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PROBLEM STATEMENT

After analyzing many existing IMS we have now the obvious vision of the project to be developed. Before we started to build the application team had many challenges. We defined our problem statement as:

To make desktop based application of IMS for small organization.

To make the system easily managed and can be secured.

To cover all the areas of IMS like purchase details, sales details and stock management.

Objective of the Project

Primary objective

The primary objectives of the project are mentioned below:

To fulfill the requirement for achieving the Bachelor's degree of Computer Information System.

To know the fundamentals of the .Net Technology and Visual Studio with the .Net Framework

Secondary objective

The secondary objectives of this project are mentioned below:

To develop an application that deals with the day to day requirement of any production organization

To develop the easy management of the inventory

To handle the inventory details like sales details, purchase details and balance stock details.

To provide competitive advantage to the organization.

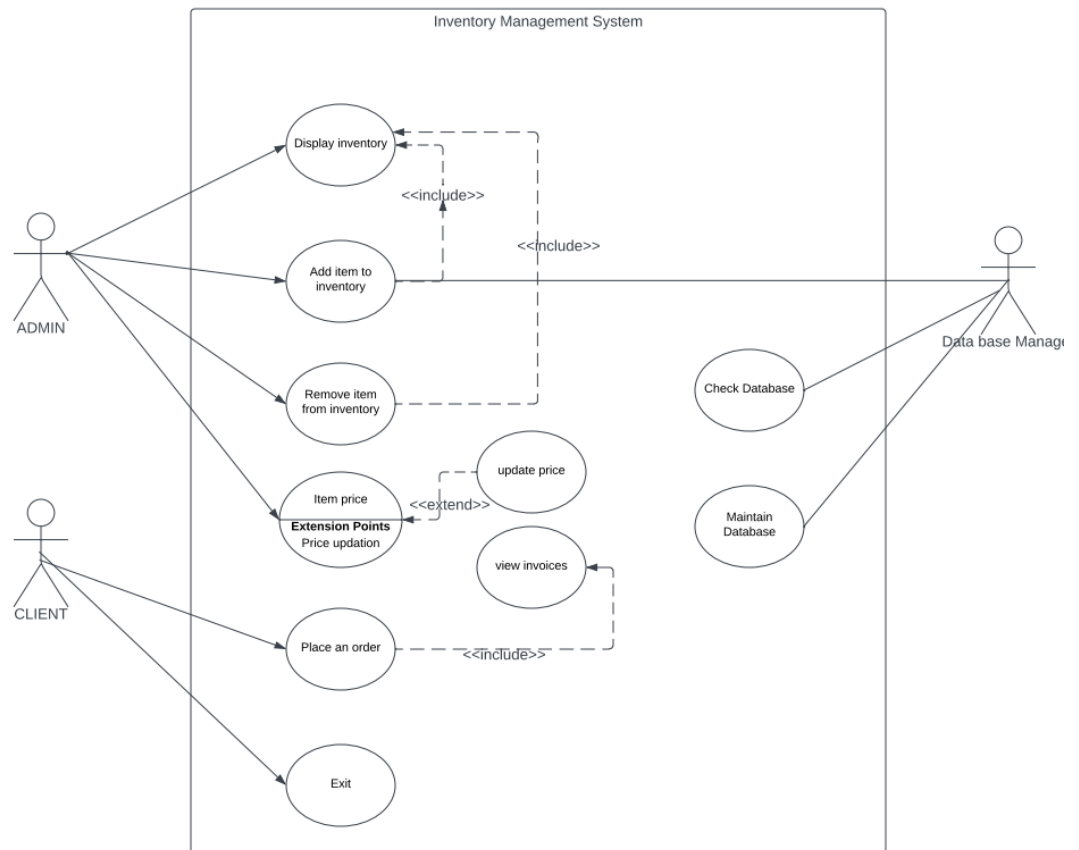
To provide details information about the stock balance.

To make the stock manageable and simplify the use of inventory in the organization

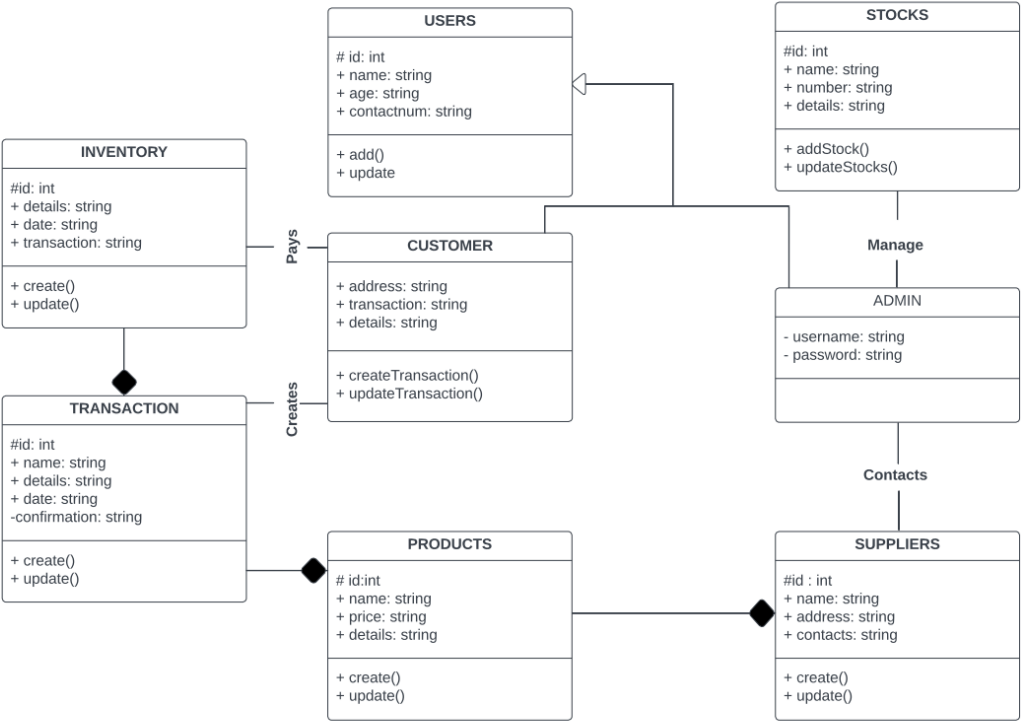
ABSTRACT

This project is aimed at developing a desktop based application named Inventory Management System for managing the inventory system of any organization. The Inventory Management System (IMS) refers to the system and processes to manage the stock of organization with the involvement of Technology system. This system can be used to store the details of the inventory, stock maintenance, update the inventory based on the sales details, generate sales and inventory report daily or weekly based. This project is categorize individual aspects for the sales and inventory management system. In this system we are solving different problem affecting to direct sales management and purchase management. Inventory Management System is important to ensure quality control in businesses that handle transactions revolving around consumer goods. Without proper inventory control, a large retail store may runout of stock on an important item. A good inventory management system will alert the wholesaler when it is time to record. Inventory Management System is also on important means of automatically tracking large shipment. An automated Inventory Management System helps to minimize the errors while recording the stock.

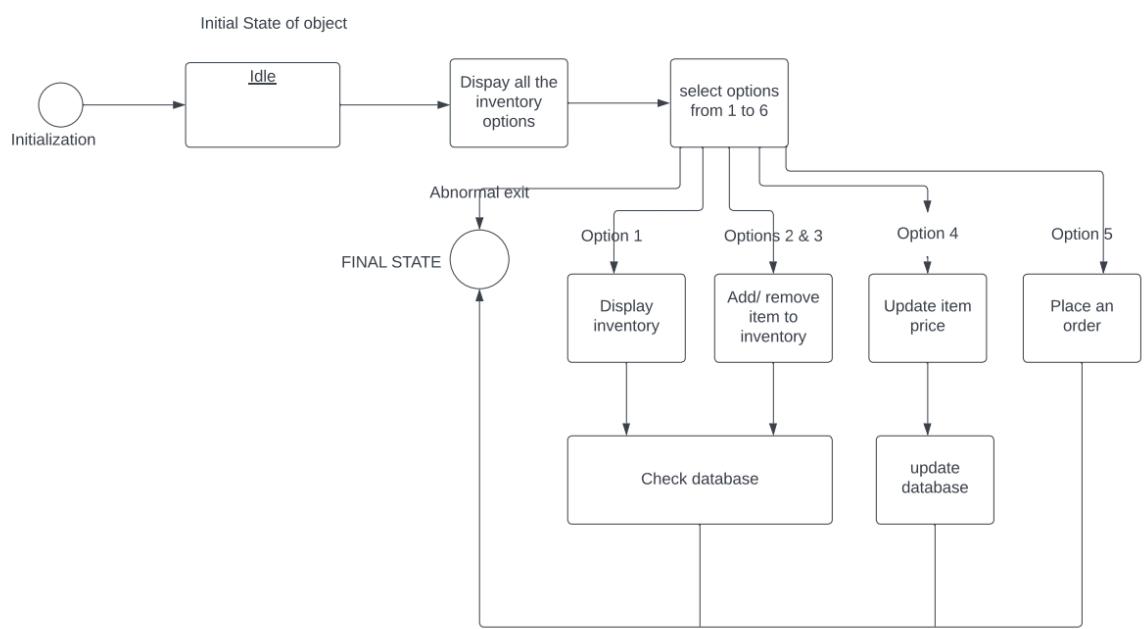
USE CASE DIAGRAM



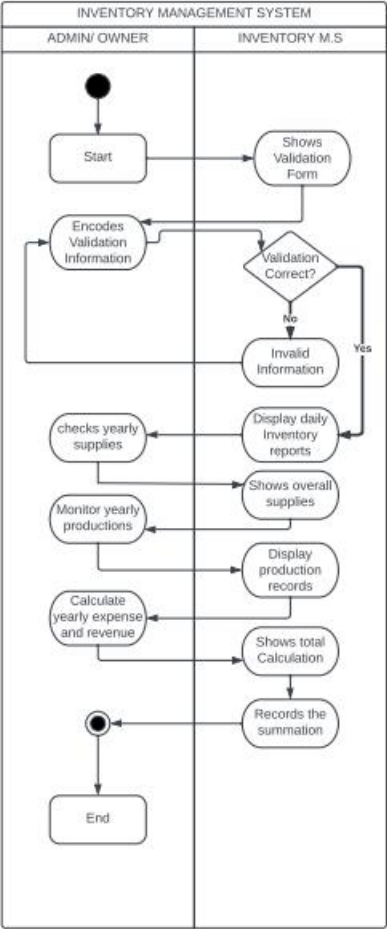
CLASS DIAGRAM



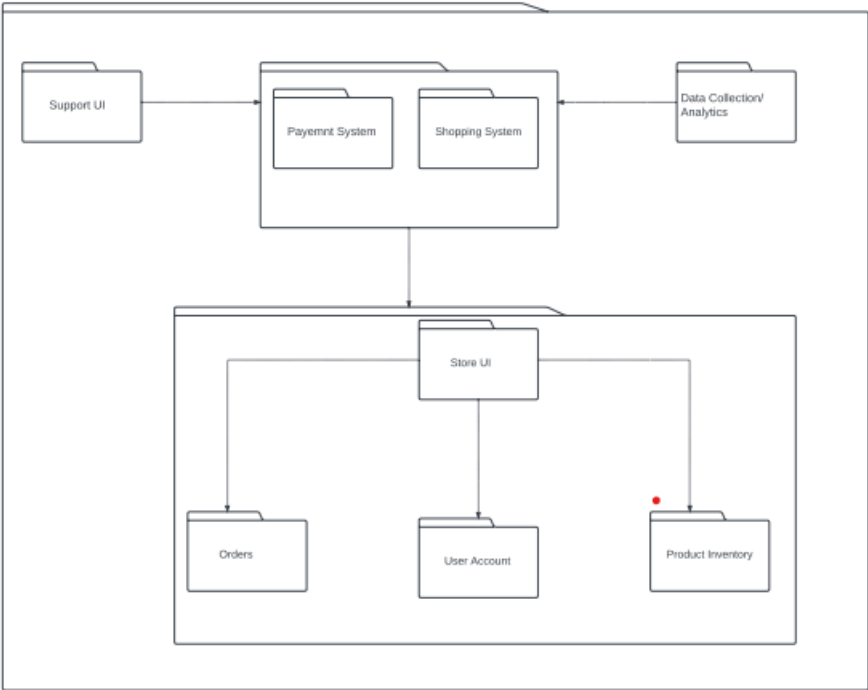
STATE CHART DIAGRAM



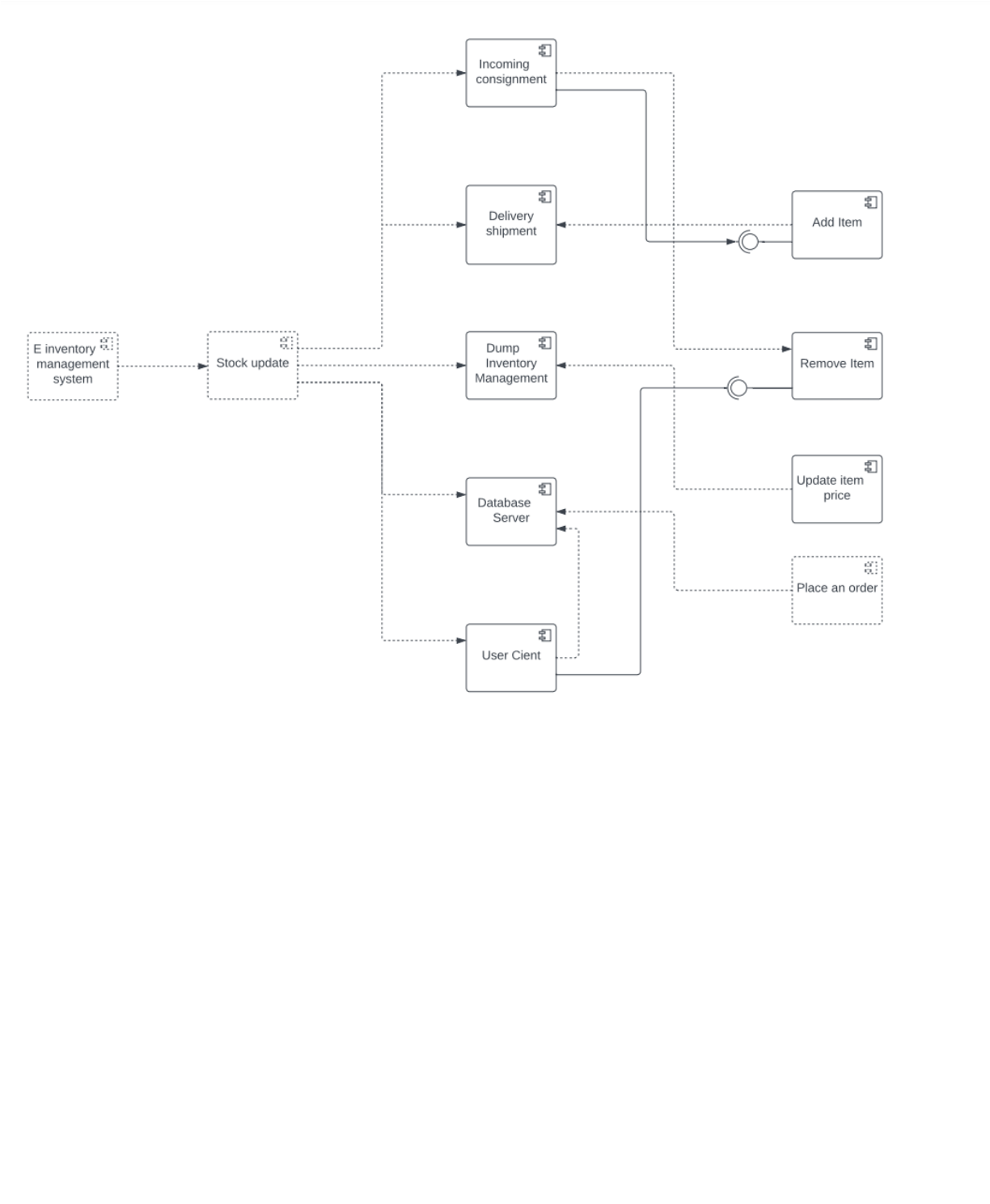
ACTIVITY DIAGRAM



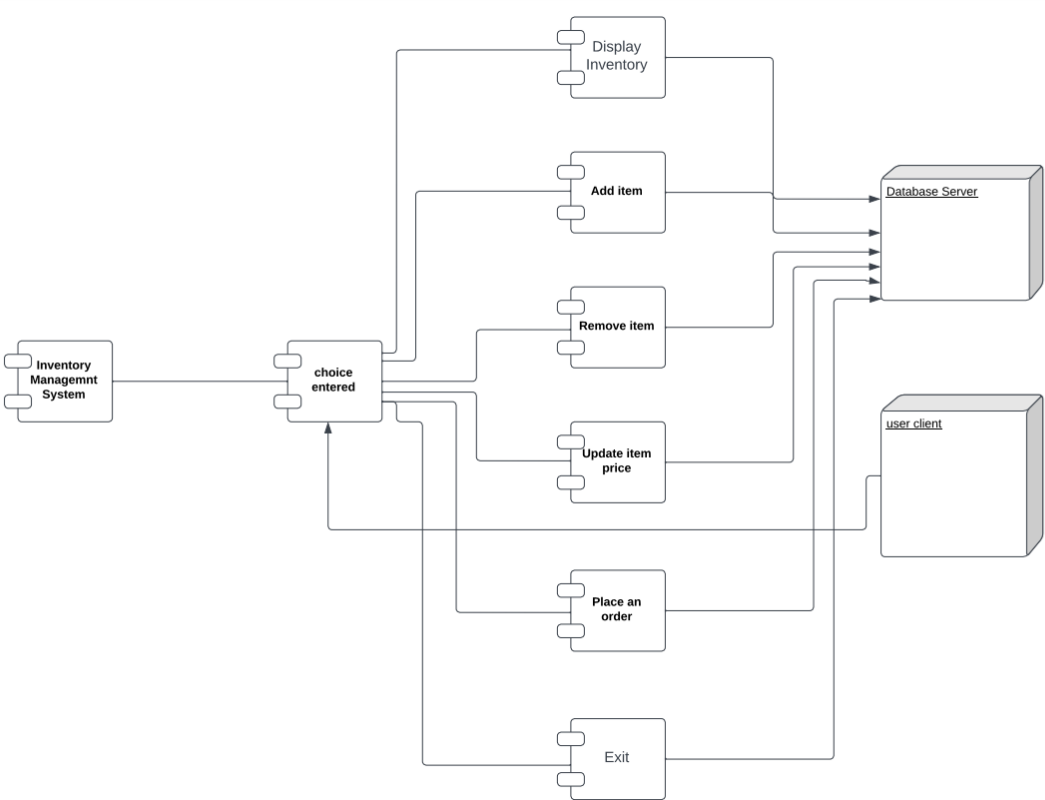
PACKAGE DIAGRAM



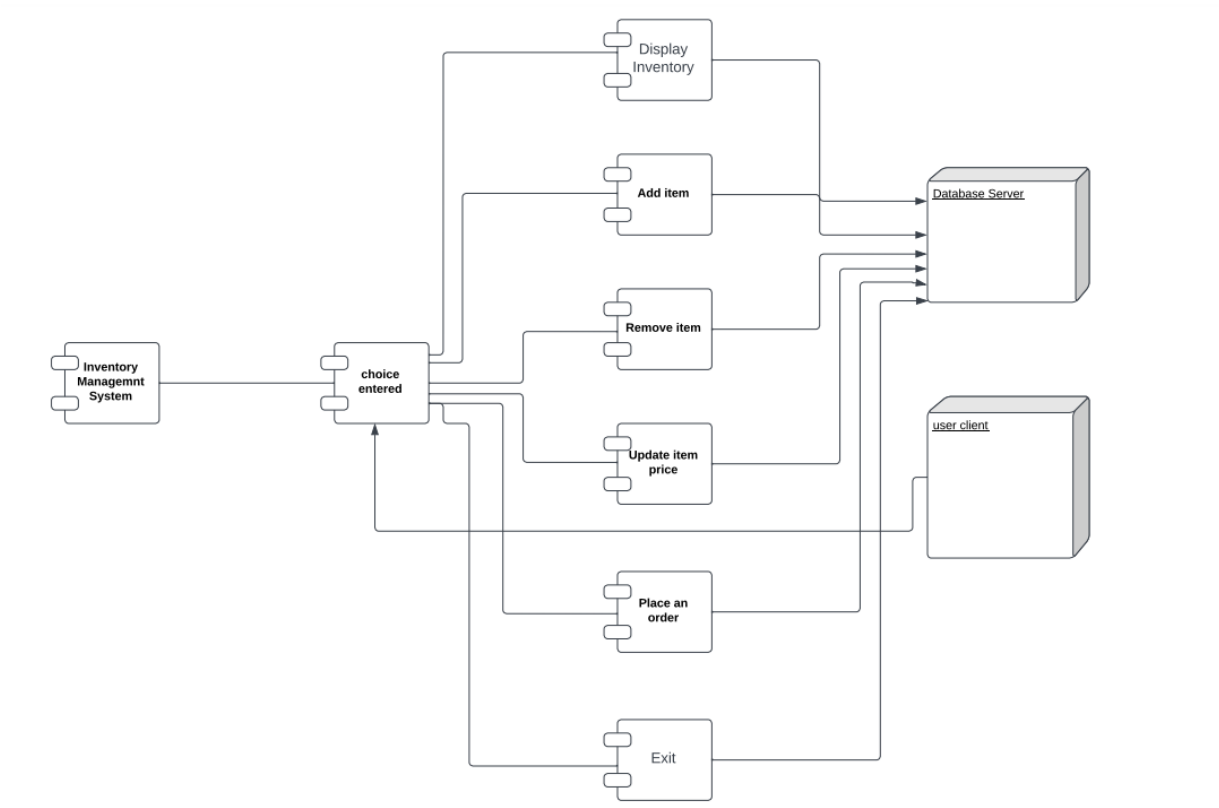
COMPONENT DIAGRAM



DEPLOYMENT DIAGRAM



UML DIAGRAM



CODE

```
#include <iostream>
#include <fstream>
#include <string>
#include <map>

using namespace std;

// Define a struct to hold item information
struct Item {
    int quantity;
    double price;
};

// Define a map to hold the inventory
map<string, Item> inventory;

// Function to display the current inventory
void displayInventory() {
    cout << "Current Inventory:" << endl;
    for (auto const& item : inventory) {
        cout << item.first << " - " << item.second.quantity << " - " << item.second.price << endl;
    }
}

// Function to add items to the inventory
void addItem() {
    string itemName;
    int quantity;
    double price;
    cout << "Enter item name: ";
    cin >> itemName;
    cout << "Enter quantity: ";
    cin >> quantity;
    cout << "Enter price: ";
    cin >> price;
    inventory[itemName] = {quantity, price};
    cout << itemName << " added to inventory." << endl;
}

// Function to remove items from the inventory
void removeItem() {
    string itemName;
    int quantity;
    cout << "Enter item name: ";
```

```

    cin >> itemName;
    if (inventory.count(itemName) == 0) {
        cout << itemName << " not found in inventory." << endl;
        return;
    }
    cout << "Enter quantity: ";
    cin >> quantity;
    if (quantity > inventory[itemName].quantity) {
        cout << "Insufficient quantity!" << endl;
        return;
    }
    inventory[itemName].quantity -= quantity;
    cout << itemName << " removed from inventory." << endl;
}

// Function to update item price
void updatePrice() {
    string itemName;
    double price;
    cout << "Enter item name: ";
    cin >> itemName;
    if (inventory.count(itemName) == 0) {
        cout << itemName << " not found in inventory." << endl;
        return;
    }
    cout << "Enter price: ";
    cin >> price;
    inventory[itemName].price = price;
    cout << itemName << " price updated to " << price << "." << endl;
}

// Function to place an order
void placeOrder() {
    string itemName;
    int quantity;
    double total = 0;
    while (true) {
        cout << "Enter item name (or 'done' to finish order): ";
        cin >> itemName;
        if (itemName == "done") {
            break;
        }
        if (inventory.count(itemName) == 0) {
            cout << itemName << " not found in inventory." << endl;
            continue;
        }

```

```

        cout << "Enter quantity: ";
        cin >> quantity;
        if (quantity > inventory[itemName].quantity) {
            cout << "Insufficient quantity!" << endl;
            continue;
        }
        inventory[itemName].quantity -= quantity;
        total += quantity * inventory[itemName].price;
    }
    cout << "Order placed successfully! Total price: " << total << endl;
}

// Function to write the inventory data to a CSV file
void writeInventoryToCSV() {
    ofstream outfile;
    outfile.open("inventory.csv");
    outfile << "Item Name, Quantity, Price\n";
    for (auto const& item : inventory) {
        outfile << item.first << "," << item.second.quantity << "," << item.second.price << "\n";
    }
    outfile.close();
    cout << "Inventory data written to inventory.csv" << endl;
}

// Main function
int main() {
    int choice;
    ofstream inventoryFile("inventory.csv");

    while (true) {
        cout << endl;
        cout << "1. Display inventory" << endl;
        cout << "2. Add item to inventory" << endl;
        cout << "3. Remove item from inventory" << endl;
        cout << "4. Update item price" << endl;
        cout << "5. Place an order" << endl;
        cout << "6. Exit" << endl;
        cout << "Enter your choice (1-6): ";
        cin >> choice;

        if (choice == 1) {
            displayInventory();
        }
        else if (choice == 2) {
            addItem();

```

```

inventoryFile.open("inventory.csv", ios::out | ios::trunc);
inventoryFile << "Item Name, Quantity, Price\n";
for (auto const& item : inventory) {
    inventoryFile << item.first << "," << item.second.quantity << "," << item.second.price << "\n";
}
inventoryFile.close();
}
else if (choice == 3) {
    removeItem();
    inventoryFile.open("inventory.csv", ios::out | ios::trunc);
    inventoryFile << "Item Name, Quantity, Price\n";
    for (auto const& item : inventory) {
        inventoryFile << item.first << "," << item.second.quantity << "," << item.second.price << "\n";
    }
    inventoryFile.close();
}
else if (choice == 4) {
    updatePrice();
    inventoryFile.open("inventory.csv", ios::out | ios::trunc);
    inventoryFile << "Item Name, Quantity, Price\n";
    for (auto const& item : inventory) {
        inventoryFile << item.first << "," << item.second.quantity << "," << item.second.price << "\n";
    }
    inventoryFile.close();
}
else if (choice == 5) {
    placeOrder();
} else if (choice == 6)    break;    } } }

```

```
1. Display inventory
2. Add item to inventory
3. Remove item from inventory
4. Update item price
5. Place an order
6. Exit
Enter your choice (1-6): 2
Enter item name: chips
Enter quantity: 34
Enter price: 21
chips added to inventory.
```

A	B	C	D	E	F	G	

C:\Users\prath\CLionProjects\untitled9\cmake-build-debug\untitled9.exe

1. Display inventory
2. Add item to inventory
3. Remove item from inventory
4. Update item price
5. Place an order
6. Exit

Enter your choice (1-6):2

Enter item name:cheese

Enter quantity:250

Enter price:100

cheese added to inventory.

1. Display inventory
2. Add item to inventory
3. Remove item from inventory
4. Update item price
5. Place an order
6. Exit

Enter your choice (1-6):2

Enter item name:chocolate

Enter quantity:100

Enter price:50

chocolate added to inventory.

1. Display inventory
2. Add item to inventory
3. Remove item from inventory
4. Update item price

Item Name						
	A	B	C	D	E	F
1	Item Name	Quantity	Price			
2	cheese	250	100			
3	chocolate	100	50			
4						
5						
6						
7						
8						
9						
10						

CONCLUSION AND RESULTS

In conclusion, developing a simple inventory management system in C++ for our college project has provided us with valuable experience and knowledge in programming and software development. By creating a basic system for managing inventory data, we have learned important concepts such as data types, loops, arrays, functions and concepts of Object Oriented Programming, as well as gained an understanding of the software development life cycle.

While our project may have been basic, it has opened up numerous opportunities for future development and improvement, such as adding more features, enhancing the user interface, improving performance, integrating with other systems, making it cloud-based, adding customization options, and making it mobile-compatible. These future scopes can help us create a more robust and efficient system that can streamline business operations and improve overall performance.

Overall, our project has provided us with a foundation for further growth and development in the field of software development and has given us a practical experience that can be applied to future projects or academic pursuits.

An Inventory Management System that stores sales data for a certain desktop application. It's a simple desktop application that links to the actual distribution centre, allowing information to be refreshed and confirmed in the store. It's a secure application that prevents data from being spoiled in the stores. It also provides sales information on a daily, weekly, and monthly basis. This system makes inventory management a breeze. Increased income and profitability, a better employee climate, and an overall boost in customer satisfaction will be noticed as a result of the inventory management system

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