COP 3275C Assignment 5-

**Assignment purpose**:  design and implement a class in C++ with  a default constructor, an explicit value constructor and accessor and mutator member functions for each private member variable (total of 12 member functions).

Separate the class declaration from the member function implementation. See the template code provided with the assignment. The declaration should be placed below the header comment and preprocessor directives. The member functions implementation will be placed below the class declaration and above the nonmember function prototypes.

Write a program that will manage 4 objects.(see the sample output):

1. One object will be initialized with the explicit value constructor
2. One object will be the default object (default constructor)
3. Two objects will be initialized with the default constructor and the new data will be entered by the user through a non member programmer defined function.

Create your own class (you may use the same object type as your struct from programming assignment 4) with 5 PRIVATE member variables , include accessor and mutator functions for each private member variable, also include a default constructor and an explicit value constructor.

DO NOT USE class vegetable.

EXAMPLE:

```cpp
class vegetable
{
public:
    vegetable(); //default constructor
    vegetable(string, string, int, double, double); //explicit value constructor

    //mutator functions – ONE FOR EACH PRIVATE MEMBER VARIABLE
    void SetName(string);
    void SetID(int);

    //accessor functions – ONE FOR EACH PRIVATE MEMBER VARIABLE
    string GetName() const;
    int GetID()const;

private:

    string name, color;
    int id;
    double costPerPound;
    double pricePerPound;
};
```

One member variable should be a unique ID.

For the strings, you do not need to worry about white space:

If you decide to use book for example, you can add underscores or use camelCase:
*Harry_Potter_and_the_Goblet_of_Fire* or *TheLordOfTheRings*

You will declare 4 objects of your type:

Your program should include TWO nonmember programmer defined functions.
The function prototypes should be placed above main and the function definitions below main.

- A function to fill the member variables with user input (be sure to prompt for each input one at a time)
  - This void function should take a reference parameter to your object, use **mutator functions** to update the private member variables

- A function to print the information for each object.
  - This void function should take a reference parameter to your object, use **accessor functions** to access the values and print on the screen.

SAMPLE OUTPUT:

```
Explicit value constructor
// the default constructor was called 3 times
default vegetable is carrot //remain default carrot
default vegetable is carrot //be replaced by user input
default vegetable is carrot //be replaced by user input

------Getting information from the user-----

Enter veggie name: green_beans
Enter veggie color: green
Enter the id: 222
Enter cost per pound: 1.79
Enter selling price per pound: 4.29


------Getting information from the user-----

Enter veggie name: brusselSprouts
Enter veggie color: green
Enter the id: 333
Enter cost per pound: 1.12
Enter selling price per pound: 2.87


------Printing Veggie info----- // Explicit value constructor

ID : 555
Veggie name: onion
Veggie color: white
Cost per pound: $1.50
Selling price per pound: $4.00


------Printing Veggie info----- //default vegetable

ID : 111
Veggie name: carrot
Veggie color: orange
Cost per pound: $0.75
Selling price per pound: $4.00
```

```
------Printing Veggie info-----

ID : 222
Veggie name: green_beans
Veggie color: green
Cost per pound: $1.79
Selling price per pound: $4.29


------Printing Veggie info-----

ID : 333
Veggie name: brusselSprouts
Veggie color: green
Cost per pound: $1.12
Selling price per pound: $2.87


...Program finished with exit code 0
Press ENTER to exit console.
```

**Additional instructions:**

- Be sure to comment your code (see the template file)
- Submit ONE source code file: lastname_A5.cpp
- Include a program header COMMENT with the following information:
  - Name, date, course, and a brief description of the assignment
- Test your code in an IDE before submitting
- The file names must match the assignment
- The code must be submitted on time in order to receive credit (11:59 PM on the due date)
  - NOTE: there is a grace period until 8:00 AM the following day
- The assignment allows multiple submissions you may make revisions and resubmit until the final due date

- Late submissions (after 8 AM or sent by email) will not be accepted or graded

Modifying data and submitting it as your own is a fraudulent practice—specifically, plagiarism—and is no different than copying paragraphs of information from a book or journal article and calling it your own (make sure that you work independently and submit only your own work)

**This programming assignment is individual work, sharing code is considered cheating,**

The use of AI to assist in this assignment is prohibited.