During this excercise we concentrate on how recursion works, how to solve a problem recursively. We also continue pratising algorithmic thinking.

Study the following algorithm, which finds from an array two items that are closest to each other, and returns their distance. Think, how the algorithm works and how its performance could be improved. You can replace the whole algorithm, if you want.

MinD(A)  
   dmin := infinity  
   for i := 1 to A.length do  
      for j := 1 to A.length do  
          if i != j and |A[i]-A[j]| < dmin  
             dmin := |A[i]-A[j]|  
   return dmin

The complexity now is n2

We can first sort and then compare adjacent values. The complexity will be: n log n + n