

## Tutorial 3 - Sorting

*This tutorial provides practice using arrays by developing the bubble sort algorithm.*

Exercise: Write code that exchanges the values of the variables `a` and `b`.

*Hint: Use a temporary variable called `temp`.*

- starting with the whole array and ending with the subset of the array consisting of the last two elements, do the following:

- find the smallest item in the array
- exchange it with the first element

Exercise: Write code that sorts the values in an array `x` into increasing order using the bubble sort.

*Hint: Use a variable called `start` to keep track of the subset of the array the remains to be sorted.*

Exercise: Write code that exchanges the `i`'th and `j`'th elements of an array `x`.

Exercise: Write code that searches an integer array `x`'th of `n` values for the smallest value. Your code should keep track of the index of the smallest value as well as its value.

*Hint: Use a variable called `min` to keep track of the minimum value and another called `imin` to keep track of its location within the array.*

Exercise: How would you modify your code so that it sorts the array in increasing order?

Exercise: How would you modify your code so that it only searches the array from the `j`'th value to the end of the array?

The bubble sort algorithm for sorting an array into increasing order is as follows: