



Taibah University
College of Computer Science and Engineering (Yanbu)
Spring(2022)
CS112-Programming II
Coursework03

Due Mon 18 Apr 08:00 AM

Instructions

1. You must submit your solution using Blackboard. **Email submissions will not be accepted.** Blackboard can be accessed from the University's website using the following address :
<https://lms.taibahu.edu.sa>
2. You can discuss answers with your colleagues, but **cheating is prohibited and there will be extreme consequences.**

Problem1

Suppose we want to design a generic method to find the larger of two objects of the same type, such as circles. Java provides the **Comparable** interface for this purpose.

In this coursework, you are asked to do the following tasks:

- (a) Define a class named **ComparableCircle** that extends **Circle** and implements **Comparable**.

Solution:

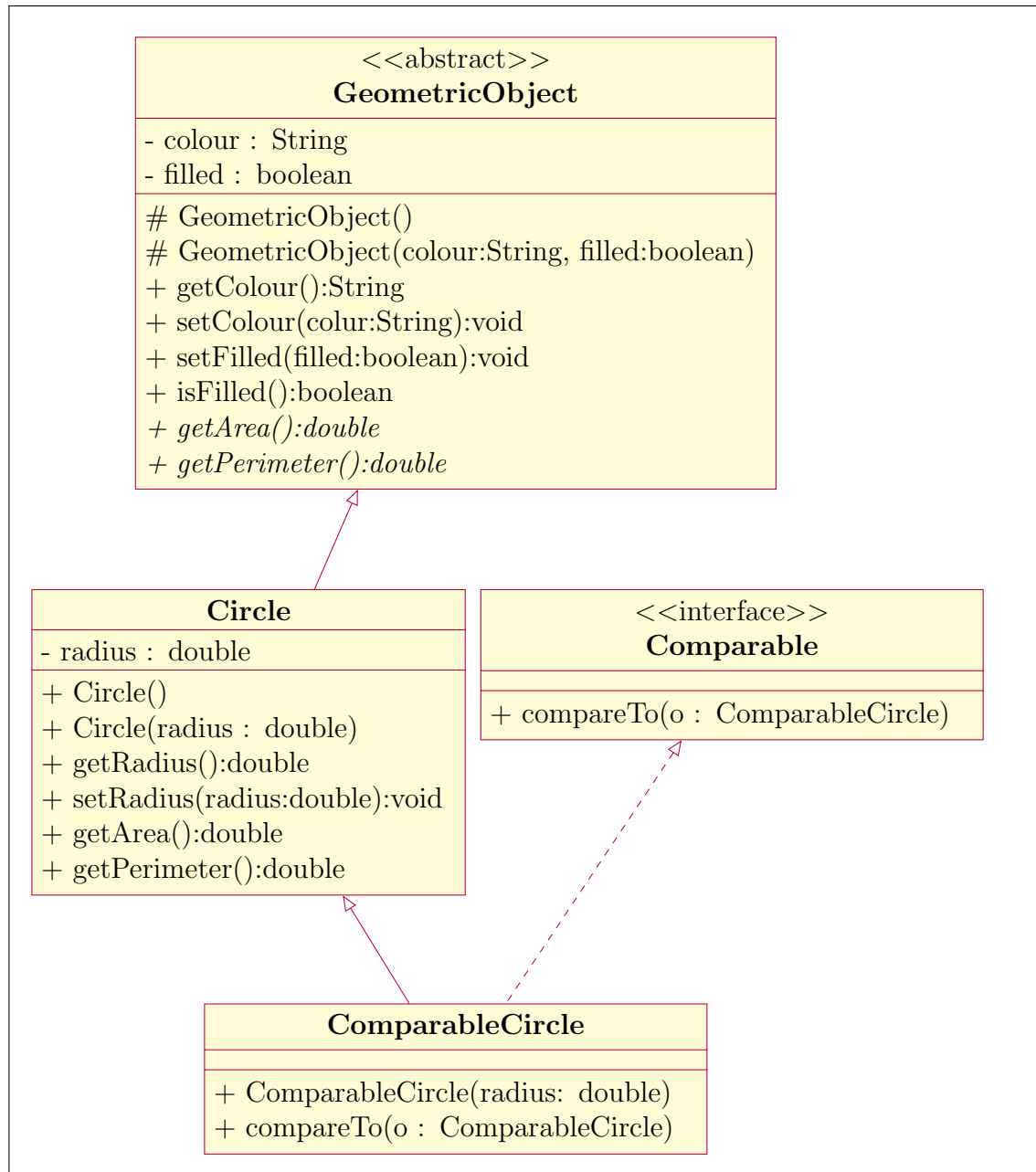
```
public class ComparableCircle extends Circle implements
Comparable<ComparableCircle>{
    private int age;

    ComparableCircle(double radius){
        super(radius);
    }

    public int compareTo(ComparableCircle o)
    {
        if(this.getArea()>o.getArea())
            return 1;
        else if(this.getArea() == o.getArea())
            return 0;
        else
            return -1;
    }
}
```

- (b) Draw the UML diagram and implement **compareTo** method to compare the circles' objects on the basis of area.

Solution:



(c) Write a test class to find the larger of two instances of `ComparableCircle` objects.

Solution:

```
public class testComparableCircle{
    public static void main(String[] args){
        ComparableCircle c1= new ComparableCircle(3.0);
        ComparableCircle c2= new ComparableCircle(3.4);

        System.out.println(c1.compareTo(c2));
    }
}
```

Good luck

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