**Tutorial 8**

1. Refactor out the duplicate codes from `Student` and `Lecturer` classes into a new `Person` class. Change the class definitions of `Student` and `Lecturer` to inherit from this new `Person` class.

```
  class Student:
    def __init__(self, nm, mk, sn):
        self.name = nm
        self.mykad = mk
        self.studnumber = sn
    def getName(self):
        return self.name
    def getMyKad(self):
        return self.mykad
    def getStudNumber(self):
        return self.studnumber

class Lecturer:
    def __init__(self, nm, mk, sn, sal):
        self.name = nm
        self.mykad = mk
        self.staffnumber = sn
        self.salary = sal
    def getName(self):
        return self.name
    def getMyKad(self):
        return self.mykad
    def getStaffNumber(self):
        return self.staffnumber
    def getSalary(self):
        return self.salary
```

2. Define a `Vector3D` class, and overload its two `__add__` and `__mul__` operators, so that the class can be used such as below.

```
  v1 = Vector3D(1,2,3)
v2 = Vector3D(4,5,6)
v3 = v1 + v2 # Carry out vector addition, result is another vector.
print(v3) #   "[X=5.00,Y=7.00,Z=9.00]" is printed out
dot = v1 * v2 # Calculate dot product of vectors, result is a scalar.
print(dot) # "32" is printed out.
```