

HW3-CIS492/DSA230, 2022 Fall

Due time: 11:30 pm, 12/11/2022

Submissions should be written in Python 3 (100 points in total). Please submit your modified HW3.py file to BlackBoard system. This homework is to practice the object-oriented programming. First, please download and look at the provided file **HW3.py**. Then, modify it to finish the following tasks:

1. **Inheritance**: please define a superclass called **Person** which has a *name* and an *age*. Next, please define a subclass named **Doctor** which extends **Person** and has a *speciality* (such as Pediatrician, Obstetrician, etc.), and an annual *salary*. Then, please define a subclass called **Lawyer** which also derives from **Person** and has a *speciality* (patent, criminal defense, divorce, etc) and an annual *salary*.
2. **Polymorphism**: each of the above three classes has an **overriding** method called **RiseSalary**, which has no input parameters. In the superclass **Person**, the method **RiseSalary** just show "SALARY RISE REFUSED". In the subclass **Doctor**, the method **RiseSalary** will print the new salary that is 110% of the old salary. In the subclass **Lawyer**, the method **RiseSalary** will print the new salary that is 115% of the old salary.
3. There is a **given** method called **RiseSalary_twice**, which increases the corresponding **instance's** salary twice.

Note: You only need to write your code in the places with the reminder 'write your code here'. Please do not modify the code in other places. The expected print output after running HW3.py is as follows:

```
[person's name: Tom, age: 23]
[doctor's name: James, age: 38, speciality: Pediatrician, salary: 100000]
[Lawyer's name: Bob, age: 42, speciality: patent, salary: 100000]
SALARY RISE REFUSED
SALARY RISE REFUSED
110000.0
121000.0
115000.0
132250.0
```