

## Shape Classes

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Sources: Oracle.com and Big Java

Summary: Shape classes are used to create objects in Java and can be displayed in an applet or Java application. The main two shapes that can be made are rectangles and ellipses. You can also use points and lines to make different shapes. Lines, cubic curves, polygons, rectangles, and ellipses are some of the shape classes present in Java. The shape interface has some important methods to implement such as a contains method, which tests if a point is within the shape.

Uses: Besides being aesthetically pleasing, shapes are the basis for much more complex projects like BallWorld. Shapes can be given certain colors and sizes and be placed anywhere in the window you create. Shapes may be altered and redrawn.

A basic Rectangle Constructor would be called by:

Rectangle(x coordinate of the top left corner, y coordinate of the top left corner, width, height)

A basic Ellipse Constructor would be called by:

Ellipse2D.Double(x coordinate top left corner, y coordinate top left corner, x axis diameter, y axis diameter)

Other shapes can be formed by constructing points:

Point2D.Double(x coordinate, y coordinate)

These points can then be connected with lines:

Line2D.Double(Point2D, Point2D)

Once a shape is defined, you can use the Graphics2D abstract class to “paint” it, or make it visible.

Our example, “Wheel”, demonstrates how shapes are constructed. The Wheel class contains algorithms for a visual representation of a wheel of varying size with varying numbers of spokes.