#include <iostream>

#include <vector>

#include <string>

// Product class

class Product {

private:

std::string name;

double price;

int quantity;

public:

Product(std::string n, double p, int q) : name(n), price(p), quantity(q) {}

std::string getName() { return name; }

double getPrice() { return price; }

int getQuantity() { return quantity; }

void setQuantity(int q) { quantity = q; }

};

// Shopping Cart class

class ShoppingCart {

private:

std::vector<Product> products;

public:

void addProduct(Product p) { products.push\_back(p); }

void viewCart() {

std::cout << "Your Cart:\n";

for (int i = 0; i < products.size(); i++) {

std::cout << i + 1 << ". " << products[i].getName() << " x" << products[i].getQuantity() << " = $" << products[i].getPrice() \* products[i].getQuantity() << std::endl;

}

}

void removeProduct(int index) {

if (index >= 1 && index <= products.size()) {

products.erase(products.begin() + index - 1);

} else {

std::cout << "Invalid product index.\n";

}

}

double calculateTotal() {

double total = 0;

for (Product p : products) {

total += p.getPrice() \* p.getQuantity();

}

return total;

}

void checkout() {

std::cout << "Total: $" << calculateTotal() << std::endl;

std::cout << "Thank you for shopping with us!\n";

}

};

int main() {

ShoppingCart cart;

Product p1("Apple iPhone", 999.99, 1);

Product p2("Samsung TV", 1299.99, 1);

Product p3("Sony Headphones", 99.99, 2);

cart.addProduct(p1);

cart.addProduct(p2);

cart.addProduct(p3);

cart.viewCart();

cart.removeProduct(2);

cart.viewCart();

cart.checkout();

return 0;

}