

# cVector3f

## Fields

Field Name	Type	Description
x	float	The x value of the vector.
y	float	The y value of the vector.
z	float	The z value of the vector.

## Functions

Return Type	Function Name	Parameters	Description
float	GetElement	uint64 allDx, const	Gets the value at the given index. (Indices 0, 1, and 2 are equal to x, y, and z, respectively.)
void	SetElement	uint64 allDx, float, const	Sets the value at the given index to the given value. (Indices 0, 1, and 2 are equal to x, y, and z, respectively.)
float	SqrLength	const	Returns the length-squared of this vector.
float	Length	const	Returns the length of this vector.
float	Normalize		Returns the normalization factor for this vector. (See Remarks.)

## Remarks

A normalized vector is a vector whose length is equal to one, otherwise known as a unit vector. To convert a vector into a unit vector, get the normalization factor by calling the `Normalize` function, then divide each of the vector's x, y, and z coordinates by that factor.

```
cVector3f vBaseVector(2.0, 5.0, 3.0);
float fNormFactor = vBaseVector.Normalize();
cVector3f vNormalizedVector(vBaseVector.x / fNormFactor,
                           vBaseVector.y / fNormFactor,
                           vBaseVector.z / fNormFactor);
```

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Last update: **2015/11/06 03:40**

