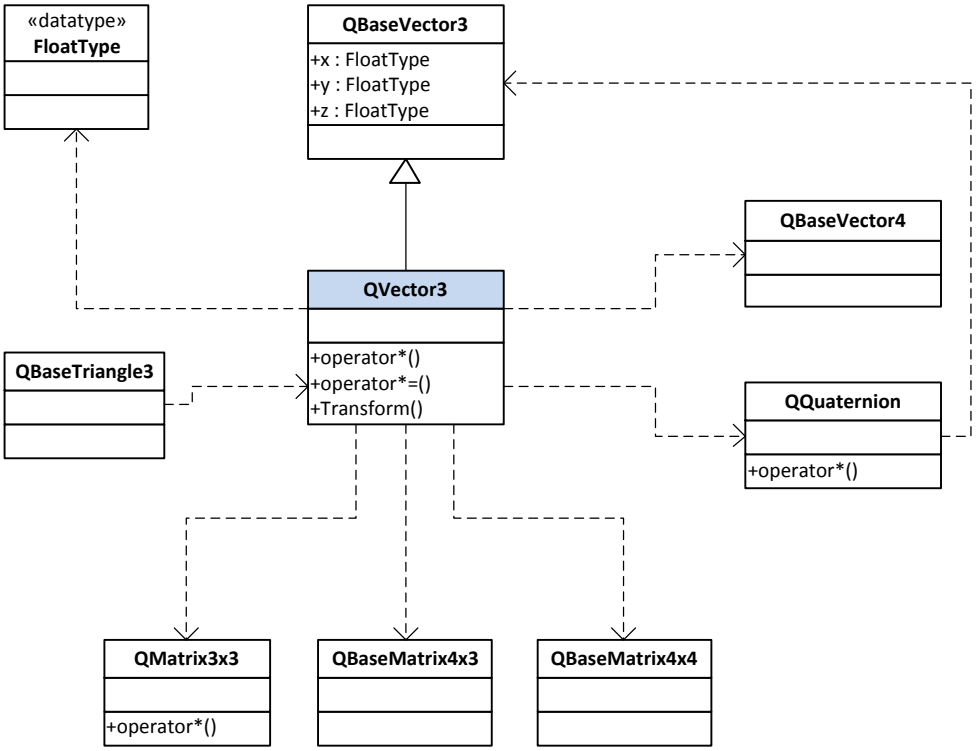
QVector3 Extension 1

Diagrams



Knowledge Requirements

- Math
- See: Introduction to 3D Game Programming with DirectX 9.0, Part I.
- See: *<Program Files Folder>\Microsoft DirectX SDK (June 2010)\Documentation\DirectX9\windows_graphics.chm*, from DirectX SDK. Search for D3DXVECTOR3 and D3DXVec3 in “Index” tab.
- See: *http://euclideanspace.com/maths/algebra/matrix/index.htm* .
- See: *http://euclideanspace.com/maths/algebra/realNormedAlgebra/quaternions/index.htm* .
- See: *http://euclideanspace.com/maths/geometry/elements/plane/index.htm* .

Functional Specifications

- Implement constructor that receives a QBaseVector4 type.
- Operator* must offer an overload that receives a QBaseMatrix3x3 (the vector is a 1x3 matrix). Internally, use QMatrix3x3 functionality.
- Operator*= must offer an overload that receives a QBaseMatrix3x3 (the vector is a 1x3 matrix). Inetrnally, use QMatrix3x3 functionality.
- Operator* must offer an overload that receives a QQuaternion. Internally, use QQuaternion functionality.
- Operator*= must offer an overload that receives a QQuaternion. Internally, use QQuaternion functionality.
- Transform must offer an overload that receives a QBaseMatrix4x3. Matrix transformations will be applied to the vector.
- Transform must offer an overload that receives a QBaseMatrix4x4. Matrix transformations will be applied to the vector.

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Design / Technical Requirements

- No virtual methods.
- Use by-reference parameters always.
- Try to avoid square roots.
- All methods should be inline.
- No exceptions.
- No error codes.
- No profiling.
- Respect diagram names.

Support People

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