| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/RoundRectangle2D.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/awt/geom/RectangularShape.html)   [**NEXT CLASS**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Double.html) | [**FRAMES**](http://docs.google.com/index.html?java/awt/geom/RoundRectangle2D.html)    [**NO FRAMES**](http://docs.google.com/RoundRectangle2D.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: [NESTED](#3znysh7) | FIELD | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: FIELD | [CONSTR](#2s8eyo1) | [METHOD](#3rdcrjn) |

## **java.awt.geom**

Class RoundRectangle2D

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 [java.awt.geom.RectangularShape](http://docs.google.com/java/awt/geom/RectangularShape.html)  
 **java.awt.geom.RoundRectangle2D**

**All Implemented Interfaces:** [Shape](http://docs.google.com/java/awt/Shape.html), [Cloneable](http://docs.google.com/java/lang/Cloneable.html) **Direct Known Subclasses:** [RoundRectangle2D.Double](http://docs.google.com/java/awt/geom/RoundRectangle2D.Double.html), [RoundRectangle2D.Float](http://docs.google.com/java/awt/geom/RoundRectangle2D.Float.html)

public abstract class **RoundRectangle2D**extends [RectangularShape](http://docs.google.com/java/awt/geom/RectangularShape.html)

The RoundRectangle2D class defines a rectangle with rounded corners defined by a location (x,y), a dimension (w x h), and the width and height of an arc with which to round the corners.

This class is the abstract superclass for all objects that store a 2D rounded rectangle. The actual storage representation of the coordinates is left to the subclass.

**Since:** 1.2

| **Nested Class Summary** | |
| --- | --- |
| static class | [**RoundRectangle2D.Double**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Double.html)            The Double class defines a rectangle with rounded corners all specified in double coordinates. |
| static class | [**RoundRectangle2D.Float**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Float.html)            The Float class defines a rectangle with rounded corners all specified in float coordinates. |

| **Constructor Summary** | |
| --- | --- |
| protected | [**RoundRectangle2D**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#RoundRectangle2D())()            This is an abstract class that cannot be instantiated directly. |

| **Method Summary** | |
| --- | --- |
| boolean | [**contains**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#contains(double,%20double))(double x, double y)            Tests if the specified coordinates are inside the boundary of the Shape. |
| boolean | [**contains**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#contains(double,%20double,%20double,%20double))(double x, double y, double w, double h)            Tests if the interior of the Shape entirely contains the specified rectangular area. |
| boolean | [**equals**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#equals(java.lang.Object))([Object](http://docs.google.com/java/lang/Object.html) obj)            Determines whether or not the specified Object is equal to this RoundRectangle2D. |
| abstract  double | [**getArcHeight**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#getArcHeight())()            Gets the height of the arc that rounds off the corners. |
| abstract  double | [**getArcWidth**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#getArcWidth())()            Gets the width of the arc that rounds off the corners. |
| [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) | [**getPathIterator**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#getPathIterator(java.awt.geom.AffineTransform))([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)            Returns an iteration object that defines the boundary of this RoundRectangle2D. |
| int | [**hashCode**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#hashCode())()            Returns the hashcode for this RoundRectangle2D. |
| boolean | [**intersects**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#intersects(double,%20double,%20double,%20double))(double x, double y, double w, double h)            Tests if the interior of the Shape intersects the interior of a specified rectangular area. |
| void | [**setFrame**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#setFrame(double,%20double,%20double,%20double))(double x, double y, double w, double h)            Sets the location and size of the framing rectangle of this Shape to the specified rectangular values. |
| abstract  void | [**setRoundRect**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#setRoundRect(double,%20double,%20double,%20double,%20double,%20double))(double x, double y, double w, double h, double arcWidth, double arcHeight)            Sets the location, size, and corner radii of this RoundRectangle2D to the specified double values. |
| void | [**setRoundRect**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html#setRoundRect(java.awt.geom.RoundRectangle2D))([RoundRectangle2D](http://docs.google.com/java/awt/geom/RoundRectangle2D.html) rr)            Sets this RoundRectangle2D to be the same as the specified RoundRectangle2D. |

| **Methods inherited from class java.awt.geom.**[**RectangularShape**](http://docs.google.com/java/awt/geom/RectangularShape.html) |
| --- |
| [clone](http://docs.google.com/java/awt/geom/RectangularShape.html#clone()), [contains](http://docs.google.com/java/awt/geom/RectangularShape.html#contains(java.awt.geom.Point2D)), [contains](http://docs.google.com/java/awt/geom/RectangularShape.html#contains(java.awt.geom.Rectangle2D)), [getBounds](http://docs.google.com/java/awt/geom/RectangularShape.html#getBounds()), [getCenterX](http://docs.google.com/java/awt/geom/RectangularShape.html#getCenterX()), [getCenterY](http://docs.google.com/java/awt/geom/RectangularShape.html#getCenterY()), [getFrame](http://docs.google.com/java/awt/geom/RectangularShape.html#getFrame()), [getHeight](http://docs.google.com/java/awt/geom/RectangularShape.html#getHeight()), [getMaxX](http://docs.google.com/java/awt/geom/RectangularShape.html#getMaxX()), [getMaxY](http://docs.google.com/java/awt/geom/RectangularShape.html#getMaxY()), [getMinX](http://docs.google.com/java/awt/geom/RectangularShape.html#getMinX()), [getMinY](http://docs.google.com/java/awt/geom/RectangularShape.html#getMinY()), [getPathIterator](http://docs.google.com/java/awt/geom/RectangularShape.html#getPathIterator(java.awt.geom.AffineTransform,%20double)), [getWidth](http://docs.google.com/java/awt/geom/RectangularShape.html#getWidth()), [getX](http://docs.google.com/java/awt/geom/RectangularShape.html#getX()), [getY](http://docs.google.com/java/awt/geom/RectangularShape.html#getY()), [intersects](http://docs.google.com/java/awt/geom/RectangularShape.html#intersects(java.awt.geom.Rectangle2D)), [isEmpty](http://docs.google.com/java/awt/geom/RectangularShape.html#isEmpty()), [setFrame](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrame(java.awt.geom.Point2D,%20java.awt.geom.Dimension2D)), [setFrame](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrame(java.awt.geom.Rectangle2D)), [setFrameFromCenter](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrameFromCenter(double,%20double,%20double,%20double)), [setFrameFromCenter](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrameFromCenter(java.awt.geom.Point2D,%20java.awt.geom.Point2D)), [setFrameFromDiagonal](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrameFromDiagonal(double,%20double,%20double,%20double)), [setFrameFromDiagonal](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrameFromDiagonal(java.awt.geom.Point2D,%20java.awt.geom.Point2D)) |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [toString](http://docs.google.com/java/lang/Object.html#toString()), [wait](http://docs.google.com/java/lang/Object.html#wait()), [wait](http://docs.google.com/java/lang/Object.html#wait(long)), [wait](http://docs.google.com/java/lang/Object.html#wait(long,%20int)) |

| **Methods inherited from interface java.awt.**[**Shape**](http://docs.google.com/java/awt/Shape.html) |
| --- |
| [getBounds2D](http://docs.google.com/java/awt/Shape.html#getBounds2D()) |

| **Constructor Detail** |
| --- |

### RoundRectangle2D

protected **RoundRectangle2D**()

This is an abstract class that cannot be instantiated directly. Type-specific implementation subclasses are available for instantiation and provide a number of formats for storing the information necessary to satisfy the various accessor methods below.

**Since:** 1.2 **See Also:**[RoundRectangle2D.Float](http://docs.google.com/java/awt/geom/RoundRectangle2D.Float.html), [RoundRectangle2D.Double](http://docs.google.com/java/awt/geom/RoundRectangle2D.Double.html)

| **Method Detail** |
| --- |

### getArcWidth

public abstract double **getArcWidth**()

Gets the width of the arc that rounds off the corners.

**Returns:**the width of the arc that rounds off the corners of this RoundRectangle2D.**Since:** 1.2

### getArcHeight

public abstract double **getArcHeight**()

Gets the height of the arc that rounds off the corners.

**Returns:**the height of the arc that rounds off the corners of this RoundRectangle2D.**Since:** 1.2

### setRoundRect

public abstract void **setRoundRect**(double x,  
 double y,  
 double w,  
 double h,  
 double arcWidth,  
 double arcHeight)

Sets the location, size, and corner radii of this RoundRectangle2D to the specified double values.

**Parameters:**x - the X coordinate to which to set the location of this RoundRectangle2Dy - the Y coordinate to which to set the location of this RoundRectangle2Dw - the width to which to set this RoundRectangle2Dh - the height to which to set this RoundRectangle2DarcWidth - the width to which to set the arc of this RoundRectangle2DarcHeight - the height to which to set the arc of this RoundRectangle2D**Since:** 1.2

### setRoundRect

public void **setRoundRect**([RoundRectangle2D](http://docs.google.com/java/awt/geom/RoundRectangle2D.html) rr)

Sets this RoundRectangle2D to be the same as the specified RoundRectangle2D.

**Parameters:**rr - the specified RoundRectangle2D**Since:** 1.2

### setFrame

public void **setFrame**(double x,  
 double y,  
 double w,  
 double h)

Sets the location and size of the framing rectangle of this Shape to the specified rectangular values.

**Specified by:**[setFrame](http://docs.google.com/java/awt/geom/RectangularShape.html#setFrame(double,%20double,%20double,%20double)) in class [RectangularShape](http://docs.google.com/java/awt/geom/RectangularShape.html) **Parameters:**x - the X coordinate of the upper-left corner of the specified rectangular shapey - the Y coordinate of the upper-left corner of the specified rectangular shapew - the width of the specified rectangular shapeh - the height of the specified rectangular shape**Since:** 1.2 **See Also:**[RectangularShape.getFrame()](http://docs.google.com/java/awt/geom/RectangularShape.html#getFrame())

### contains

public boolean **contains**(double x,  
 double y)

Tests if the specified coordinates are inside the boundary of the Shape.

**Parameters:**x - the specified X coordinate to be testedy - the specified Y coordinate to be tested **Returns:**true if the specified coordinates are inside the Shape boundary; false otherwise.**Since:** 1.2

### intersects

public boolean **intersects**(double x,  
 double y,  
 double w,  
 double h)

Tests if the interior of the Shape intersects the interior of a specified rectangular area. The rectangular area is considered to intersect the Shape if any point is contained in both the interior of the Shape and the specified rectangular area.

The Shape.intersects() method allows a Shape implementation to conservatively return true when:

* there is a high probability that the rectangular area and the Shape intersect, but
* the calculations to accurately determine this intersection are prohibitively expensive.

This means that for some Shapes this method might return true even though the rectangular area does not intersect the Shape. The [Area](http://docs.google.com/java/awt/geom/Area.html) class performs more accurate computations of geometric intersection than most Shape objects and therefore can be used if a more precise answer is required.

**Parameters:**x - the X coordinate of the upper-left corner of the specified rectangular areay - the Y coordinate of the upper-left corner of the specified rectangular areaw - the width of the specified rectangular areah - the height of the specified rectangular area **Returns:**true if the interior of the Shape and the interior of the rectangular area intersect, or are both highly likely to intersect and intersection calculations would be too expensive to perform; false otherwise.**Since:** 1.2 **See Also:**[Area](http://docs.google.com/java/awt/geom/Area.html)

### contains

public boolean **contains**(double x,  
 double y,  
 double w,  
 double h)

Tests if the interior of the Shape entirely contains the specified rectangular area. All coordinates that lie inside the rectangular area must lie within the Shape for the entire rectanglar area to be considered contained within the Shape.

The Shape.contains() method allows a Shape implementation to conservatively return false when:

* the intersect method returns true and
* the calculations to determine whether or not the Shape entirely contains the rectangular area are prohibitively expensive.

This means that for some Shapes this method might return false even though the Shape contains the rectangular area. The [Area](http://docs.google.com/java/awt/geom/Area.html) class performs more accurate geometric computations than most Shape objects and therefore can be used if a more precise answer is required.

**Parameters:**x - the X coordinate of the upper-left corner of the specified rectangular areay - the Y coordinate of the upper-left corner of the specified rectangular areaw - the width of the specified rectangular areah - the height of the specified rectangular area **Returns:**true if the interior of the Shape entirely contains the specified rectangular area; false otherwise or, if the Shape contains the rectangular area and the intersects method returns true and the containment calculations would be too expensive to perform.**Since:** 1.2 **See Also:**[Area](http://docs.google.com/java/awt/geom/Area.html), [Shape.intersects(double, double, double, double)](http://docs.google.com/java/awt/Shape.html#intersects(double,%20double,%20double,%20double))

### getPathIterator

public [PathIterator](http://docs.google.com/java/awt/geom/PathIterator.html) **getPathIterator**([AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) at)

Returns an iteration object that defines the boundary of this RoundRectangle2D. The iterator for this class is multi-threaded safe, which means that this RoundRectangle2D class guarantees that modifications to the geometry of this RoundRectangle2D object do not affect any iterations of that geometry that are already in process.

**Parameters:**at - an optional AffineTransform to be applied to the coordinates as they are returned in the iteration, or null if untransformed coordinates are desired **Returns:**the PathIterator object that returns the geometry of the outline of this RoundRectangle2D, one segment at a time.**Since:** 1.2

### hashCode

public int **hashCode**()

Returns the hashcode for this RoundRectangle2D.

**Overrides:**[hashCode](http://docs.google.com/java/lang/Object.html#hashCode()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**the hashcode for this RoundRectangle2D.**Since:** 1.6 **See Also:**[Object.equals(java.lang.Object)](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

### equals

public boolean **equals**([Object](http://docs.google.com/java/lang/Object.html) obj)

Determines whether or not the specified Object is equal to this RoundRectangle2D. The specified Object is equal to this RoundRectangle2D if it is an instance of RoundRectangle2D and if its location, size, and corner arc dimensions are the same as this RoundRectangle2D.

**Overrides:**[equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)) in class [Object](http://docs.google.com/java/lang/Object.html) **Parameters:**obj - an Object to be compared with this RoundRectangle2D. **Returns:**true if obj is an instance of RoundRectangle2D and has the same values; false otherwise.**Since:** 1.6 **See Also:**[Object.hashCode()](http://docs.google.com/java/lang/Object.html#hashCode()), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/RoundRectangle2D.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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