

## Programming Lab Exercise 5

Before you start:

Create a folder called **lab5** inside your personal **java** folder you created at the start. Save all your work for lab5 in this folder.

**Purpose:**

Tests your understanding of the concept of classes and inheritance in Java.

**Q1.**

- a) Create a java class called `Point` which will be used to describe a point in 2D space. It will need to have two protected variables `x` and `y` to represent the coordinates of the point. Create the necessary getter and setter methods. Also create a `toString()` method
  - b) Create a subclass of `Point` called `Circle` which will need an additional attribute called `radius`. Define the necessary getter and setter methods for `radius`.
  - c) Your classes should be able to run using the following driver program:
- ```
// Author      : Oisin Cawley
// Date       : Jan-2016
// Purpose    : A test driver program for our
               : Point/Circle inheritance
```

```
public class MyFirstCircle
{
    public static void main (String args[])
    {
        Point myPoint = new Point(10, 20);

        Circle myCircle = new Circle(15, 30, 5);

        System.out.println("Point details : " +
myPoint);
        System.out.println("Circle details: " +
myCircle);
    }
}
```