An Object-Oriented Approach to

Programming Logic and Design, 4rd Edition

Chapter 6 (1a, 5, 7, 9)

Exercises

1. a. Create the logic for a program that calculates and displays the amount of money you would have if you invested $5000 at 3 percent interest for one year. Create a separate method to do the calculation and display the result.

public static Main()
CalculateInterest()
Display(decimal investmentPlusInterest)

private static decimal CalculateInterest()
const int INVESTMENT = 5000
const decimal INTEREST = .03
decimal investmentPlusInterest = 0
investmentPlusInterest = (INVESTMENT * INTEREST) + INVESTMENT
return investmentPlusInterest

private static void Display(decimal investmentPlusInterest)
output "Your investment plus interest after one year totals {0}.", investmentPlusInterest
return

end Class

7. Jacobson Builders is constructing new homes in the Parkway subdivision. The company needs the logic for an application that calls a method that computes the final price for construction of a new home. The `main()` method prompts the user for the number of bedrooms and bathrooms in the home and for the salesperson's commission expressed as a percentage, and then displays the final price. Create a `calculatePrice()` method that determines the final price and returns the value to the calling method. The `calculatePrice()` method requires three arguments: bedrooms, baths, and salesperson commission rate. A home's final price is the sum of the base price of $100,000 plus $20,000 per bedroom, $30,000 per bathroom, and the salesperson commission amount.

public static Main()
num bedrooms = 0

```
num bathrooms = 0
num commission = 0

input("Please enter the number of bedrooms.")
input("Please enter the number of bathrooms.")
input("Please enter the salesperson's commission as a percentage.")
commission = commission/100

CalculatePrice(num bedrooms, num bathrooms, num commission)

output "The total price is {0}.", price

private static num CalculatePrice(num bedrooms, num bathrooms, num commission)
const num BEDROOM_PRICE = 20000
const num BATHROOM_PRICE = 30000
const num BASE_PRICE = 100000
num bedroomTotal = 0
num bathroomTotal = 0
num subtotal = 0
num price = 0

bedroomTotal = bedrooms * bedrooms
bathroomTotal =
subtotal = BASE_PRICE + bedroomTotal + bathroomTotal
price = (subtotal * commission) + subtotal
return price
```
