

INSERTION SORT ADVANTAGES

- ▶ Simple implementation: around 3-5 lines of code.
- ▶ Efficient on smaller data sets.
- ▶ Faster time complexity than other simple methods.
- ▶ It is stable and in place.
- ▶ It is online: meaning it can sort a list as it receives it.
- ▶ Adaptive, (ie) efficient for substantially sorted datasets: the time complexity $O(nk)$ when each element in the input is no more than k places away from its sorted position.

INSERTION SORT ALGORITHM

- ▶ `// Sort an arr[] of size n`
- ▶ `insertionSort(arr, n)`
- ▶ Loop from $i = 1$ to $n-1$.
- ▶a) Pick element `arr[i]` and insert it into sorted sequence `arr[0...i-1]`