

Graphics Summary

Shape Types

There are four types of shapes in JavaFX graphics:

- Open shapes — An open shape does not bound an area. Its `fill` property should be set to `Color.TRANSPARENT` or styled with `-fx-fill: none;`
 - Line
 - Arc
 - QuadCurve
 - CubicCurve
 - PolyLine
- Closed shapes — A closed shapes bounds an area. Its `fill` property can be set. The following shapes are closed.
 - Circle
 - Ellipse
 - Polygon
 - Rectangle —
- Paths — A Path is made up of elements from subclasses of the abstract `PathElement` class. It is grouped into one or more segments, each beginning with a `MoveTo` element. Segments that end with a `Close` element are closed. Otherwise they are open.

The `PathElement` class has the following concrete subclasses.

- ArcTo
- ClosePath
- CubicCurveTo
- HLineTo
- LineTo
- MoveTo
- QuadCurveTo
- VLineTo
- Text (`javafx.scene.text`)
 - Text

Shape Properties

Two types of properties determine the shape and location of a Shape object:

- point properties are x-y pairs of properties specifying the location of a point. The point can be the center of an ellipse or circle, the upper-left corner of a rectangle, the endpoints of a line, quad curve or cubic curve or control points of a quad curve or cubic curve.
- any other shape property.

Styles

Graphics shapes can be styled with cascading style sheets. The most commonly used CSS properties are listed below.

CSS Property	Values	Default Value
-fx-fill	<paint>	black
-fx-stroke	<paint>	null
-fx-stroke-width	<size>	1
-fx-stroke-type	[inside outside centered]	centered
-fx-stroke-dash-array	<size>[<size>]+	an empty array, effectively a solid line.
-fx-stroke-dash-offset	<number>	0
-fx-stroke-line-cap	[square butt round]	square
-fx-stroke-line-join	[miter bevel round]	miter

Since the default fill is "black", open shapes such as cubic curves get filled. The area filled is defined by closing the curve with a line from its start point to its end point. This is usually undesirable. To avoid it you can set -fx-fill to "transparent";

The following CSS properties are used to set the font for text shapes. These properties are inherited unless explicitly specified.

-fx-font-family	<font-family>
-fx-font-size	<font-size>
-fx-font-style	<font-style>
-fx-font-weight	<font-weight>

Transforms

For fancy graphics, transforms are often used to rotate, scale, or move shapes. The Transform class is the parent class for all transforms. It has the following useful specializations:

- Rotate rotates a shape
- A Scale scales a shape
- A Translate moves a shape.