Package me.miles.matthew.spaceflight.Utils

Class Vector2d

java.lang.Object
    me.miles.matthew.spaceflight.Utils.Vector2d

```
public class Vector2d
extends java.lang.Object
```

Field Summary

Fields

Modifier and Type	Field	Description
double	x	
double	y	

Constructor Summary

Constructors

Constructor	Description
Vector2d()	Creates a new zero vector
Vector2d(double x, double y)	Creates a new vector with the given coordinates
Vector2d(Vector2d v)	Creates a new vector with the same coordinates as the given vector

Method Summary

All Methods | Instance Methods | Concrete Methods

Modifier and Type	Method	Description
Vector2d	add(double x, double y)	Add another vector from this vector.
Vector2d	add(Vector2d v)	Add another vector to this vector.
double	length()	Get the length of the vector
Vector2d	multiply(double scalar)	Multiply this vector by a scalar.

Modifier and Type	Method	Description
Vector2d	normalize()	Make the length of the vector 1 without changing direction
Vector2d	normalize(double length)	Resize the vector to a certain length without changing direction.
Vector2d	rotate(double angle)	Rotate the vector by a certain angle.
Vector2d	subtract(double x, double y)	Subtract another vector from this vector.
Vector2d	subtract(Vector2d v)	Subtract another vector from this vector.

Methods inherited from class java.lang.Object

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Details

x

```
public double x
```

y

```
public double y
```

Constructor Details

Vector2d

```
public Vector2d()
```

Creates a new zero vector

Vector2d

```
public Vector2d(double x,
                double y)
```

Creates a new vector with the given coordinates

Parameters:

`x` - The x coordinate

`y` - The y coordinate

Vector2d

```
public Vector2d(Vector2d v)
```

Creates a new vector with the same coordinates as the given vector

Parameters:

`v` - The vector to copy

Method Details

length

```
public double length()
```

Get the length of the vector

normalize

```
public Vector2d normalize()
```

Make the length of the vector 1 without changing direction

normalize

```
public Vector2d normalize(double length)
```

Resize the vector to a certain length without changing direction. Modifies the vector.

Parameters:

`length` - The length to resize to

Returns:

The resized vector

rotate

```
public Vector2d rotate(double angle)
```

Rotate the vector by a certain angle. Modifies the vector.

Parameters:

`angle` - The angle to rotate by

Returns:

The rotated vector

add

```
public Vector2d add(Vector2d v)
```

Add another vector to this vector. Modifies the vector.

Parameters:

`v` - The vector to add

Returns:

The vector after addition

add

```
public Vector2d add(double x,
                    double y)
```

Add another vector from this vector. Modifies the vector.

Parameters:

`x` - The x coordinate of the vector to add

`y` - The y coordinate of the vector to add

Returns:

The vector after subtraction

subtract

```
public Vector2d subtract(Vector2d v)
```

Subtract another vector from this vector. Modifies the vector.

Parameters:

`v` - The vector to subtract

Returns:

The vector after subtraction

subtract

```
public Vector2d subtract(double x,
                         double y)
```

Subtract another vector from this vector. Modifies the vector.

Parameters:

`x` - The x coordinate of the vector to subtract

`y` - The y coordinate of the vector to subtract

Returns:

The vector after subtraction

multiply

```
public Vector2d multiply(double scalar)
```

Multiply this vector by a scalar. Modifies the vector.

Parameters:

`scalar` -

Returns:

The vector after multiplication