# Assignment 05 Solutions

## Q1. What is the meaning of multiple inheritance?

**ANS:** Inheritence is nothing but reusing the code of Relative class by the child class. Similary when a child class inherits its properties from multiple Relative classes this scenario is called **Multiple Inheritence**

```python
class Relative_one:
    pass
class Relative_two:
    pass
class child(Relative_one,Relative_two):
    pass
```

## Q2. What is the concept of delegation?

**ANS:** Delegation provides a proxy object for any class they you want on top of the main class. its like a wrapper to your class so that you can access limited resources of the main class.

it Wraps the object of main class into a smaller object with limited access.

Simply Delegation means that you can include a instance of another class as an instance variable, and forward messages to the instance.

In [2]:

```python
class Myclass:
    def sayHi(self):
        print('How r u')
    def howAmI(self):
        print('Iam the main class')
class NewClass:
    def __init__(self,obj):
        self.main = obj
    def welcome(self):
        self.main.sayHi()

t = Myclass()
h = NewClass(t)
t.sayHi()
h.main.sayHi()
h.welcome()
h.main.howAmI()
```

```
How r u
How r u
How r u
Iam the main class
```

## Q3. What is the concept of composition?

**ANS:** In the concept of Composition, a class refers to one or more other classes by using instances of those classes as a instance variable.irrespective of inheritence in this apporach all the parent class members are not inherited into child class, but only required methods from a class are used by using class instances.

In [6]:

```python
class Salary:
    def __init__(self,pay):
        self.pay = pay
    def get_total(self):
        return self.pay*12

class Employee:
    def __init__(self,pay,bonus):
        self.pay = pay
        self.bonus = bonus
        self.obj_salary = Salary(self.pay)
    def annual_salary(self):
        return f'Total Salary : {str(self.obj_salary.get_total())}'

obj_emp = Employee(700,400)
print(obj_emp.annual_salary())
```

```
Total Salary : 8400
```

# Q4. What are bound methods and how do we use them?

**ANS:** If a function is an attribute of class and it is accessed via the instances, they are called **bound methods**. A bound method is one that has **self** as its first argument. Since these are depent on the instance of classes, these are also known as **instance methods**.

```python
class Test:
    def method_one(self): # bound method
        print("Called method_one")
    @classmethod
    def method_two(lsc): # unbound method
        print("Called method_two")
    @staticmethod
    def method_three(): # static method
        print("Called method_three")

test = Test()
test.method_one() # accessing through instance object
test.method_two() # accessing through instance object
Test.method_two() # accessing directly through class
Test.method_three() # accessing directly through class
```

```
Called method_one
Called method_two
Called method_two
Called method_three
```

# Q5. What is the purpose of pseudoprivate attributes?

**ANS:** Pseudoprivate attributes are also useful in larger frameworks or tools, both to avoid introducing new method names that might accidentally hide definitions elsewhere in the class tree and to reduce the chance of internal methods being replaced by names defined lower in the tree. If a method is intended for use only within a class that may be mixed into other classes, the double underscore prefix ensures that the method won't interfere with other names in the tree, especially in multiple-inheritance scenarios.

Pseudoprivate names also prevent subclasses from accidentally redefining the internal method's names.

```python
class Super:
    def method(self): # A real application method
        pass
class Tool:
    def method(self): # becames _Tool_method
        pass
    def other(self): # uses internal method
        self.method()
class Subl(Tool,Super):
    def actions(self):
        self.method()
class Sub2(Tool):
    def __init__(self):
        self.method = 77
```