

Rectangle2ddemo

Class Rectangle2D

java.lang.Object
rectangle2ddemo.Rectangle2D

```
public class Rectangle2D  
extends java.lang.Object
```

Describes a rectangle in a graphical coordinate plane.

Since:

99-99-9999

• *Field Summary*

Fields

Modifier and Type	Field and Description
double	height The height of this Rectangle2D.
double	width The width of this Rectangle2D.
double	x The X coordinate of this Rectangle2D.
double	y The Y coordinate of this Rectangle2D.

• *Constructor Summary*

Constructors

Constructor and Description

Rectangle2D()

Creates a rectangle whose location is (0,0) and width and height are both 0.

Rectangle2D(double xLoc, double yLoc, double w, double h)

Creates a rectangle using the specified parameters.

Rectangle2D(Point2D.Double loc, double w, double h)

Creates a rectangle using the specified parameters

- **Method Summary**

All MethodsInstance MethodsConcrete Methods	
Modifier and Type	Method and Description
boolean	contains (double xCoord, double yCoord) Determines whether a point with the specified coordinates is in this rectangle.
boolean	equals (Rectangle2D r) Determines whether this rectangle and the specified rectangle have the same location and dimension.
double	getHeight () Gives the height of this rectangle.
Point2D.Double	getLocation () Gives the location of this rectangle.
double	getWidth () Gives the width of this rectangle
double	getX () Gives the x-coordinate of the location of this rectangle
double	getY () Gives the y-coordinate of the location of this rectangle
void	setRect2D (double xLoc, double yLoc, double w, double h) Modifies a rectangle using the specified parameters.
String	toString () Gives a string representation of this rectangle in the format Rectangle2D[x=..,y=..,width=..,height=..] where ..

- **Constructor Detail**

- **Rectangle2D**

```
public Rectangle2D()
```

Creates a rectangle whose location is (0,0) and width and height are both 0.

- **Rectangle2D**

- ```
public Rectangle2D(Point2D.Double loc,
```
- ```
double w,
```
- ```
double h)
```

Creates a rectangle using the specified parameters

**Parameters:**

loc - the location of the top-left corner of the rectangle

w - the width of the rectangle

h - the height of the rectangle

- **Rectangle2D**

- ```
public Rectangle2D(double xLoc,
```
- ```
double yLoc,
```
- ```
double w,
```
- ```
double h)
```

Creates a rectangle using the specified parameters.

**Parameters:**

xLoc - the x-coordinate of the location

yLoc - the y-coordinate of the location

w - the width of the rectangle

h - the height of the rectangle

- **Method Detail**

- **getHeight**

```
public double getHeight()
```

Gives the height of this rectangle.

**Returns:**

the height of this rectangle

- **getWidth**

```
public double getWidth()
```

Gives the width of this rectangle

**Returns:**

the width of this rectangle.

- **getLocation**

```
public Point2D.Double getLocation()
```

Gives the location of this rectangle.

**Returns:**

the point representing the top-left corner of this rectangle.

- **getX**

```
public double getX()
```

Gives the x-coordinate of the location of this rectangle

**Returns:**

the x-coordinate of the location of this rectangle.

- **getY**

```
public double getY()
```

Gives the y-coordinate of the location of this rectangle

**Returns:**

the y-coordinate of the location of this rectangle.

- **setRect2D**

- ```
public void setRect2D(double xLoc,
```
- ```
double yLoc,
```
- ```
double w,
```
- ```
double h)
```

Modifies a rectangle using the specified parameters.

**Parameters:**

xLoc - the x-coordinate of the new location

yLoc - the y-coordinate of the new location

w - the new width of this rectangle

h - the new height of this rectangle

- **toString**

```
public String toString()
```

Gives a string representation of this rectangle in the format `Rectangle2D[x=..,y=..,width=..,height=..]` where `..` denotes the numeric value of each field. For a `Rectangle2D` object at (5.0,7.0) whose width is 75.2 and height=40.51, the following string is returned:  
`Rectangle2D[x=5.0,y=7.0,width=75.2,height=40.51]`

**Overrides:**

`toString` in class `java.lang.Object`

**Returns:**

a formatted string representing this rectangle in the format  
`Rectangle2D[x=..,y=..,width=..,height=..]`

- **contains**

- ```
public boolean contains(double xCoord,  
                        double yCoord)
```

Determines whether a point with the specified coordinates is in this rectangle.

Parameters:

`xCoord` - the x-coordinate of the point

`yCoord` - the y-coordinate of the point

Returns:

true when the point with the specified x-y coordinates is in this rectangle; otherwise, false.

- **equals**

```
public boolean equals(Rectangle2D r)
```

Determines whether this rectangle and the specified rectangle have the same location and dimension.

Parameters:

`r` - a `Rectangle2D` object

Returns:

true when the specified `rectangle2D` object is equal to this rectangle; otherwise, false.

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