|  |  |
| --- | --- |
| **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();  }  }  } |