

## Summary 5 - Methods: Returning Values and the *void* keyword

- What is this?

Some methods return a value, e.g. the *length* method of the String class:

```
String s = "Hello";  
int x = s.length();
```

The above sets x to 5.

Other methods just "do" things and don't return a value, e.g. the *println* method of the PrintStream class:

```
System.out.println("Hello");
```

The above causes "Hello" to be printed, but nothing is returned from the call to the *println* method.

The keyword **void** indicates a method that does not return a value, e.g.

```
public void stop()
```

Pitfall: constructors never return a value, but must NOT have the **void** keyword in their definition. Here is a hard-to-spot error:

```
public void Eye() {  
    ...  
}
```

This looks like a constructor for the Eye class, but it is really a badly-named method!

- Examples (from the Rectangle class documentation)

double	<a href="#">getHeight()</a> Returns the height of the bounding Rectangle in double precision.
<a href="#">Point</a>	<a href="#">getLocation()</a> Returns the location of this Rectangle.
<a href="#">Dimension</a>	<a href="#">getSize()</a> Gets the size of this Rectangle, represented by the returned Dimension.
double	<a href="#">getWidth()</a> Returns the width of the bounding Rectangle in double precision.
double	<a href="#">getX()</a> Returns the X coordinate of the bounding Rectangle in double precision.
double	<a href="#">getY()</a> Returns the Y coordinate of the bounding Rectangle in double precision.
void	<a href="#">grow(int h, int v)</a> Resizes the Rectangle both horizontally and vertically.

Of the above methods, only the *grow* method does not return a value; the other methods return values, of various types.

- For further study:
  - *Big Java*, section 2.4 *Method Parameters and Return Values*
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