Assignment: Introduction to Classes, Interfaces, and Formatting in Object-Oriented Programming

Objective: In this assignment, you will demonstrate your understanding of classes, interfaces, and formatting in object-oriented programming by implementing a simple program in C#. You will create a self-referential class representing a hierarchical structure and use the IEnumerable interface to iterate over its elements. Additionally, you will use WinForms to add to the list and display the list, utilizing a ListBox for displaying the elements.

Instructions:

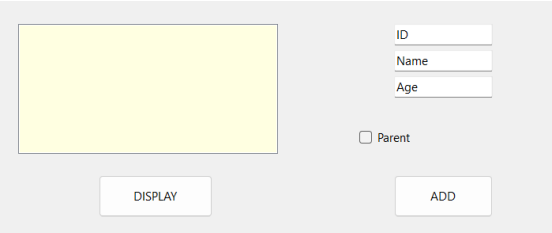
1. **Create a new WinForms Application project.**
2. **Define a simple "Person" class with the following properties:**
    - **ID (int)**
    - **Name (string)**
    - **Age (int)**
    - **Parent (Person)**
        - **The Parent property represents a self-referential relationship in the Person class (optional).**
3. **Implement a method "DisplayInfo()" in the Person class that uses string.Format to display the person's ID, Name, Age, and Parent's Name (if available).**
4. **Create a "Family" class that represents a collection of Person objects. Use a List<Person> to store the collection internally.**
5. **Implement the IEnumerable interface in the Family class, providing the necessary GetEnumerator() method for iterating over the collection.**
6. **Add a method "AddMember(Person person)" to the Family class that allows adding a new person to the family.**

7. **Add a method "GetPersonById(List<Person> people, int id)" to the Family class that assigns a person as a parent to another person by their ID.**
8. **Use a foreach loop to iterate over the Family collection and call the DisplayInfo() method on each Person object.**
9. **Properly format the output to be readable and organized.**
10. **Create a WinForms application to add and display the list of family members:**
    - **Use a form to input details for a new person and add them to the Family collection (ID, name, age, parent if available).**
    - **Use a ListBox to display the Name, Age, and Parent's Name (if available) of each family member in a well-formatted and organized manner.**
11. **Test your program by running it and observing the output.**

Evaluation Criteria:

- **Correct implementation of the Person and Family classes.**
- **Proper use of self-referential classes and the IEnumerable interface.**
- **Well-formatted and organized output.**
- **Correct functionality and error-free execution of the program.**
- **Proper implementation of WinForms to add and display the list of family members.**
- **SWAG (Style, Aesthetics, and General appeal) is expected in the user interface design.**

Before adding/displaying



After adding/displaying