Insertion Sort (Time Complexity)

best, average and worst case time complexity of the insertion sort algorithm (Reading time: under 1 minute)

TIME			SPACE
Best	**Average**	**Worst**	**Worst**
O(n)	$O(n^2)$	$O(n^2)$	O(1)

Best:

The array is already sorted.

Average and worst:

For every item in the array, we have to loop over the entire array.

Worst space:

We have three constant variables, `temp`, `j` and `i`. One could argue that you would have to store the array in memory, which gives **O(n)**.

In the next lesson, I will talk about merge sort.