Assignment 3, question 1

Write a function `swap_next` that takes a list and swaps two entries that are next to each other. The inputs to the function should be `unswapped`, a list or `numpy` array, and `index`, an integer. The function should swap the two entries `unswapped[index]` and `unswapped[index+1]`. The function should return the modified list.

Assignment 3, question 2

Write a function `bubble_sort` that implements the bubble sort algorithm. The input to the function should be `unsorted`, a list or `numpy` array. The function should return the modified list, sorted in non-decreasing order.

Bubble sort is explained in detail on, for example, Wikipedia. In bubble sort the list is split into an unsorted part (initially the whole list) and a sorted part (initially empty). However, the sorted part is at the *end*, or *right* of the list. In each iteration the algorithm successively compares, moving left to right, pairs of numbers in the unsorted list (so, first entries `0, 1`, then entries `1, 2`, and so on). If the first in the pair is larger the entries are swapped. By the end of each iteration the largest entry in the unsorted list has moved to its end. Between iterations the separator between unsorted and sorted lists moves one place left, and the sorted list always contains the largest elements in order.

Your function may use the `swap_next` function.

Your function must be fully documented.