

Systems Development: Object Oriented Programming

(H171 35)

Formative exercise – CarbonFootprint Interface and Polymorphism

Using interfaces, you can specify similar behaviours for possibly disparate classes. Governments and companies world-wide are becoming increasingly concerned with carbon footprints (annual release of carbon dioxide into the atmosphere) from buildings burning various types of fuels for heat, vehicles burning fuels for power, and the like. Many scientists blame these greenhouse gases for the phenomenon called global warming.

Create 3 small classes unrelated by inheritance – classes Building, Car and Bicycle. Write an interface ICarbonFootprint with a GetCarbonFootprint method. Have each of your classes implement that interface, so that its GetCarbonFootprint method calculates an approximate carbon footprint for that class (check out a few website that explain how to calculate carbon footprint).

Write an app that creates objects of each of the three classes, places references to those objects in List<ICarbonFootprint> then iterate through the List, polymorphically invoking each objects GetCarbonFootprint method.