**Report On Quick Hull Algorithm**

**Complexity Analysis :**

**Best case.** Consider the best possible case, when each partition is almost balanced. Then we have

T(n) = 2 T(n/2) + O(n).

This is a familiar recurrence relation, whose solution is

T(n) = O(n log(n)).

This would occur with randomly distributed points.

**Worst case.** The worst case occurs when each partition is an extremely unbalanced. In that case the recurrence relation is

T(n) = T(n-1) + O(n)

= T(n-1) + cn

Repeated expansion shows this is O(n^2). Therefore, in the worst case the QuickHull is quadratic.