using System;

using System.Collections.Generic;

public sealed class RecipeCalculator

{

private static RecipeCalculator instance = null;

private static readonly object padlock = new object();

private RecipeCalculator() { }

public static RecipeCalculator Instance

{

get

{

lock (padlock)

{

if (instance == null)

{

instance = new RecipeCalculator();

}

return instance;

}

}

}

public decimal CalculateSalesTax(decimal price)

{

decimal taxRate = 0.086M;

if (price < 1.0M) // Produce is exempt from sales tax

{

return 0.0M;

}

return price \* taxRate;

}

public decimal CalculateWellnessDiscount(Dictionary<string, decimal> ingredients)

{

decimal discountRate = 0.05M;

decimal discountAmount = 0.0M;

foreach (var ingredient in ingredients)

{

if (ingredient.Key.Contains("organic"))

{

discountAmount += ingredient.Value \* discountRate;

}

}

return discountAmount;

}

public decimal CalculateTotalCost(Dictionary<string, decimal> recipe)

{

decimal totalCost = 0.0M;

foreach (var ingredient in recipe)

{

totalCost += ingredient.Value;

}

decimal salesTax = CalculateSalesTax(totalCost);

decimal wellnessDiscount = CalculateWellnessDiscount(recipe);

totalCost += salesTax - wellnessDiscount;

return totalCost;

}

}

// Example usage

public class Program

{

public static void Main()

{

var ingredients = new Dictionary<string, decimal>

{

{ "organic garlic", 0.67M },

{ "lemon", 2.03M },

{ "corn", 0.87M },

{ "chicken breast", 2.19M },

{ "slice of bacon", 0.24M },

{ "pasta (1 oz)", 0.31M },

{ "organic olive oil (1 cup)", 1.92M },

{ "vinegar (1 cup)", 1.26M },

{ "salt (1 tsp)", 0.16M },

{ "pepper (1 tsp)", 0.17M }

};

var recipe = new Dictionary<string, decimal>

{

{ "organic garlic", 1.0M },

{ "lemon", 1.0M },

{ "organic olive oil (1 cup)", 0.75M },

{ "salt (1 tsp)", 0.75M },

{ "pepper (1 tsp)", 0.5M }

};

var calculator = RecipeCalculator.Instance;

decimal salesTax = calculator.CalculateSalesTax(calculator.CalculateTotalCost(recipe));

decimal wellnessDiscount = calculator.CalculateWellnessDiscount(recipe);

decimal totalCost = calculator.CalculateTotalCost(recipe);

Console.WriteLine("Sales Tax: {0:C}", salesTax);

Console.WriteLine("Wellness Discount: {0:C}", wellnessDiscount);

Console.WriteLine("Total Cost: {0:C}", totalCost);

}

}