CSI-155 Midterm Review

Create a windows application project 'CurrentBudget' in a solution 'Budgeting'.

Add a class library project 'BudgetLib' to the same solution 'Budgeting"

In the BudgetLib project

1. Define an interface IExpense with the following get properties: **Amount**, **DateExpenseMade**, and **Description**.
2. Define a class **Expense** that, inherits from **IExpense,** with private fields: \_amount, \_dateExpenseMade, and short description. Add constructors and necessary properties, and method.
3. Define an abstract class **Budget** with private fields: \_balance, \_budgetCode, \_dateItExpires, and a list of expenses (such as: **List<IExpense>** \_expenses).
4. Add constructor (it should not include a parameter for \_expenses), properties and methods: **virtual AddExpense** method, which should take a single parameter: amount. This method should add an expense to the \_expenses list and decrease the budget balance, making sure there are enough funds in the budget.

Add an **abstract method GeBudgetData().**

**Within child class, This method is to return a string containing all the data pertaining to the child class.**

1. Define a class **BusinessBudget** that inherits (polymorphic inheritance) from Budget. the BusinessBudget class should define an extra private field: **\_department**
2. Define a class **HomeBudget** that inherits (polymorphic inheritance)from Budget, this class should define an extra field \_category (such as: Food, Clothing, Cleaning, Entertainment, etc…)

In Form1:

1. Define a List of budgets
2. Define a Dictionary of budgets, using the budgetCode as the key
3. In Form1\_Load create at least 3 BussinessBudget objects and at least 3 HomeBudget objects. Add all to the budget dictionary and to the list of budget
4. Sort the list by balance
5. In Form1[Design], add a button and a display control (richtextbox)
6. Attach code to the button to display all the budgets in the budget list.
7. Add gui to request budgetcode from user, then use the dictionary to get the budget object with the given code and display it.
8. Request an integer from user (0 to 255) best to use the byte type. Display its binary equivalent value.
9. Write a statement to set the fourth bit (bit3) to 1, display it
10. Write a statement to set the sixth bit (bit5) to 0, display it
11. Write an if statement to check if bit4 is set to 1