

Systems Development: Object Oriented Programming

(H171 35)

Case Study: Payroll system using polymorphism

Step 1 – create abstract base class Employee

* Employee is an abstract base class

public abstract class Employee

* Class Employee includes firstName, lastName and socialSecurityNumber, and *properties* for each of these private instance variables

e.g. public string FirstName { get; private set;}

* Class Employee includes a constructor that takes the first name, last name and social security number as arguments
* Class Employee provides methods Earning and ToString:
* Earnings – applies generically to all employees, but each earnings calculation depends on the employee’s class, so we declare Earnings as *abstract* in the base class Employee, because a default implementation does not make sense for that method. Each derived *concrete* class will override Earnings with a specific implementation
* ToString – returns a string containing the employee’s first name, last name and social security number. Each derived class of Employee overrides method ToString to create a string representation of an object of that class containing the employee’s type e.g. “salaried employee”, followed by the rest of the employee’s information