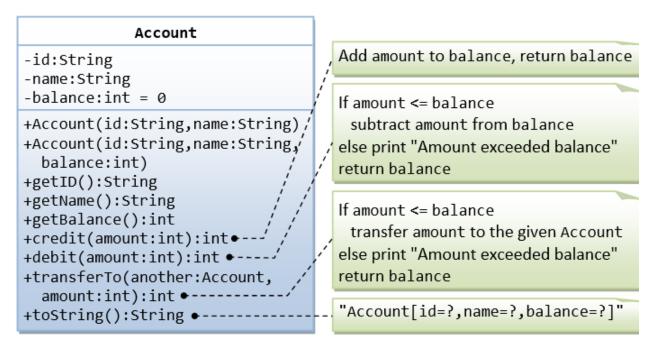
## Task 2

- 1- Write a program to create interface A in this interface we have two method meth1 and meth2. Implements this interface in another class named MyClass.
- 2- Write this program in java

A class called **circle** is designed as shown in the following class diagram. It contains:

- Two private instance variables: radius (of the type double) and color (of the type String), with default value of 1.0 and "red", respectively.
- Two *overloaded* constructors a *default* constructor with no argument, and a constructor which takes a double argument for radius.
- Two public methods: getRadius() and getArea(), which return the radius and area of this instance, respectively.
- 3- A class called Account, which models a bank account of a customer, is designed as shown in the following class diagram. The

methods credit(amount) and debit(amount) add or subtract the given amount to the balance. The method transferTo(anotherAccount, amount) transfers the given amount from this Account to the given anotherAccount. Write the Account class.



4- Suppose that we are required to model <u>students</u> and <u>teachers</u> in our application. We can define a <u>superclass</u> called <u>Person</u> to store common properties such as <u>name</u> and <u>address</u>, and subclasses Student and Teacher for their specific properties. For students, we need to maintain the <u>courses</u> taken and their respective <u>grades</u>; add a <u>course with grade</u>, print all <u>courses taken</u> and the <u>average grade</u>. Assume that a student takes no more than <u>30</u> courses for the entire program. For teachers, we need to maintain the <u>courses</u> taught currently, and able to <u>add</u> <u>or remove a course</u> taught. Assume that a teacher teaches not more than <u>5</u> courses concurrently.

```
Person
              -name:String
              -address:String
              +Person(name:String,address:String)
              +getName():String
              +getAddress():String
              +setAddress(address:String):void
                                                        "name(address)"
              +toString():String
            Student
                                                    Teacher
-numCourses:int = 0
                                    -numCourses:int = 0
-courses:String[] = {}
                                    -courses:String[] = {}
-grades:int[] = {}
                                    +Teacher(name:String,
+Student(name:String,
                                      address:String)
  address:String)
                                    +toString():String
+toString():String
                                    +addCourse(course:String):boolean •-
+addCourseGrade(course:String,
                                    +removeCourse(course:String):boolean •
                                    +toString():String
  grade:int):void
+printGrades():void
+getAverageGrade():double
                                         Return false if the course already existed
+toString():String •
                                         Return false if the course does not exist
     "Student: name(address)"
                                         "Teacher: name(address)"
```