Chapter 10

Exercise 10.16.

10.16 (Accounts Payable System Modification) In this exercise, we modify the accounts payable application of Figs. 10.11–10.15 to include the complete functionality of the payroll application of Figs. 10.4–10.9. The application should still process two Invoice objects, but now should process one object of each of the four Employee subclasses. If the object currently being processed is a BasePlusCommissionEmployee, the application should increase the BasePlusCommissionEmployee’s base salary by 10%. Finally, the application should output the payment amount for each object. Complete the following steps to create the new application:

a) Modify classes HourlyEmployee (Fig. 10.6) and CommissionEmployee (Fig. 10.7) to place them in the Payable hierarchy as subclasses of the version of Employee (Fig. 10.13) that implements Payable.[Hint: Change the name of method earnings to getPaymentAmount in each subclass so that the class satisfies its inherited contract with interface Payable.]

b) Modify class BasePlusCommissionEmployee (Fig. 10.8) such that it extends the version of class CommissionEmployee created in part (a).

c) Modify PayableInterfaceTest (Fig. 10.15) to polymorphically process two Invoices, one SalariedEmployee, oneHourlyEmployee, one CommissionEmployee and one BasePlusCommissionEmployee. First output a String representation of each Payable object. Next, if an object is a BasePlusCommissionEmployee,increase its base salary by 10%.Finally, output the payment amount for each Payable object.