## Object + ~ Object()

## Vector3

# m vector : float

+ Vector3(x : float, y : float, z : float)

+ Vector3()

+ operator [ ](index : int) : const float&

+ operator [](index:int):float&

+ operator +(v : Vector3 const&) : Vector3

+ operator -(v : Vector3 const&) : Vector3

+ operator -(): Vector3

+ operator \*(v : Vector3 const&) : float

+ operator \*(v : float const&) : Vector3

+ operator /(v : float const&) : Vector3

+ operator ^(v : Vector3 const&) : Vector3

+ norm2(): float

+ norm(): float

+ operator =(v : Vector3 const&) : Vector3&

+ operator =(s : float const&) : Vector3&

+ inv(): Vector3

+ size(): int

## Chain

- m transforms : std::vector< Object \* >

- find(q : Quaternion\*) : int

+ Chain()

+ add(object : Object\*) : void

+ compute(): Vector3

+ derivate(epsilon : float, quat : Quaternion\*) : Vector3

## Quaternion

# m\_s : float
# m\_v : Vector3
# m\_angle : float
# m axis : Vector3

+ Quaternion()

+ getAngle(): float

+ getAxis(): Vector3 const&

+ setAxisAngle(v : Vector3 const&, angle : float) : void

+ setAngle(angle : float) : void

+ s() : float& + v() : Vector3

+ operator +(q : Quaternion const&) : Quaternion

+ operator -(q : Quaternion const&) : Quaternion

+ operator \*(q : Quaternion const&) : Quaternion

+ operator \*(v : float const&) : Quaternion

+ operator /(v : float const&) : Quaternion

+ operator -() : Quaternion

+ inv(): Quaternion

+ norm2() : float

+ norm(): float

+ operator =(q : Quaternion const&) : Quaternion&

+ normalize() : Quaternion&

+ rotate(q : Quaternion const&) : Quaternion