**Case Study #1**

**Solve this case study in c++**

**Case Study**

We want to make a university management system. Suppose we need to consider the two departments;

1. Registration department
2. Examination department

Similarly, we need to consider the following four users;

1. Registrar
2. Director Exams
3. Faculty
4. Student

The system must ask the user, that the user want to apply for admission or not. The answer can be yes or no. If the answer is yes. First of all the student must be asked for name, father name, CNIC, date of birth, password and total marks in just bachelor degree. All this information is taken from the student, and hand over to the registration department. Registration department will allow the student to admit in the university if the total marks of the student in the bachelor are greater than 60% and further you need to check some other things with the following constraints.

* Bachelor marks must be greater than 60% and student birth year must be leap year.

When the registration department confirm the admission, then admission information must be shared with student.

**Q#1 6marks**

Keeping in view the case study, Write the program with the help of suitable OOP concepts as discussed in the class. No need to use all the concepts. Just use the concepts that are ideal to use in the program. If anyone use the OOP concepts that are not required in the case study, will be considered as a negative marking for the given question.

***Note:*** *Attempt question#1 and #2 together at the same place on the answer sheet and you can put the heading as Q1# and Q#2.*

**Q#2 6marks**

Keeping in view the case study, if a student is admitted in the university, then faculty can take exam of the student for first semester. The student information must be share by registration department to the faculty. When faculty marks the student for his/her paper, then his/her Grade(not marks) must be shared by the faculty to the Examination department. Similarly examination department can share the result with student but faculty is not allowed to share the result with students.

The student can see the result if and only if his/her CNIC and password will match by the system.

Suggest that we need to inherit or not and if yes then what suitable inheritance can be used in the program. Can you reduce the redundancy problem in this case or not?

***Note:*** *Attempt question#1 and #2 together at the same place on the answer sheet and you can put the heading as Q1# and Q#2.*