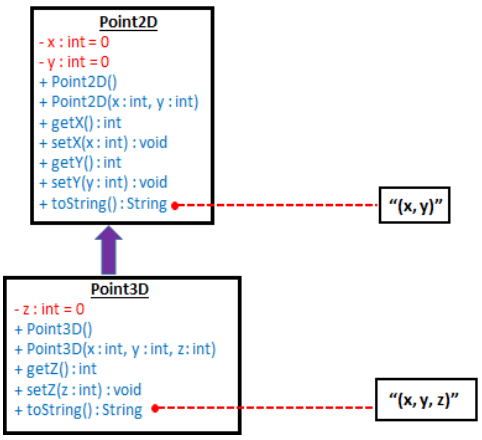
Assignment-6

1. Create a class *Account* having data members *accNo*, *balance*, *timePeriod* and *intInYears*(as static and initialize with **7.5%**). The class should also contain the following methods:

- float*calculateInterst*() which calculates and returns the interest amount.
- void*showAccDetails*() which displays account number, balance and calculated interest amount.
- staticvoid*changeIntRate*(float *newRate*) which changes the interest rate to *newRate*.

Create an array of object of the class *Account*. Store the details of each object through the parameterized constructor. Display all the account details by calling the method *showAccDetails*().Change the interest rate to a new one by calling the method *changeIntRate*(). Finally display the account details after the change in interest rate.

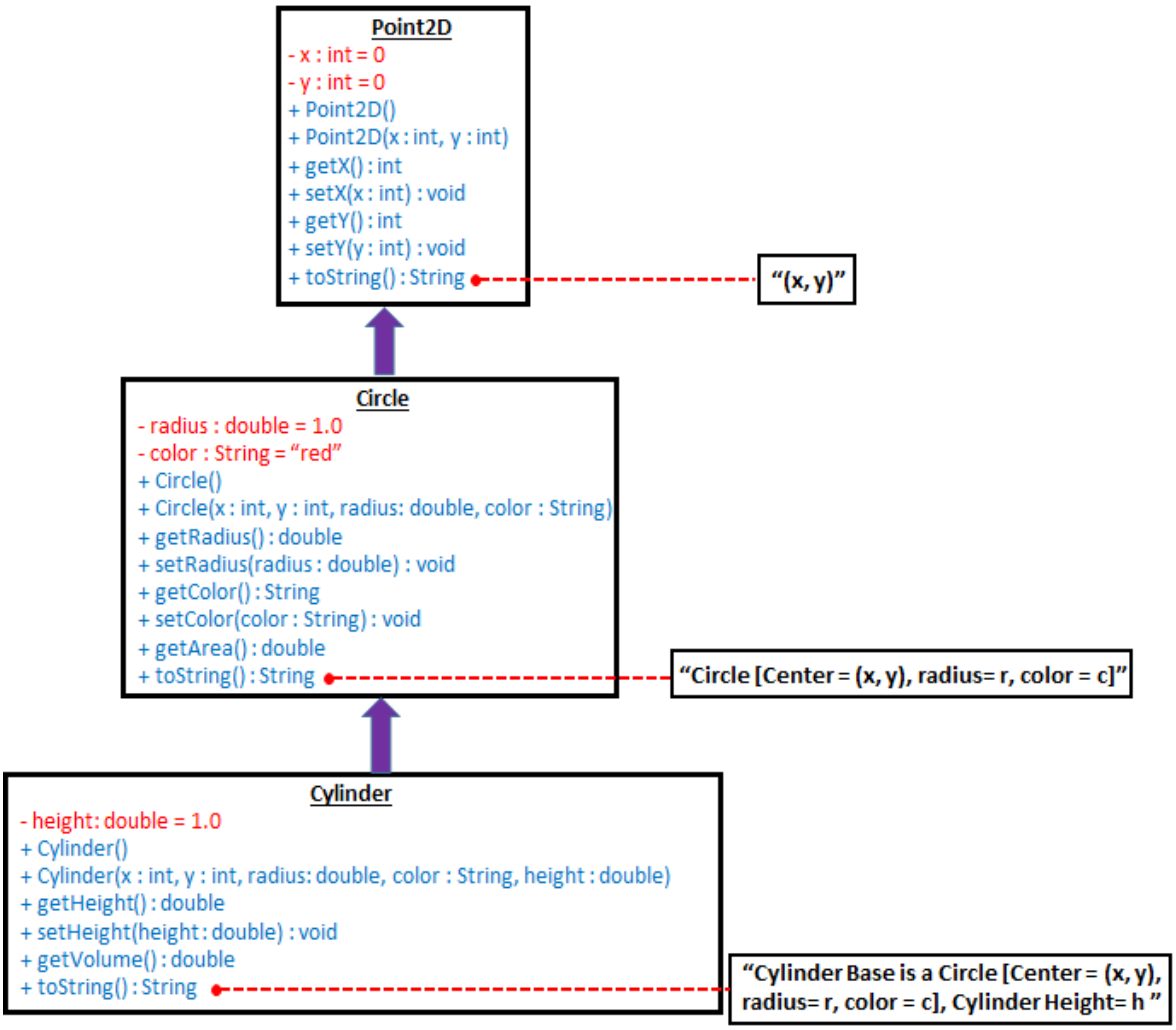
2.



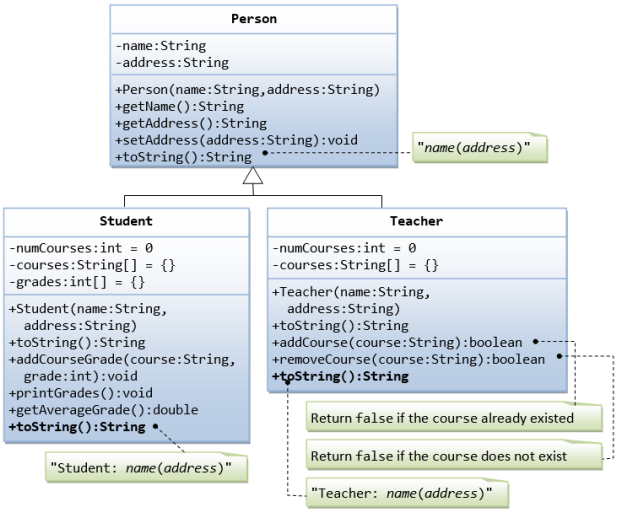
Create a class **Point2D** with the data member and methods shown in the class diagram. Note that the items with a minus sign (-) indicate private members and items with a plus sign (+) indicate public members. Create a subclass called **Point3D** which is derived from the superclass **Point2D**.Test the methods of both the classes by creating objects in the main method of another class.

3.

Create a derived class **Circle** inherited from the class **Point2D** (created in the previous question) with the data member and methods shown in the following class diagram. Create a subclass called **Cylinder** which is derived from the superclass Circle. Test the methods of Circle and Cylinder classes by creating objects in the main method of another class.



4.



We are required to model students and teachers in an application. We can define a superclass called **Person** to store common properties such as name and address, and subclasses **Student** and **Teacher** for their specific properties. For students, we need to

maintain the courses taken and their respective grades; *add a course with grade*, *print all courses taken* and *the average grade*. Assume that a student takes no more than **6** courses for the entire program. For teachers, we need to maintain the courses taught currently, and able to add or remove a course taught. Assume that a teacher teaches not more than **5** courses concurrently.Test the methods of both the derived classes by creating objects of the derived classes in the main method of another class.