



UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

IS2104 - Rapid Application Development 2020

Practical - 7 - Inheritance

In this tutorial, we are going to learn about how to use Inheritance in Java, which is a core pillar of object-oriented programming systems.

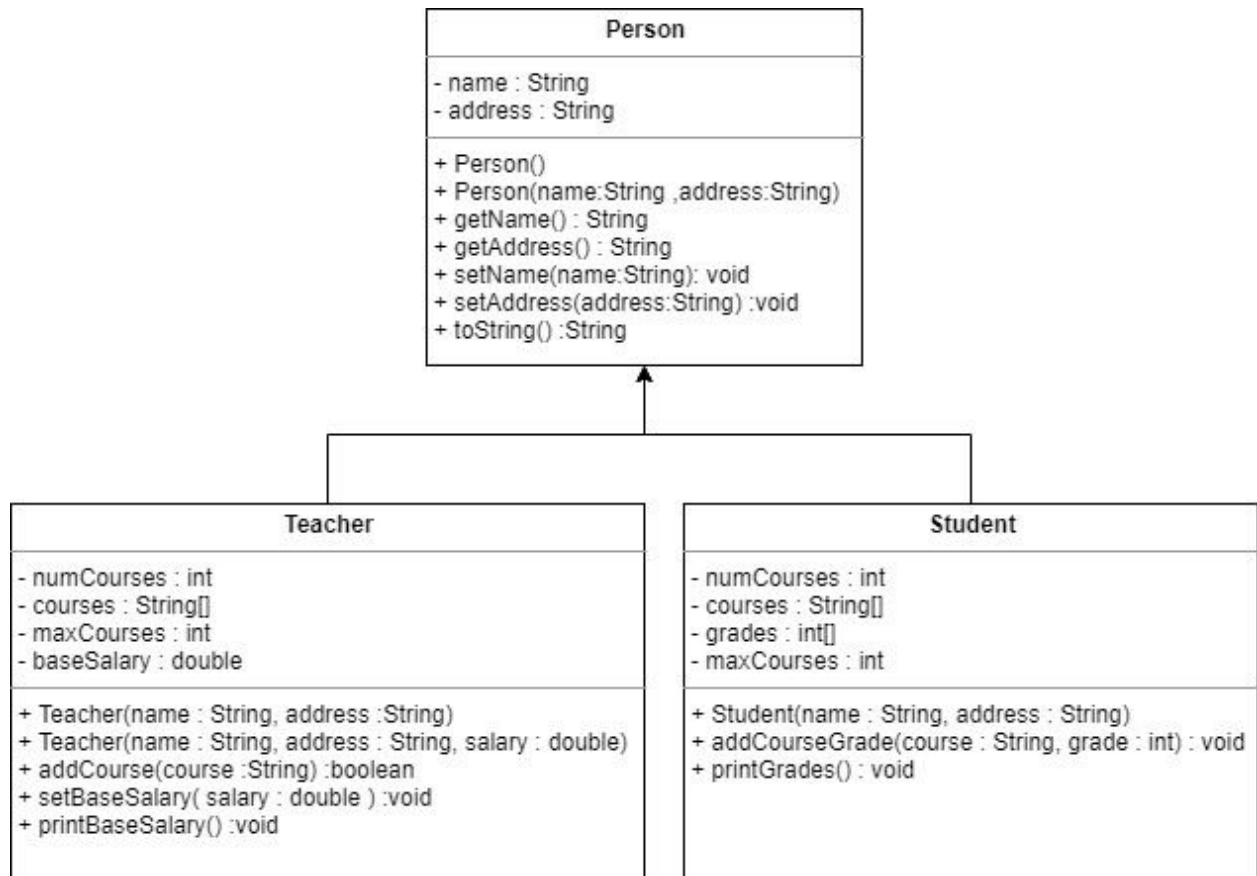
Instructions

1. You should submit
 - a. Four (4) **.java** and **.class** files from question number 1.
 - b. Four (4) **.java** and **.class** files from question number 2.
 - c. A report with screenshots of
 - i. Contents of 8 java files
 - ii. Outputs of 2 running .class files with the given test cases
 - d. The report must be in **PDF** format.
 - e. The report name should be **<Index Number>.pdf** eg – 18000000.pdf
2. Zip all files, name it **<Index Number >.zip**, and upload it to the submission link. eg – 18000000.zip
3. Use an appropriate text editor (eg – Notepad, Notepad ++). You are not allowed to use IDEs
4. Any form of plagiarism or collusion is not allowed.

Practical - 7

Question A

Given below is the UML diagram for a Person class inheritance hierarchy:



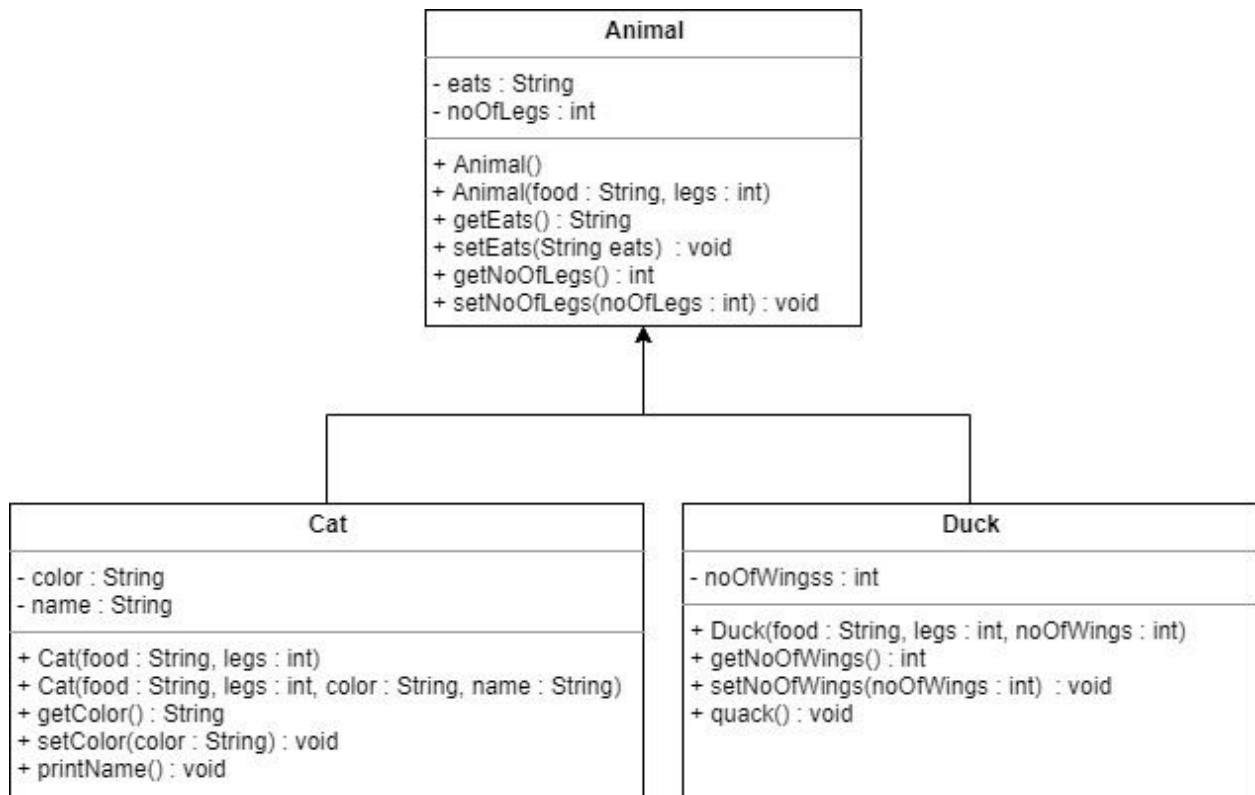
Write a test program named **TestPerson.java** that gives the following output: Names of source code file to be submitted are: **Person.java**, **Teacher.java**, **Student.java**, and **TestPerson.java**

```
D:\java\practical 7>javac TestPerson.java
D:\java\practical 7>java TestPerson
Details of students
-----
Name: Mark Fernando | Address: 67, Colombo.
Course IS101: Grade : 97
Course IS102: Grade : 68

Details of teachers
-----
Name: Lori Silva | Address: 10/A, Colombo.
baseSalary: 12000.0
Course CS101 assigned.
Course CS102 assigned.
```

Question B

For this lab assignment, you have to write a program (**TestAnimal.java**) to demonstrate below-given Animal class inheritance hierarchy:



You have to use the following source files to get the output given below. **Animal.java**, **Cat.java**, **Duck.java**, **TestAnimal.java**

```
D:\java>javac AnimalTest.java

D:\java>java AnimalTest
Name of cat is Pussy
Cat eats milk
Cat has 4 legs.
Cat color is Black
Duck eats Vegetables
Duck has 2 legs.
Duck can quack.
```

Hint: Use the starter file given below as a template for creating **TestAnimal.java**

```
public class AnimalTest {  
  
    public static void main(String[] args) {  
        // Create cat object  
        // Create duck object  
  
        // print name of the cat hint: use appropriate method in here  
  
        System.out.println("Cat eats " + cat.getEats());  
        //insert other related four (4) print statements here  
  
        // print "i can quack" here hint: use appropriate method in here  
    }  
}
```