

JAVA.LANG.STRICTMATH.TANH METHOD

http://www.tutorialspoint.com/java/lang/strictmath_tanh.htm

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Description

The **java.lang.StrictMath.tanh** method returns the hyperbolic tangent of a double value. The hyperbolic tangent of **x** is defined to be $(e^x - e^{-x}) / (e^x + e^{-x})$. It includes these cases:

- If the argument is NaN, then the result is NaN.
- If the argument is zero, then the result is a zero with the same sign as the argument.
- If the argument is positive infinity, then the result is +1.0.
- If the argument is negative infinity, then the result is -1.0.

Declaration

Following is the declaration for **java.lang.StrictMath.tanh** method

```
public static double tanh(double x)
```

Parameters

- **x** -- This is the number whose hyperbolic tangent is to be returned.

Return Value

This method returns the hyperbolic tangent of x.

Exception

- **NA**

Example

The following example shows the usage of java.lang.StrictMath.tanh method.

```
package com.tutorialspoint;

import java.lang.*;

public class StrictMathDemo {

    public static void main(String[] args) {

        double d1 = (90*Math.PI)/180 , d2 = 0.0;
        double d3 = (1.0)/(0.0), d4 = -(1.0)/(0.0);

        // returns the hyperbolic trigonometric tangent of an angle.

        double tanhValue = StrictMath.tanh(d1);
        System.out.println("hyperbolic tangent of d1 = " + tanhValue);

        tanhValue = StrictMath.tanh(d2);
        System.out.println("hyperbolic tangent of d2 = " + tanhValue);

        tanhValue = StrictMath.tanh(d3);
        System.out.println("hyperbolic tangent of d3 = " + tanhValue);

        tanhValue = StrictMath.tanh(d4);
        System.out.println("hyperbolic tangent of d4 = " + tanhValue);
    }
}
```

Let us compile and run the above program, this will produce the following result:

```
hyperbolic tangent of d1 = 0.9171523356672744  
hyperbolic tangent of d2 = 0.0  
hyperbolic tangent of d3 = 1.0  
hyperbolic tangent of d4 = -1.0
```

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