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**Roll Number: 45**

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**Title: Shopping Cart**

**Theory:** The code defines a Product class for managing product details, allowing the user to input product information, select items for purchase, and calculate the total amount to pay. The program includes features such as displaying available products, updating quantities, and handling a shopping cart with a maximum limit of 100 items.

**Code:**

**#include "iostream"**

**using namespace std;**

**class Product {**

**private:**

**int productID, quantityInStock, productInCart;**

**float price;**

**string productName;**

**public:**

**Product() {**

**productID = 0;**

**quantityInStock = 0;**

**price =0.00;**

**productName="null";**

**productInCart = 0;**

**}**

**Product(int prdID, int qInS, float p, string prdName) {**

**productID = prdID;**

**quantityInStock = qInS;**

**price = p;**

**productName = prdName;**

**}**

**void displayAll() {**

**cout << "Product ID: " << productID << endl;**

**cout << "Quantity: " << quantityInStock << endl;**

**cout << "Price: " << price << endl;**

**cout << "Product Name: " << productName << endl;**

**}**

**void displayProduct() {**

**if (quantityInStock == 0)**

**{**

**return;**

**}**

**else {**

**cout << "Product ID: " << productID << endl;**

**cout << "Quantity: " << quantityInStock << endl;**

**cout << "Price: " << price << endl;**

**cout << "Product Name: " << productName << endl;**

**}**

**}**

**float getPrice() {**

**return price;**

**}**

**int getQuantity() {**

**return quantityInStock;**

**}**

**void updateQuantityInStock() {**

**cout << "Quantity: " << quantityInStock << endl;**

**}**

**string productChosen() {**

**quantityInStock-=1;**

**return productName;**

**}**

**};**

**int main() {**

**int id, quantity;**

**float price;**

**string name;**

**int n;**

**cout << "Enter number of products: ";**

**cin >> n;**

**Product products[n];**

**for (int i = 0; i < n; i++) {**

**id=i;**

**cout << "Product Name (NOTE: DO NOT USE SPACE IN NAME): ";**

**//getline(cin, name);**

**cin>>name;**

**cout << "Quantity: ";**

**cin >> quantity;**

**cout << "Price: ";**

**cin >> price;**

**products[i]= Product(id, quantity, price, name);**

**}**

**cout << "\nAll products:\n";**

**for (int j = 0; j < n; j++) {**

**products[j].displayAll();**

**cout << endl;**

**}**

**float payAmount=0.00;**

**char ch;**

**int flag=0;**

**string productName[100];**

**do**

**{**

**int choice;**

**cout << "Enter the product id of the product that you want to buy: ";**

**cin >> choice;**

**if((choice > 0 || choice <=n) && (products[choice].getQuantity() <= 0)) {**

**cout << "Invalid product id OR Unavailable product entered, please retry." << endl;**

**continue;**

**}**

**else {**

**productName[flag]=products[choice].productChosen();**

**payAmount += products[choice].getPrice();**

**cout << "Product added in cart..." << endl;**

**cout << "\nAll products:\n";**

**for (int j = 0; j < n; j++) {**

**products[j].displayProduct();**

**cout << endl;**

**}**

**}**

**cout << "Enter 'y' if you want to add more products to your cart. (Please note that you can only select 100 items at once.)" << endl;**

**cin >> ch;**

**ch=(char) tolower(ch);**

**flag++;**

**} while (ch=='y' && flag <100);**

**cout<<"Products in cart: " << endl;**

**for(int i =0; i<flag; i++) {**

**cout<<productName[i]<<", ";**

**}**

**cout<<endl;**

**cout << "Amount to pay is: " << payAmount;**

**return 0;**

**}**

**Output:(screenshot):**