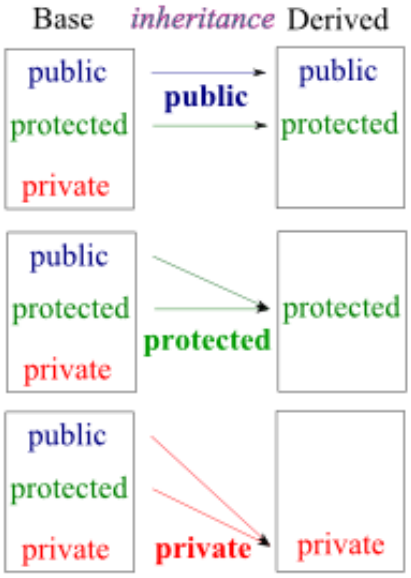
Assignment-4

Inheritance: Derived Class declaration, Public, Private and Protected Inheritance, Forms of inheritance

1. Most of the time we use public mode of inheritance, for example *class Derived: public Base{}* Try protected and private access modifiers to understand the difference of various modes of inheritance.



2. Write a C++ program to demonstrate example of hierarchical inheritance to get square and cube of a number.

3. Make a class named Fruit with a data member to calculate the number of fruits in a basket. Create two other class named Apples and Mangoes to calculate the number of apples and mangoes in the basket. Print the number of fruits of each type and the total number of fruits in the basket.

4. Class *Student* contains data members *RollNo and Name* as protected and member functions GetDetails() to get *RollNo and Name* and *DisplayDetails()* to display *RollNo and Name*.
   Class *Marks* is publicly inherited from *Student*. *Student* class contains protected data member *Subject1* and *Subject2* i.e. marks obtained in two subjects and *GetMarks()* and *DisplayMarks()* are two public member functions.
   Class *Result* is publicly inherited from *Marks*. It contains private data member *TotalMarks* and two public methods *CalculateResult()* and *DisplayResult()* with status whether the student has "*PASSED*" or "*FAILED*".
   Write a C ++ program to show the results according to the following formats:

```
Enter the number of students:  2
Enter student roll number: 1
Enter name of the student: A
Enter the marks of subject 1: 27
Enter the marks of subject 2: 32

Enter student roll number: 2
Enter name of the student: B
Enter the marks of subject 1: 65
Enter the marks of subject 2: 45
```

Roll No.	Name	Subject1	Subject2	Total Marks Obtained	Result
1	A	27	32	59	FAILED
2	B	65	45	110	PASSED

Make the necessary assumptions with comments.