Multiple Inheritance in C# - E-commerce Example (Without List<>)

# 🛒 Scenario: E-commerce System

This example models an E-commerce system using multiple inheritance via interfaces in C#. We avoid using List<> and instead manage the cart using a fixed-size string array.

# ✅ Modified Code Example (No List<>)

using System;  
  
// Base class  
public class User  
{  
 public string Name { get; set; }  
 public string Email { get; set; }  
  
 public void DisplayUserInfo()  
 {  
 Console.WriteLine($"Name: {Name}, Email: {Email}");  
 }  
}  
  
// Interface 1  
public interface ICustomerActions  
{  
 void AddToCart(string product);  
 void PlaceOrder();  
}  
  
// Interface 2  
public interface IReviewActions  
{  
 void WriteReview(string product, string review);  
}  
  
// Class using multiple inheritance (via interfaces)  
public class Customer : User, ICustomerActions, IReviewActions  
{  
 private string[] cart = new string[10]; // Fixed-size cart  
 private int cartCount = 0;  
  
 public void AddToCart(string product)  
 {  
 if (cartCount < cart.Length)  
 {  
 cart[cartCount++] = product;  
 Console.WriteLine($"{product} added to cart.");  
 }  
 else  
 {  
 Console.WriteLine("Cart is full.");  
 }  
 }  
  
 public void PlaceOrder()  
 {  
 if (cartCount == 0)  
 {  
 Console.WriteLine("Cart is empty. Add items before placing an order.");  
 return;  
 }  
  
 Console.Write("Order placed for: ");  
 for (int i = 0; i < cartCount; i++)  
 {  
 Console.Write(cart[i]);  
 if (i < cartCount - 1)  
 Console.Write(", ");  
 }  
 Console.WriteLine();  
  
 cartCount = 0; // Clear cart  
 }  
  
 public void WriteReview(string product, string review)  
 {  
 Console.WriteLine($"Review for {product}: {review}");  
 }  
}

# 🧪 Usage Example

class Program  
{  
 static void Main()  
 {  
 Customer customer = new Customer  
 {  
 Name = "Alice",  
 Email = "alice@example.com"  
 };  
  
 customer.DisplayUserInfo(); // From User class  
 customer.AddToCart("Laptop"); // From ICustomerActions  
 customer.AddToCart("Mouse");  
 customer.PlaceOrder(); // From ICustomerActions  
 customer.WriteReview("Laptop", "Great value!"); // From IReviewActions  
 }  
}