline(cin, date);**

**exportfile();**

**}**

**else if (menunum == 4)**

**{**

**system("cls");**

**displaystock();**

**}**

**else if (menunum == 5)**

**{**

**system("cls");**

**disstock();**

**}**

**else if (menunum == 6)**

**{**

**system("cls");**

**search();**

**}**

**else**

**{**

**system("cls");**

**cout << "BYEEEEEE, HOPE TO SEE YOU AGAIN :)";**

**}**

**}**

**void exportfile()**

**{**

**char exit;**

**int itembought;**

**string filename;**

**ofstream file;**

**cout << "What would you want the recent bill to be saved as? ";**

**cin >> filename;**

**system("cls");**

**file.open(string(filename + ".txt").c\_str());**

**cout << "MilkID:0, RiceID:1, SugarID:2, ButterID:3, BreadID:4, MeatID:5, FishID:6, CerealID:7, CandyID:8\n";**

**cout << "What was bought? Enter Product ID:";**

**cin >> itembought;**

**cout << "Writing to file...\n";**

**cout << "About to finish...\n";**

**file << "Product Bought: " << products[itembought] << "\n";**

**file << "Amount to Pay: Php" << price[itembought] << "\n";**

**file << "Date :" << date << "\n";**

**file << "\nThank You for doing business with us, Hope to see you soon!";**

**cout << "\nDone! You can print out the bill now!";**

**file.close();**

**cout << "Press any key & <enter> to skip to menu";**

**cin >> exit;**

**if (exit != '/')**

**{**

**menu();**

**}**

**}**

**void addproducts()**

**{**

**int choice;**

**cout << "1. Add products to stock" << endl;**

**cout << "2. Go to menu " << endl;**

**cout << "3. View Stock" << endl;**

**cout << "4. Add more products" << endl;**

**cout << "Enter here: ";**

**cin >> choice;**

**if (choice == 1)**

**{**

**system("cls");**

**for (int p = 0; p < 9; p++)**

**{**

**cout << "\nEnter Amount of " << products[p] << ": ";**

**cin >> productsnum[p];**

**cout << "Enter price of " << products[p] << ": Php";**

**cin >> price[p];**

**}**

**}**

**else if (choice == 2)**

**{**

**menu();**

**}**

**else if (choice == 3)**

**{**

**viewstock();**

**}**

**else if (choice == 4)**

**{**

**addmoreproducts();**

**}**

**else**

**{**

**addproducts();**

**}**

**displaystock();**

**}**

**void addmoreproducts()**

**{**

**system("cls");**

**cout << "\nWhich Product do you want to add? Enter It's ID here: ";**

**cin >> productid;**

**if (productid == 0)**

**{**

**cout << "Enter amount of Milk: ";**

**cin >> productsadd[0];**

**newproductsnum[0] = productsnum[0] + productsadd[0];**

**addproducts();**

**}**

**else if (productid == 1)**

**{**

**cout << "Enter amount of Rice: ";**

**cin >> productsadd[1];**

**newproductsnum[1] = productsnum[1] + productsadd[1];**

**addproducts();**

**}**

**else if (productid == 2)**

**{**

**cout << "Enter amount of Sugar : ";**

**cin >> productsadd[2];**

**newproductsnum[2] = productsnum[2] + productsadd[2];**

**addproducts();**

**}**

**else if (productid == 3)**

**{**

**cout << "Enter amount of Butter: ";**

**cin >> productsadd[3];**

**newproductsnum[3] = productsnum[3] + productsadd[3];**

**addproducts();**

**}**

**else if (productid == 4)**

**{**

**cout << "Enter amount of Bread: ";**

**cin >> productsadd[4];**

**newproductsnum[4] = productsnum[4] + productsadd[4];**

**addproducts();**

**}**

**else if (productid == 5)**

**{**

**cout << "Enter amount of Meat: ";**

**cin >> productsadd[5];**

**newproductsnum[5] = productsnum[5] + productsadd[5];**

**addproducts();**

**}**

**else if (productid == 6)**

**{**

**cout << "Enter amount of Fish: ";**

**cin >> productsadd[6];**

**newproductsnum[6] = productsnum[6] + productsadd[6];**

**addproducts();**

**}**

**else if (productid == 7)**

**{**

**cout << "Enter amout of Cereal: ";**

**cin >> productsadd[7];**

**newproductsnum[7] = productsnum[7] + productsadd[7];**

**addproducts();**

**}**

**else if (productid == 8)**

**{**

**cout << "Enter amount of Candy: ";**

**cin >> productsadd[8];**

**newproductsnum[8] = productsnum[8] + productsadd[8];**

**addproducts();**

**}**

**else**

**{**

**cout << "No product with that ID, try again!\n\n";**

**addproducts();**

**}**

**}**

**//Function for items the user enters**

**void items()**

**{**

**int itemsnum;**

**char exit;**

**cout << "Get ready to enter item(s) Purchased\n";**

**cout << "Press 'e' & <enter> to skip to menu or any other key & <enter> to proceed\n\n";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else**

**{**

**cout << "MilkID:0, RiceID:1, SugarID:2, ButterID:3, BreadID:4, MeatID:5, FishID:6, CerealID:7, CandyID:8\n";**

**cout << "Enter ID of item Purchased: ";**

**}**

**cin >> productid;**

**if (productid == 0)**

**{**

**cout << "Enter amount of Milk: ";**

**cin >> productsub[0];**

**subproductsnum[0] = productsnum[0] - productsub[0];**

**items();**

**}**

**else if (productid == 1)**

**{**

**cout << "Enter amount of Rice: ";**

**cin >> productsadd[1];**

**subproductsnum[1] = productsnum[1] - productsub[1];**

**items();**

**}**

**else if (productid == 2)**

**{**

**cout << "Enter amount of Sugar : ";**

**cin >> productsub[2];**

**subproductsnum[2] = productsnum[2] - productsub[2];**

**items();**

**}**

**else if (productid == 3)**

**{**

**cout << "Enter amount of Butter: ";**

**cin >> productsub[3];**

**subproductsnum[3] = productsnum[3] - productsub[3];**

**items();**

**}**

**else if (productid == 4)**

**{**

**cout << "Enter amount of Bread: ";**

**cin >> productsadd[4];**

**subproductsnum[4] = productsnum[4] - productsub[4];**

**items();**

**}**

**else if (productid == 5)**

**{**

**cout << "Enter amount of Meat: ";**

**cin >> productsub[5];**

**subproductsnum[5] = productsnum[5] - productsub[5];**

**items();**

**}**

**else if (productid == 6)**

**{**

**cout << "Enter amount of Fish: ";**

**cin >> productsub[6];**

**subproductsnum[6] = productsnum[6] - productsub[6];**

**items();**

**}**

**else if (productid == 7)**

**{**

**cout << "Enter amout of Cereal: ";**

**cin >> productsub[7];**

**subproductsnum[7] = productsnum[7] - productsub[7];**

**items();**

**}**

**else if (productid == 8)**

**{**

**cout << "Enter amount of Candy: ";**

**cin >> productsub[8];**

**subproductsnum[8] = productsnum[8] - productsub[8];**

**items();**

**}**

**else**

**{**

**cout << "No product with that ID, try again!\n\n";**

**items();**

**}**

**}**

**void calculatestock()**

**{**

**for (productid = 0; productid < 9; productid++)**

**{**

**productsnum[productid] = productsnum[productid] + newproductsnum[productid];**

**subproductsnum[productid] = newproductsnum[productid] - productsub[productid];**

**}**

**}**

**void displaystock()**

**{**

**cout << "ProductID\t\t"**

**<< "Products"**

**<< "\t"**

**<< "Num of Products"**

**<< "\t\t"**

**<< "New Num of Products"**

**<< "\tUnit Price" << endl;**

**for (productid = 0; productid < 9; productid++)**

**{**

**subproductsnum[productid] = productsnum[productid] - productsub[productid];**

**productsnum[productid] = productsnum[productid] + newproductsnum[productid];**

**cout << productid << "\t\t\t" << products[productid] << "\t\t\t" << productsnum[productid] << "\t\t" << subproductsnum[productid] << "\t\t\t Php" << price[productid] << endl;**

**}**

**file.open("DefaultSTOCK");**

**file << "ProductID\t\t"**

**<< "Products"**

**<< "\t"**

**<< "Num of Products"**

**<< "\t\t"**

**<< "New Num of Products"**

**<< "\t\tUnit Price" << endl;**

**for (productid = 0; productid < 9; productid++)**

**{**

**file << productid << "\t\t\t" << products[productid] << "\t\t\t" << productsnum[productid] << "\t\t\t" << subproductsnum[productid] << "\t\t\t Php" << price[productid] << endl;**

**}**

**cout << "\nWriting to file...\n";**

**cout << "Done writing new stock to file....\n";**

**cout << "You file is automatically saved as ''DefualtSTOCK'' ";**

**int out;**

**cout << "press any number to proceed";**

**cin >> out;**

**if (out != 0)**

**{**

**menu();**

**}**

**}**

**void disstock()**

**{**

**ifile.open("DefaultSTOCK");**

**if (ifile.is\_open())**

**{**

**string getcontent;**

**while (getline(ifile, getcontent))**

**{**

**cout << getcontent << endl;**

**}**

**}**

**int out;**

**cout << "\n\npress any number to proceed";**

**cin >> out;**

**if (out != 0)**

**{**

**menu();**

**}**

**}**

**void viewstock()**

**{**

**ifile.open("DefaultSTOCK");**

**if (ifile.is\_open())**

**{**

**string getcontent;**

**while (getline(ifile, getcontent))**

**{**

**cout << getcontent << endl;**

**}**

**}**

**int product\_menu;**

**cout << "\nPress any number to go to continue ";**

**cin >> product\_menu;**

**if (product\_menu != 0)**

**{**

**system("cls");**

**addproducts();**

**}**

**file.close();**

**}**

**void search()**

**{**

**int productid;**

**char exit;**

**cout << "Press 'e' & <enter> to exit or & other key to proceed & <enter>" << endl;**

**cin >> exit;**

**if (exit != 'e')**

**{**

**cout << "MilkID:0, RiceID:1, SugarID:2, ButterID:3, BreadID:4, MeatID:5, FishID:6, CerealID:7, CandyID:8\n";**

**cout << "What product's information do you want to see? Enter it's ID here: ";**

**cin >> productid;**

**if (productid == 0)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[0] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[0] << "\n";**

**cout << "UNIT PRRICE:" << price[0] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 1)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[1] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[1] << "\n";**

**cout << "UNIT PRRICE:" << price[1] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 2)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[2] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[2] << "\n";**

**cout << "UNIT PRRICE:" << price[2] << endl;**

**}**

**else if (productid == 3)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[3] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[3] << "\n";**

**cout << "UNIT PRRICE:" << price[3] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 4)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[4] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[4] << "\n";**

**cout << "UNIT PRRICE:" << price[4] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 5)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[5] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[5] << "\n";**

**cout << "UNIT PRRICE:" << price[5] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 6)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[6] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[6] << "\n";**

**cout << "UNIT PRRICE:" << price[6] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 7)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[7] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[7] << "\n";**

**cout << "UNIT PRRICE:" << price[7] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 8)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[8] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[8] << "\n";**

**cout << "UNIT PRRICE:" << price[8] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else**

**{**

**system("cls");**

**search();**

**}**

**}**

**else**

**{**

**menu();**

**}**

**}// This is a program system for tracking inventory levels, orders and sales and also creation of**

**// bills from sales.**

**#include<iostream>**

**#include <fstream>**

**#include <string>**

**#include <vector>**

**#include <iomanip>**

**#include <fstream>**

**#include <ostream>**

**using namespace std;**

**//Global variable for total of items entered**

**int productsub[100];**

**int productsadd[100];**

**ofstream file;**

**ifstream ifile;**

**string filename;**

**int out;**

**float itemtotal;**

**string itemspurchased;**

**string date;**

**int productid;**

**int itemsnum;**

**int totalproducts;**

**int defaultamount;**

**int newamount;**

**int price[9];**

**int subproductsnum[100];**

**int productsnum[100];**

**int newproductsnum[100];**

**string products[100] = {"Milk", "Rice", "Sugar", "Butter", "Bread", "Meat", "Fish", "Cereal", "Candy"};**

**//function prototypes**

**void displaystock(); // 4.**

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**void exportfile();**

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**void addproducts(); // 2.**

**void deleteproducts(); //5.**

**void disstock();**

**void viewstock();**

**void addmoreproducts();**

**int main()**

**{**

**char yes;**

**system("cls");**

**cout << " PIES Groceries Inventory Management System program\n";**

**cout << " Press Any Key to Proceed\n";**

**cin >> yes;**

**system("cls");**

**menu();**

**return 0;**

**}**

**//Function for program menu**

**void menu()**

**{**

**int menunum;**

**cout << " Menu \n";**

**cout << " \*\*\*\*\*\*";**

**cout << "\n\n1.Add Products to Stock\n";**

**cout << "2.Add Sales Made(This would Make changes in your number of units)\n";**

**cout << "3.Generate bill(Can only Generate a Bill for one Item purchased)\n";**

**cout << "4.Display Current Stock & save Data to file\n";**

**cout << "5.Display Old Stock and Display Last Data saved\n";**

**cout << "6.Search Item in Stock\n";**

**cout << "7.Exit Program\n\n";**

**cout << "Enter your choice here:";**

**cin >> menunum;**

**if (menunum == 1)**

**{**

**system("cls");**

**addproducts();**

**}**

**else if (menunum == 2)**

**{**

**system("cls");**

**items();**

**}**

**else if (menunum == 3)**

**{**

**system("cls");**

**cout << "What is Today's Date?\n";**

**cout << "Enter here: ";**

**cin.ignore();**

**getline(cin, date);**

**exportfile();**

**}**

**else if (menunum == 4)**

**{**

**system("cls");**

**displaystock();**

**}**

**else if (menunum == 5)**

**{**

**system("cls");**

**disstock();**

**}**

**else if (menunum == 6)**

**{**

**system("cls");**

**search();**

**}**

**else**

**{**

**system("cls");**

**cout << "BYEEEEEE, HOPE TO SEE YOU AGAIN :)";**

**}**

**}**

**//Function to Export data to file for printing**

**void exportfile()**

**{**

**char exit;**

**int itembought;**

**string filename;**

**ofstream file;**

**cout << "What would you want the recent bill to be saved as? ";**

**cin >> filename;**

**system("cls");**

**file.open(string(filename + ".txt").c\_str());**

**cout << "MilkID:0, RiceID:1, SugarID:2, ButterID:3, BreadID:4, MeatID:5, FishID:6, CerealID:7, CandyID:8\n";**

**cout << "What was bought? Enter Product ID:";**

**cin >> itembought;**

**cout << "Writing to file...\n";**

**cout << "About to finish...\n";**

**file << "Product Bought: " << products[itembought] << "\n";**

**file << "Amount to Pay: Php" << price[itembought] << "\n";**

**file << "Date :" << date << "\n";**

**file << "\nThank You for doing business with us, Hope to see you soon!";**

**cout << "\nDone! You can print out the bill now!";**

**file.close();**

**cout << "Press any key & <enter> to skip to menu";**

**cin >> exit;**

**if (exit != '/')**

**{**

**menu();**

**}**

**}**

**//function for adding products to stock**

**void addproducts()**

**{**

**int choice;**

**cout << "1. Add products to stock" << endl;**

**cout << "2. Go to menu " << endl;**

**cout << "3. View Stock" << endl;**

**cout << "4. Add more products" << endl;**

**cout << "Enter here: ";**

**cin >> choice;**

**if (choice == 1)**

**{**

**system("cls");**

**for (int p = 0; p < 9; p++)**

**{**

**cout << "\nEnter Amount of " << products[p] << ": ";**

**cin >> productsnum[p];**

**cout << "Enter price of " << products[p] << ": Php";**

**cin >> price[p];**

**}**

**}**

**else if (choice == 2)**

**{**

**menu();**

**}**

**else if (choice == 3)**

**{**

**viewstock();**

**}**

**else if (choice == 4)**

**{**

**addmoreproducts();**

**}**

**else**

**{**

**addproducts();**

**}**

**displaystock();**

**}**

**void addmoreproducts()**

**{**

**system("cls");**

**cout << "\nWhich Product do you want to add? Enter It's ID here: ";**

**cin >> productid;**

**if (productid == 0)**

**{**

**cout << "Enter amount of Milk: ";**

**cin >> productsadd[0];**

**newproductsnum[0] = productsnum[0] + productsadd[0];**

**addproducts();**

**}**

**else if (productid == 1)**

**{**

**cout << "Enter amount of Rice: ";**

**cin >> productsadd[1];**

**newproductsnum[1] = productsnum[1] + productsadd[1];**

**addproducts();**

**}**

**else if (productid == 2)**

**{**

**cout << "Enter amount of Sugar : ";**

**cin >> productsadd[2];**

**newproductsnum[2] = productsnum[2] + productsadd[2];**

**addproducts();**

**}**

**else if (productid == 3)**

**{**

**cout << "Enter amount of Butter: ";**

**cin >> productsadd[3];**

**newproductsnum[3] = productsnum[3] + productsadd[3];**

**addproducts();**

**}**

**else if (productid == 4)**

**{**

**cout << "Enter amount of Bread: ";**

**cin >> productsadd[4];**

**newproductsnum[4] = productsnum[4] + productsadd[4];**

**addproducts();**

**}**

**else if (productid == 5)**

**{**

**cout << "Enter amount of Meat: ";**

**cin >> productsadd[5];**

**newproductsnum[5] = productsnum[5] + productsadd[5];**

**addproducts();**

**}**

**else if (productid == 6)**

**{**

**cout << "Enter amount of Fish: ";**

**cin >> productsadd[6];**

**newproductsnum[6] = productsnum[6] + productsadd[6];**

**addproducts();**

**}**

**else if (productid == 7)**

**{**

**cout << "Enter amout of Cereal: ";**

**cin >> productsadd[7];**

**newproductsnum[7] = productsnum[7] + productsadd[7];**

**addproducts();**

**}**

**else if (productid == 8)**

**{**

**cout << "Enter amount of Candy: ";**

**cin >> productsadd[8];**

**newproductsnum[8] = productsnum[8] + productsadd[8];**

**addproducts();**

**}**

**else**

**{**

**cout << "No product with that ID, try again!\n\n";**

**addproducts();**

**}**

**}**

**//Function for items the user enters**

**void items()**

**{**

**int itemsnum;**

**char exit;**

**cout << "Get ready to enter item(s) Purchased\n";**

**cout << "Press 'e' & <enter> to skip to menu or any other key & <enter> to proceed\n\n";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else**

**{**

**cout << "MilkID:0, RiceID:1, SugarID:2, ButterID:3, BreadID:4, MeatID:5, FishID:6, CerealID:7, CandyID:8\n";**

**cout << "Enter ID of item Purchased: ";**

**}**

**cin >> productid;**

**if (productid == 0)**

**{**

**cout << "Enter amount of Milk: ";**

**cin >> productsub[0];**

**subproductsnum[0] = productsnum[0] - productsub[0];**

**items();**

**}**

**else if (productid == 1)**

**{**

**cout << "Enter amount of Rice: ";**

**cin >> productsadd[1];**

**subproductsnum[1] = productsnum[1] - productsub[1];**

**items();**

**}**

**else if (productid == 2)**

**{**

**cout << "Enter amount of Sugar : ";**

**cin >> productsub[2];**

**subproductsnum[2] = productsnum[2] - productsub[2];**

**items();**

**}**

**else if (productid == 3)**

**{**

**cout << "Enter amount of Butter: ";**

**cin >> productsub[3];**

**subproductsnum[3] = productsnum[3] - productsub[3];**

**items();**

**}**

**else if (productid == 4)**

**{**

**cout << "Enter amount of Bread: ";**

**cin >> productsadd[4];**

**subproductsnum[4] = productsnum[4] - productsub[4];**

**items();**

**}**

**else if (productid == 5)**

**{**

**cout << "Enter amount of Meat: ";**

**cin >> productsub[5];**

**subproductsnum[5] = productsnum[5] - productsub[5];**

**items();**

**}**

**else if (productid == 6)**

**{**

**cout << "Enter amount of Fish: ";**

**cin >> productsub[6];**

**subproductsnum[6] = productsnum[6] - productsub[6];**

**items();**

**}**

**else if (productid == 7)**

**{**

**cout << "Enter amout of Cereal: ";**

**cin >> productsub[7];**

**subproductsnum[7] = productsnum[7] - productsub[7];**

**items();**

**}**

**else if (productid == 8)**

**{**

**cout << "Enter amount of Candy: ";**

**cin >> productsub[8];**

**subproductsnum[8] = productsnum[8] - productsub[8];**

**items();**

**}**

**else**

**{**

**cout << "No product with that ID, try again!\n\n";**

**items();**

**}**

**}**

**void calculatestock()**

**{**

**for (productid = 0; productid < 9; productid++)**

**{**

**productsnum[productid] = productsnum[productid] + newproductsnum[productid];**

**subproductsnum[productid] = newproductsnum[productid] - productsub[productid];**

**}**

**}**

**void displaystock()**

**{**

**cout << "ProductID\t\t"**

**<< "Products"**

**<< "\t"**

**<< "Num of Products"**

**<< "\t\t"**

**<< "New Num of Products"**

**<< "\tUnit Price" << endl;**

**for (productid = 0; productid < 9; productid++)**

**{**

**subproductsnum[productid] = productsnum[productid] - productsub[productid];**

**productsnum[productid] = productsnum[productid] + newproductsnum[productid];**

**cout << productid << "\t\t\t" << products[productid] << "\t\t\t" << productsnum[productid] << "\t\t" << subproductsnum[productid] << "\t\t\t Php" << price[productid] << endl;**

**}**

**file.open("DefaultSTOCK");**

**file << "ProductID\t\t"**

**<< "Products"**

**<< "\t"**

**<< "Num of Products"**

**<< "\t\t"**

**<< "New Num of Products"**

**<< "\t\tUnit Price" << endl;**

**for (productid = 0; productid < 9; productid++)**

**{**

**file << productid << "\t\t\t" << products[productid] << "\t\t\t" << productsnum[productid] << "\t\t\t" << subproductsnum[productid] << "\t\t\t Php" << price[productid] << endl;**

**}**

**cout << "\nWriting to file...\n";**

**cout << "Done writing new stock to file....\n";**

**cout << "You file is automatically saved as ''DefualtSTOCK'' ";**

**int out;**

**cout << "press any number to proceed";**

**cin >> out;**

**if (out != 0)**

**{**

**menu();**

**}**

**}**

**void disstock()**

**{**

**ifile.open("DefaultSTOCK");**

**if (ifile.is\_open())**

**{**

**string getcontent;**

**while (getline(ifile, getcontent))**

**{**

**cout << getcontent << endl;**

**}**

**}**

**int out;**

**cout << "\n\npress any number to proceed";**

**cin >> out;**

**if (out != 0)**

**{**

**menu();**

**}**

**}**

**void viewstock()**

**{**

**ifile.open("DefaultSTOCK");**

**if (ifile.is\_open())**

**{**

**string getcontent;**

**while (getline(ifile, getcontent))**

**{**

**cout << getcontent << endl;**

**}**

**}**

**int product\_menu;**

**cout << "\nPress any number to go to continue ";**

**cin >> product\_menu;**

**if (product\_menu != 0)**

**{**

**system("cls");**

**addproducts();**

**}**

**file.close();**

**}**

**void search()**

**{**

**int productid;**

**char exit;**

**cout << "Press 'e' & <enter> to exit or & other key to proceed & <enter>" << endl;**

**cin >> exit;**

**if (exit != 'e')**

**{**

**cout << "MilkID:0, RiceID:1, SugarID:2, ButterID:3, BreadID:4, MeatID:5, FishID:6, CerealID:7, CandyID:8\n";**

**cout << "What product's information do you want to see? Enter it's ID here: ";**

**cin >> productid;**

**if (productid == 0)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[0] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[0] << "\n";**

**cout << "UNIT PRRICE:" << price[0] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 1)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[1] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[1] << "\n";**

**cout << "UNIT PRRICE:" << price[1] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 2)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[2] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[2] << "\n";**

**cout << "UNIT PRRICE:" << price[2] << endl;**

**}**

**else if (productid == 3)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[3] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[3] << "\n";**

**cout << "UNIT PRRICE:" << price[3] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 4)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[4] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[4] << "\n";**

**cout << "UNIT PRRICE:" << price[4] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 5)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[5] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[5] << "\n";**

**cout << "UNIT PRRICE:" << price[5] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 6)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[6] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[6] << "\n";**

**cout << "UNIT PRRICE:" << price[6] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 7)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[7] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[7] << "\n";**

**cout << "UNIT PRRICE:" << price[7] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else if (productid == 8)**

**{**

**cout << "\t\tPRODUCT DETAILS\n";**

**cout << "PRODUCT NAME:" << products[8] << "\n";**

**cout << "TOTAL UNITS IN STOCK:" << subproductsnum[8] << "\n";**

**cout << "UNIT PRRICE:" << price[8] << endl;**

**cout << "Press 'e' & <enter> to go to menu or 's' & <enter> to search another items details";**

**cin >> exit;**

**if (exit == 'e')**

**{**

**menu();**

**}**

**else if (exit == 's')**

**{**

**system("cls");**

**search();**

**}**

**}**

**else**

**{**

**system("cls");**

**search();**

**}**

**}**

**else**

**{**

**menu();**

**}**

**}**

**Results:**

Implementing an Inventory Control Management System (ICMS) offers businesses a range of significant benefits. By enhancing inventory accuracy, streamlining processes, and improving demand forecasting, ICMS helps optimize inventory levels while reducing costs and improving customer satisfaction. Through real-time data and analytics, businesses can make informed decisions, leading to increased operational efficiency and adaptability in dynamic market environments..

**DICUSSION:**

The discussion on Inventory Control Management Systems (ICMS) emphasizes their pivotal role in optimizing inventory levels, streamlining processes, and enhancing overall efficiency within businesses. By utilizing advanced forecasting techniques, real-time data analysis, and seamless integration with supply chain operations, ICMS enables businesses to maintain the right balance of stock, minimize costs associated with excess inventory or stockouts, and meet customer demand effectively. Moreover, ICMS facilitates improved productivity, reduced operational costs, and enhanced customer satisfaction by providing valuable insights into inventory performance and trends, allowing for continuous optimization and adaptation to market dynamics

**CONCLUSION:** In conclusion, implementing an Inventory Control Management System (ICMS) is essential for businesses seeking to optimize their inventory operations and improve overall performance. By enhancing inventory accuracy, streamlining processes, and improving demand forecasting, ICMS enables businesses to operate more efficiently, reduce costs, and enhance customer satisfaction.

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