
Class java.awt.Rectangle

```
java.lang.Object
   |
   +----java.awt.Rectangle
```

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public class **Rectangle**
extends Object

An rectangle, defined by x, y, width and height.

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Constructs a rectangle and initializes it to specified point and dimension.

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  Add a point to a rectangle.
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  Compute the union of two rectangles.

Variables

- **x**

```
public int x
```

The x coordinate of the rectangle.

- **y**

```
public int y
```

The y coordinate of the rectangle.

- **width**

```
public int width
```

The width of the rectangle.

- **height**

```
public int height
```

The height of the rectangle.

Constructors

- **Rectangle**

```
public Rectangle()
```

Constructs a new rectangle.

- **Rectangle**

```
public Rectangle(int x,
                 int y,
                 int width,
                 int height)
```

Constructs and initializes a rectangle with the specified parameters.
Parameters:
x – the x coordinate
y – the y coordinate
width – the width of the rectangle
height – the height of the rectangle

- **Rectangle**

```
public Rectangle(int width,
                 int height)
```

Constructs a rectangle and initializes it with the specified width and height parameters.

Parameters:

width – the width of the rectangle
height – the height of the rectangle

- **Rectangle**

```
public Rectangle(Point p,
                 Dimension d)
```

Constructs a rectangle and initializes it to specified point and dimension.

Parameters:

p – the point
d – dimension

- **Rectangle**

```
public Rectangle(Point p)
```

Constructs a rectangle and initializes it to the specified point.

Parameters:

p – the value of the x and y coordinate

- **Rectangle**

```
public Rectangle(Dimension d)
```

Constructs a rectangle and initializes it to the specified width and height.

Parameters:

d – the value of the width and height

Methods

- **reshape**

```
public void reshape(int x,
                    int y,
                    int width,
                    int height)
```

Reshape the rectangle.

- **move**

```
public void move(int x,
                 int y)
```

Move the rectangle.

- **translate**

```
public void translate(int x,
                      int y)
```

Translate the rectangle.

- **resize**

```
public void resize(int width,
                   int height)
```

Resize the rectangle.

- **inside**

```
public boolean inside(int x,
                      int y)
```

Checks if the specified point lies inside a rectangle.
Parameters:
x – the x coordinate
y – the y coordinate

- **intersects**

```
public boolean intersects(Rectangle r)
```

Check if two rectangles intersect.

- **intersection**

```
public Rectangle intersection(Rectangle r)
```

Compute the intersection of two rectangles.

- **union**

```
public Rectangle union(Rectangle r)
```

Compute the union of two rectangles.

- **add**

```
public void add(int x,
                int y)
```

Add a point to a rectangle. This results in the smallest rectangle that contains both the rectangle and the point

- **add**

```
public void add(Point pt)
```

  Add a point to a rectangle. This results in the smallest rectangle that contains both the rectangle and the point

- **add**

```
public void add(Rectangle r)
```

  Add a rectangle to a rectangle. This results in the union of the two rectangles.

- **grow**

```
public void grow(int h,
                 int v)
```

  Grow the rectangle horizontally and vertically.

- **isEmpty**

```
public boolean isEmpty()
```

  Check if the rectangle is empty.

- **hashCode**

```
public int hashCode()
```

  Hashcode
  Overrides:
  hashCode in class Object

- **equals**

```
public boolean equals(Object obj)
```

  Check if two rectangles are equal.
  Overrides:
  equals in class Object

- **toString**

```
public String toString()
```

  Returns the String representation of this Rectangle's values.
  Overrides:
  toString in class Object