IIIT-Vadodara	
Lab 07	CSE-202 Object Oriented Programming
	Autumn'2014 [22-Sep-2014]

1. Suppose you are given following set of interfaces. Put all these interfaces in three different files. Retain the package info.

```
package inheritance.shape;

public interface Shape {
    public double PI = 3.14159;
    public void draw();
}
```

```
package inheritance.shape;

public interface Shape2D extends Shape{

    public double getArea();
    public double getPerimeter();

}
```

```
package inheritance.shape;

public interface Shape3D extends Shape{

    public double getSurfaceArea();
    public double getVolume();

}
```

2. By implementing appropriate interface, create following classes. Their responsibility should be self explanatory. Put all classes in `inheritance.shape` package. Each class that you create should go in different file.

   Triangle
   Circle
   Rectangle
   Cylider
   Prism
   Pyramid

3. Also take note of following while you are implementing these classes.
   a. It is necessary that classes implement appropriate shape interface.
   b. Override toString, equals and clone method for all classes.
   c. For simplicity, in implementation of draw, you simply output object details on `System.out` object.
   d. Reuse the classes wherever possible

4. Create a `ShapeTester` class that creates an array object that contains mix of shape objects; manipulate these shape objects through array elements. Use your ideas to see various effects of type substitution and late binding.