# Theory analysis of the algorithms

minDistance:

basic operation: ***if (i!=j) and |A[i]-A[j]| < dmin***

problem size: ***n***

This operation is the only comparison in the algorithm so it

minDistance2:

basic operation: ***if (temp < dmin)***

problem size : ***n***

This algorithm does not compare the same elements of the array, as the first loop starts with the *first* **(i)** element and stops when it reaches the second last element (n-2). On the contrary, the inner loop starts with the *second* **(i+1)** element and stops when is reaches the last element. So, each element will only be compared to all the elements that comes after it in the array. This reduces the numbers of operations performed, which is why minDistance2 is *faster* than minDistance.