جامعة اليمامة
Al Yamamah University

COLLEGE OF ENGINEERING AND ARCHITECTURE

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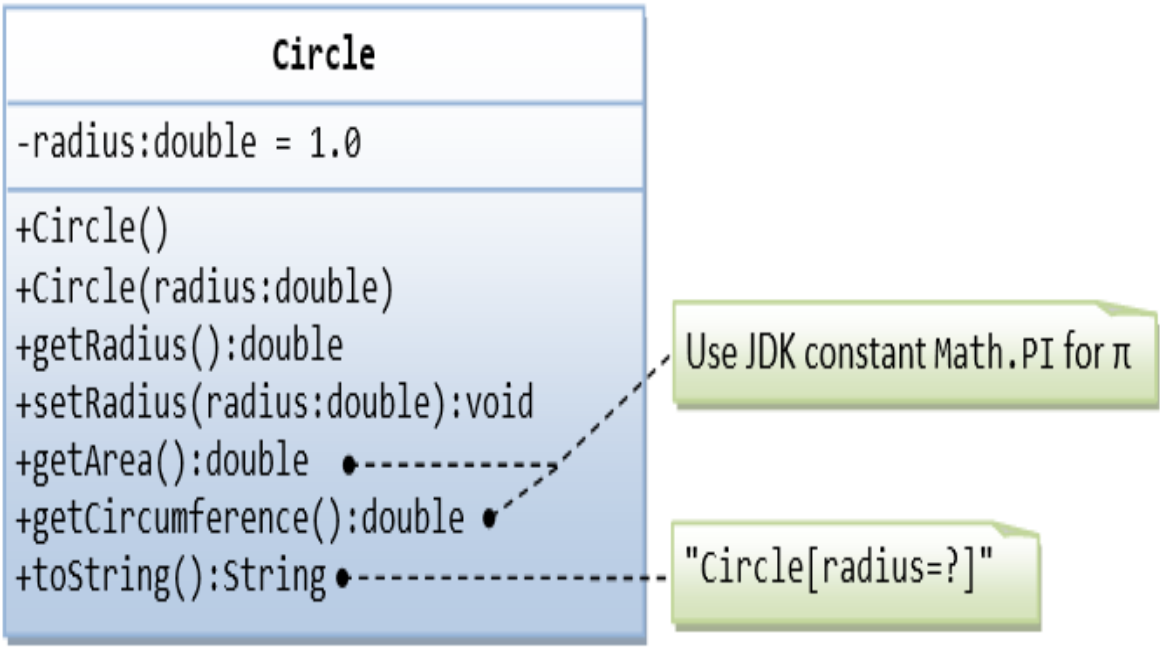
FALL SEMESTER

COURSE : CIS 104

Lab 2 Solution
Object / Class



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

- A private instance variable: radius (of the type double) with a default value of 1.0
- Two *overloaded* constructors - a *default* constructor with no argument, and a constructor which takes a double argument for radius.
- A public method ***setRadius*** for changing the radius of a Circle instance.
- Two public methods: ***getRadius***() and ***getArea***(), which return the radius and area of this instance, respectively.
- A public method ***getCircumference*** which returns the circumference
- A public method called ***toString***() that returns a description of the instance (in the return type of String)
    1. Write in Java the class Circle
    2. Write in Java a Test Driver to test your Circle class.

```java
public class Circle {

private double radius;

//default constructor

public Circle()
{
	radius = 1.0;
}

//Constructor With Parameters
public Circle(double radius)
{
	this.radius = radius;
}


//Setter
public void setRadius(double radius) {
	this.radius = radius;
}

//Getter
public double getRadius() {
	return radius;
}
public double getarea()
{
	return Math.PI * radius * radius;
}

public double getCircumference()
{
	return 2 * Math.PI * radius;
}

public void display()
{
	System.out.println("The radius is : " + radius);
}

@Override
public String toString() {
	return "Circle [radius=" + radius + "]";
}

}
```

```
public class Test_Circle {

	public static void main(String[] args) {

	  Circle C1 = new Circle();
	  C1.display();

	  C1.setRadius(55.75);

	  System.out.println(C1.toString());

	  System.out.println("The radius is: " + C1.getRadius());

	  System.out.println("The Area is : " + C1.getarea());

	  System.out.println("The Circumference is : " +
	   C1.getCircumference());


System.out.println("=============================================");

	  Circle C2 = new Circle(75.75);


	  System.out.println(C2.toString());

	  System.out.println("The Area is : " + C2.getarea());
	  System.out.println("The Circumference is : " +
	  C2.getCircumference());


	}

}
```