

IST 256  
Lab Week 14, Wednesday, December 1, 2010

### 1. Practice in Writing a Method in a Data Class

Suppose that we have a class that represents circles. The circles are defined by the (x,y) coordinates of the location of the center of the circle and by the radius of the circle. There is a method to get the radius and a method to calculate the area of the circle.

```
public class Circle
{
    // fields for the radius and the coordinates
    private double radius;
    private double x,y;

    // constructor initializes all three fields
    public Circle ( double startradius, double startx, double starty)
    {
        radius = startradius;
        x = startx;   y = starty;
    }

    // access the radius
    public double getRadius()
    {
        return radius;
    }

    // compute the area of the circle as the constant pi times radius squared
    public double computeArea()
    {
        return ((radius * radius) * 3.1759 );
    }
}
```

Write a method called `getDiameter` that could be added to this class to return the diameter of the circle. (Recall that diameter is 2 times the radius.)

## 2. Designing a Class

Suppose that we have a file Pictures.txt that contains information about images. Each line of the file has the name of the image, the name of the photographer, the number of prints sold and the type (either Color or B&W for black and white). An example file might look like:

```
MountainAdams,40,B&W
Workers,Salgado,31,B&W
Flower,Mapplethorpe,25,Color
Baseball,Allen,200,Color
Woman,Lange,38,B&W
```

a. First design a class that is suitable to keep the data from each line of this file. The name of the class should be Picture and it should have fields for imagename, photographer, numprints, and medium. These fields should all be public and there should be one Constructor method that initializes the fields. No other methods are required at this time.

b. Write the declaration of a one-dimensional array of objects of the type Picture defined by the class in part a. The array should allow up to 12 elements.