# UML Diagram for quaterion Class

| quaterion | |
|---|---|
| **Private Members:** | |
| **Attributes:** | |
| - a: double<br>- b: double<br>- c: double<br>- d: double | |
| **Public Members:** | |
| **Constructors:** | |
| + quaterion(a: double = 1, b: double = 0, c: double = 0, d: double = 0)<br>+ quaterion(const quaterion& q) | |
| **Destructor:** | |
| + ~quaterion() | |
| **Methods:** | |
| + set_quaterion(a: double, b: double, c: double, d: double): void<br>+ get_quaterion(a: double&, b: double&, c: double&, d: double&): void<br>+ print_quanterion(): void<br>+ quaterion_rate(): double<br>+ conjugate(): quaterion<br>+ norm(): quaterion<br>+ inversion(): quaterion | |

**External Functions:**

| **add** |
|---|
| + add(x: quaterion, y: quaterion): quaterion |
| **sub** |
| + sub(x: quaterion, y: quaterion): quaterion |
| **mul** |
| + mul(x: quaterion, y: quaterion): quaterion |
| **div** |
| + div(x: quaterion, y: quaterion): quaterion |
| **dotproduct** |
| + dotproduct(x: quaterion, y: quaterion): double |
| **eucl_distance** |
| + eucl_distance(x: quaterion, y: quaterion): double |
| **Chebyshev_norm** |
| + Chebyshev_norm(x: quaterion, y: quaterion): double |