

cVector4f

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. |
| w | float | The w value of the vector. |

Functions

| Return Type | Function Name | Parameters | Description |
|-------------|---------------|-----------------------------|--|
| float | GetElement | uint64 allIdx, const | Gets the value at the given index. (Indices 0, 1, 2, and 3 are equal to x, y, z, and w respectively.) |
| void | SetElement | uint64 allIdx, float, const | Sets the value at the given index to the given value. (Indices 0, 1, 2, and 3 are equal to x, y, z, and w 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, z, and w coordinates by that factor.

```
cVector4f vBaseVector(2.0, 5.0, 3.0, 4.0);
float fNormFactor = vBaseVector.Normalize();
cVector3f vNormalizedVector(vBaseVector.x / fNormFactor,
                           vBaseVector.y / fNormFactor,
                           vBaseVector.z / fNormFactor,
                           vBaseVector.w / fNormFactor);
```

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