#include <iostream>

#include <vector>

using namespace std;

class Product {

public:

Product(string name, double price) : name(name), price(price) {}

string getName() const {

return name;

}

double getPrice() const {

return price;

}

private:

string name;

double price;

};

class ShoppingCart {

public:

void addItem(const Product& product, int quantity) {

items.push\_back({product, quantity});

}

double calculateTotal() const {

double total = 0.0;

for (size\_t i = 0; i < items.size(); ++i) {

total += items[i].product.getPrice() \* items[i].quantity;

}

return total;

}

void displayItems() const {

cout << "Shopping Cart Contents:\n";

for (size\_t i = 0; i < items.size(); ++i) {

cout << items[i].product.getName() << " x " << items[i].quantity << "\n";

}

}

private:

struct ShoppingCartItem {

Product product;

int quantity;

};

vector<ShoppingCartItem> items;

};

int main() {

// Create some products

Product laptop("Laptop", 999.99);

Product phone("Smartphone", 499.99);

Product headphones("Headphones", 99.99);

// Create a shopping cart

ShoppingCart cart;

// Display product information

cout << "Available Products:\n";

cout << "1. " << laptop.getName() << " - $" << laptop.getPrice() << "\n";

cout << "2. " << phone.getName() << " - $" << phone.getPrice() << "\n";

cout << "3. " << headphones.getName() << " - $" << headphones.getPrice() << "\n";

// User adds items to the cart

char addMore;

do {

int productChoice, quantity;

cout << "Enter the product number (1-3): ";

cin >> productChoice;

if (productChoice < 1 || productChoice > 3) {

cout << "Invalid product number. Please choose again.\n";

continue;

}

cout << "Enter the quantity: ";

cin >> quantity;

switch (productChoice) {

case 1:

cart.addItem(laptop, quantity);

break;

case 2:

cart.addItem(phone, quantity);

break;

case 3:

cart.addItem(headphones, quantity);

break;

}

cout << "Item added to the cart.\n";

cout << "Do you want to add more items? (y/n): ";

cin >> addMore;

} while (addMore == 'y' || addMore == 'Y');

// Display the shopping cart contents using a traditional for loop

cart.displayItems();

// Calculate and display the total price

double total = cart.calculateTotal();

cout << "\nTotal Price: $" << total << "\n";

return 0;

}