**7 kyu**

**Vectors #1**

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C#

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##Let's make this short!

*Remember, this is a kata which focuses on object oriented programming*

* **Task**: Create a class Vector3D
* **Properties**: X, Y, Z and Length as double and public scope and accessors
* X, Y and Z will be set by test methods
* Length should only have an get-accessor which calculates the vector's length

##Some references, to get into the topic

The length or magnitude or norm of the vector a is denoted by ‖a‖ or, less commonly, |a|, which is not to be confused with the absolute value (a scalar "norm").

The length of the vector a can be computed with the Euclidean norm

* [How to calculate a vector's length](https://en.wikipedia.org/wiki/Euclidean_vector#Length) - *Link created 2016/11/15*

##Tests

Final tests include 2 fixed and 125 random tests. They will look like this:

double length = new Vector3D()

{

X = 0,

Y = 0,

Z = 2

}.Length;

length == 2 // true

##PostScriptum

If this kata gets enough reputation, I will add some follow up katas!

<https://www.codewars.com/kata/vectors-number-1/csharp>

**using System;**

**public class Vector3D**

**{**

**public double X { get; set; }**

**public double Y { get; set; }**

**public double Z { get; set; }**

**public double Length**

**{**

**get**

**{**

**double length = Math.Pow(X, 2) + Math.Pow(Y, 2) + Math.Pow(Z, 2);**

**length = Math.Sqrt(length);**

**return length;**

**}**

**}**

**}**