

Assignment - 5

1A. Multiple inheritance means a class inherits from two or more classes.

2A. Delegation is an object oriented technique (also called a design pattern). Let's say you have an object x and want to change the behaviour of just one of its methods. You can create a new class that provides a new implementation of the method you're interested in changing and delegates all other methods to the corresponding method of x. Delegation is an alternative to inheritance for reusing code among multiple classes. Inheritance uses the IS-A relationship for re-use; delegation uses the HAS-A reference relationship to do the same.

3A. Composition - In this concept, we will describe a class that references to one or more objects of other classes as an Instance variable. Here, by using the class name or by creating the object we can access the members of one class inside another class. It enables creating complex types by combining objects of different classes. It means that a class Composite can contain an object of another class Component. This type of relationship is known as **Has-A Relation**.

4A. Bound methods - A bound method is the one which is dependent on the instance of the class as the first argument. It passes the instance as the first argument which is used to access the variables and functions. The instance obj is automatically passed as the first argument to the function called and hence the first parameter of the function will be used to access the variables/functions of the object.

5A. Psuedo private attributes - The problem that the pseudo-private attribute feature is meant to alleviate has to do with the way instance attributes are stored. In Python, all instance attributes wind up in the single instance object at the bottom of the class tree. This is very different from the C++ model, where each class gets its own space for data members it defines.