

1. Create a class called **Student** that represents student data in Prince Nora University. Student information should include **Name, id, total credit hours, GPA, and college.**

The class should have the following member functions:

- A **constructor** that initializes student name and id.
- **Setter** and **getter** function for **each** data member.
 - In **setGPA**: check if the GPA is not positive, set it to 0.
 - In **setCreditHours** check if it exceeds 130, set it to 130.
- A function **readFromKbd** for interactive entry from the keyboard with **prompts**. (HINT: use the setter).
- A function **AddCreditHours** that add hours to the total credit hours.
 - If the added hours are more than 15 hours, left it unchanged and print an error message "The added credit hours exceed the allowed limit".
- Function **displayStudentInfo** that displays all information of the student. (HINT: use the getters).

ID:
Name:
GPA:
College:
Total Credit Hours

write a short main() function to test your class:

- ✓ Create an object of the **Student**.
- ✓ Set all its information.
- ✓ Display all its information.
- ✓ Ask the user if he/she wants to add hours to the total credit hours. if the user enters y or Y:
 - Add hours to the total credit hours.
 - **Display** the total credit hours of student to show the effect of the update.
- ✓ Create another object of **Student**.
- ✓ Input the data members of this student object from the keyboard.
- ✓ Display its information.

- **The solution:**

```
#include <iostream>
#include <string>
using namespace std;

class student {

public:
    student(string n, int i){
        setName(n);
        setId(i);
    }

    void setName(string n){
        Name = n;
    }
    void setId(int i){
        id = i;
    }
    void setGpa(double gpa){
        if(gpa<0) GPA = 0;
        else GPA = gpa;
    }
    void setCreditHours(int t){
        if (t>130) totalCreditHours = 130;
        else totalCreditHours = t;
    }

    void setCollege(string c){
        college = c;
    }

    string getName(){
        return Name;
    }
    int getId(){
        return id;
    }
    double getGpa(){
        return GPA;
    }
    int getCreditHours(){
        return totalCreditHours;
    }

    string getCollege(){
        return college;
    }

    void readFromKbd(){

        //Temporary variables for user's inputs
        string temps;
        double tempd;
        int tempi;
        cout << "Enter the student information" << endl;
```

```

        cout << "Enter student GPA" << endl;
        cin >> tempd;
        setGpa(tempd);

    cout << "Enter college" << endl;
    cin >> temps;
    setCollege(temps);

    cout << "Enter total credit Hours" << endl;
    cin >> tempi;
    setCreditHours(tempi);
    }

    void AddCreditHours(int ch){
    if(ch > 15) cout <<"The added credit hours exceed the allowed limit" <<
endl;
    else
        totalCreditHours = totalCreditHours + ch;

    }

    void displayStudentInfo(){
    cout << "Name : " << getName() << endl;
    cout << "ID : " << getId() << endl;
    cout << "GPA : " << getGpa() << endl;
    cout << "Colloege : " << getCollege() << endl;
    cout << " Total credit hours : " << getCreditHours() << endl;
    }

private:
string Name;
int id;
int totalCreditHours;
double GPA;
string college;

};

void main(){

    student s("nora",1);

    s.setCollege("cs");
    s.setGpa(3.1);
    s.setCreditHours(80);
    s.displayStudentInfo();

    char ch;

    cout << "Do you want to add hours to the total credit hours for student : " <<
s.getName() << " ? , if yes , please enter y or Y" << endl;
    cin >> ch;

    if (ch == 'Y' || ch == 'y' ){

        cout << "enter the houts to be added : " << endl;
        int addedHours;
        cin >> addedHours;
        s.AddCreditHours(addedHours);
    }
}

```

```
        cout << "The updated total hours : " << s.getCreditHours() << endl;
    }

    student s2("Maha",12);

    s2.readFromKbd();
    s2.displayStudentInfo();
    system("pause");

}
```