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| --- |
| **Visitor** |
| **Line** | **Code** |
| **1****2****3****4****5****6****7****8****9****10****11****12****13****14****15****16****17****18****19****20****21****22****23****24****25****26****27****28****29****30****31****32****33****34****35****36****37****38****39****40****41****42****43****44****45****46****47****48****49****50****51****52****53****54****55****56****57****58****59****60****61****62****63****64****65****66****67****68****69****70****71****72****73****74****75****76****77****78****79****80****81****82****83****84****85****86****87****88** | // Sets up an object structure and visits it // in two ways - for printing and for collecting elements in groups// using dynamic-dispatch**using** System;**namespace** Visitor { **abstract class** IElement { // Added to make Elements Visitor-ready **public abstract void** Accept(IVisitor visitor); } **class** Element : IElement { **public** Element Next { get; set; } **public** Element Link { get; set; } **public** Element() { } **public** Element(Element next) { Next = next; } **public override void** Accept(IVisitor visitor) { visitor.Visit(**this**); } } **class** ElementWithLink : Element { **public** ElementWithLink(Element link, Element next) { Next = next; Link = link; } **public override void** Accept(IVisitor visitor) { visitor.Visit(**this**); } } **interface** IVisitor { **void** Visit(Element element); **void** Visit(ElementWithLink element); } **class** CountVisitor : IVisitor { **public int** Count { get; set; } **public void** CountElements(Element element) { element.Accept(**this**); **if** (element.Link != **null**) CountElements(element.Link); **if** (element.Next != **null**) CountElements(element.Next); } //Elements with links are not counted **public void** Visit(ElementWithLink element) { Console.WriteLine("Not counting"); } // Only Elements are counted **public void** Visit(Element element) { Count++; } } **class** Program { **static void** Main(**string**[] args) { // Set up the object structure Element objectStructure = **new** Element( **new** Element( **new** ElementWithLink( **new** Element( **new** Element( **new** ElementWithLink( **new** Element(**null**), **new** Element(**null**) ) ) ), **new** Element( **new** Element( **new** Element(**null**) ) ) ) ) ); Console.WriteLine("Count the Elements"); CountVisitor visitor = **new** CountVisitor(); visitor.CountElements(objectStructure); Console.WriteLine("Number of Elements is: " + visitor.Count); Console.ReadKey(); } }} |