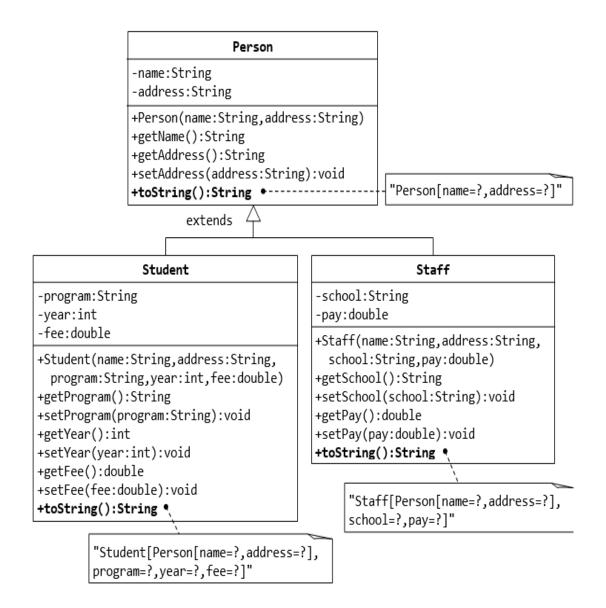
Practical #7: Inheritance

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Tasks Sheet

1. Write programs for the following class diagrams:

```
Circle
-radius:double = 1.0
-color:String = "red"
+Circle()
+Circle(radius:double)
+Circle(radius:double,color:String)
+getRadius():double
+setRadius(radius:double):void
+getColor():String
+setColor(color:String):void
+getArea():double
                                           "Circle[radius=r,color=c]"
+toString():String •
                    \ superclass
          extends
                     subclass
                Cylinder
-height:double = 1.0
+Cylinder()
+Cylinder(radius:double)
+Cylinder(radius:double,height:double)
+Cylinder(radius:double,height:double,
   color:String)
+getHeight():double
+setHeight(height:double):void
+getVolume():double
```



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```
Shape

-color:String = "red"
-filled:boolean = true

+Shape()
+Shape(color:String, filled:boolean)
+getColor():String
+setColor(color:String):void
+isFilled():boolean
+setFilled(filled:boolean):void
+toString():String
```

Circle

- -radius:double = 1.0
- +Circle()
- +Circle(radius:double)
- +Circle(radius:double,
 - color:String,filled:boolean)
- +getRadius():double
- +setRadius(radius:double):void
- +getArea():double
- +getPerimeter():double
- +toString():String

Rectangle

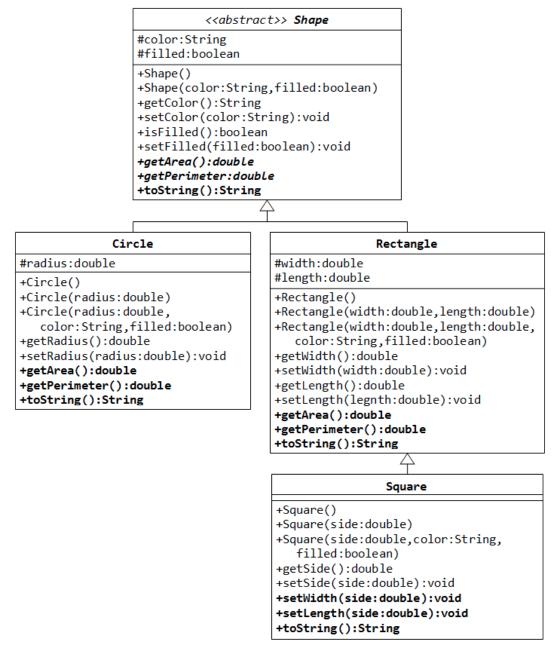
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- -width:double = 1.0
- -length:double = 1.0
- +Rectangle()
- +Rectangle(width:double,
 - length:double)
- +Rectangle(width:double,
 - length:double,
 - color:String,filled:boolean)
- +getWidth():double
- +setWidth(width:double):void
- +getLength():double
- +setLength(legnth:double):void
- +getArea():double
- +getPerimeter():double
- +toString():String

\perp

Square

- +Square()
- +Square(side:double)
- +Square(side:double,
 - color:String,filled:boolean)
- +getSide():double
- +setSide(side:double):void
- +setWidth(side:double):void
- +setLength(side:double):void
- +toString():String



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Note: Abstract methods are shown in italics in the class diagram.