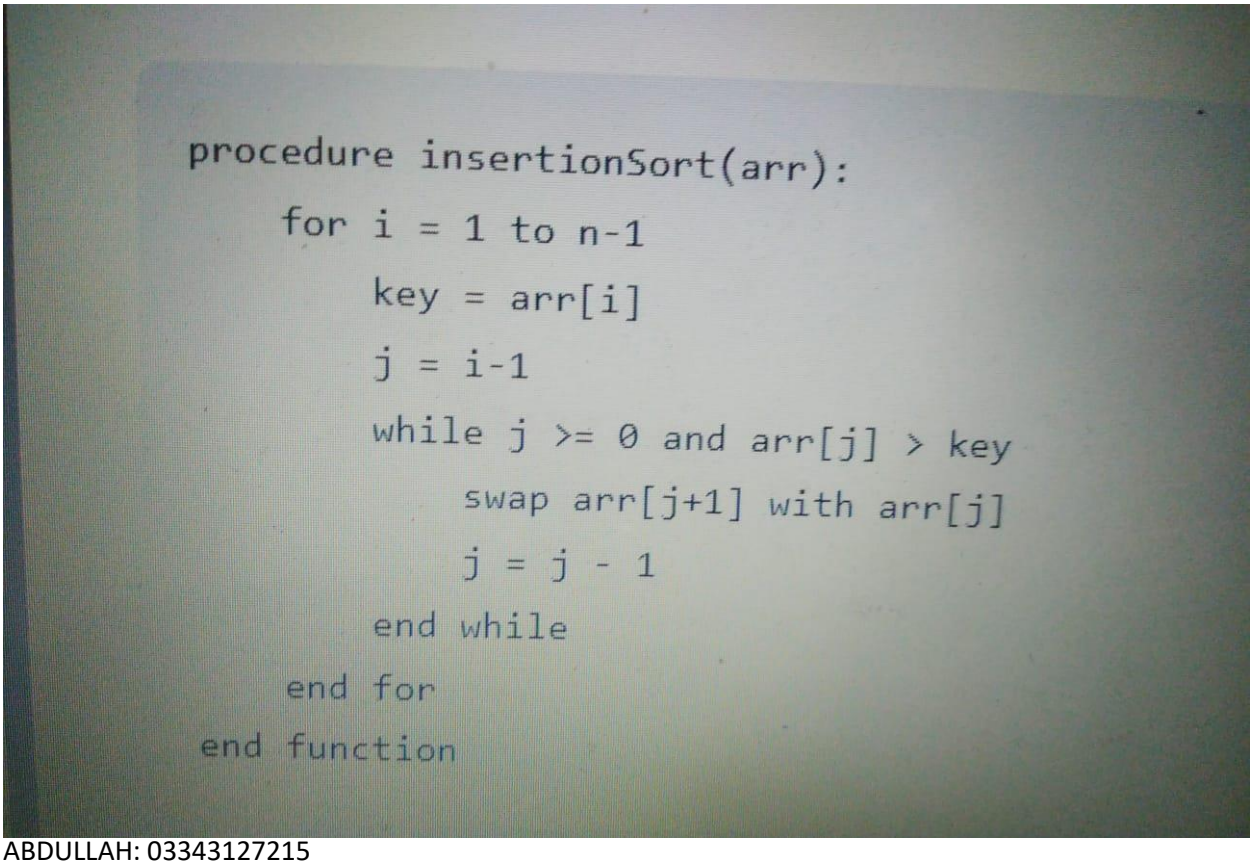
Insertion sort is a sorting algorithm that places an unsorted element at its suitable place in each iteration.

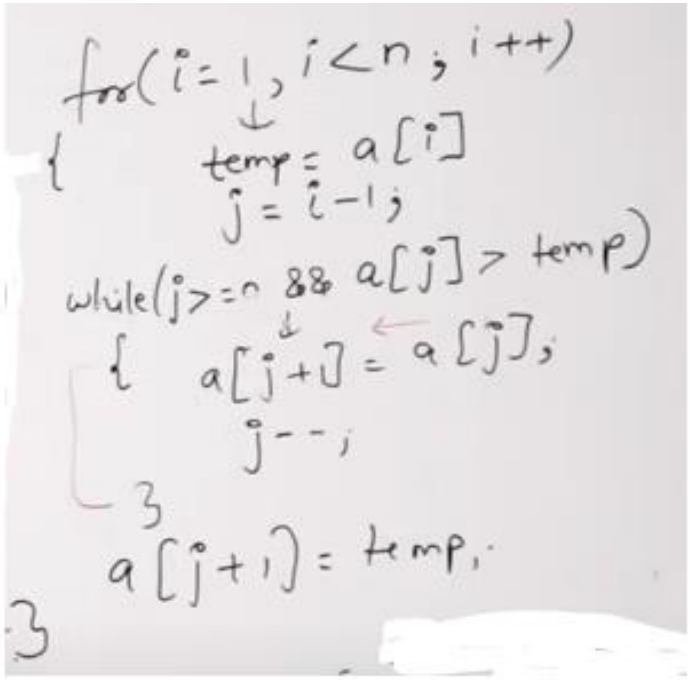
Insertion sort works similarly as we sort cards in our hand in a card game.

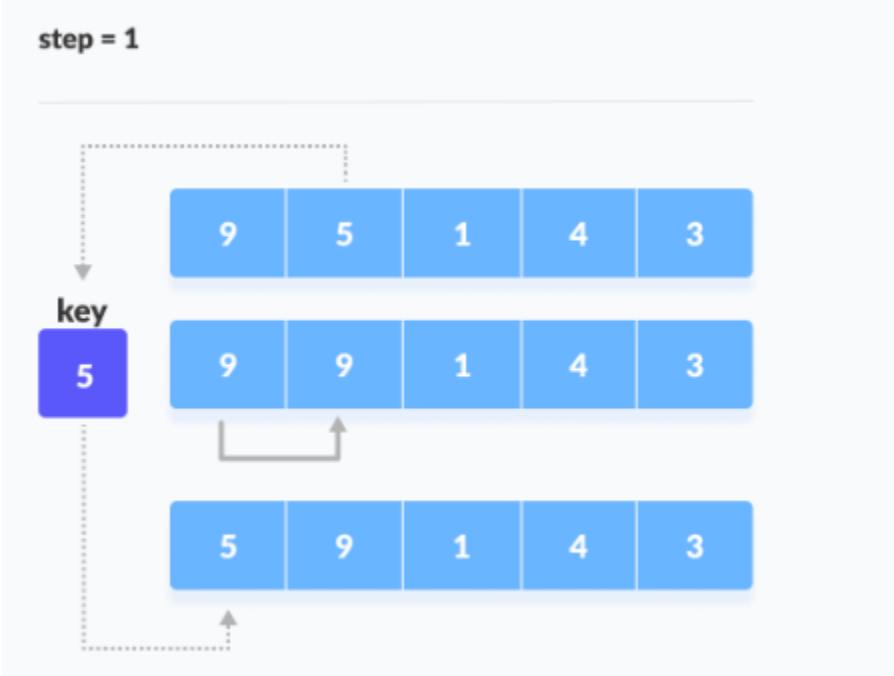
We assume that the first card is already sorted then, we select an unsorted card. If the unsorted card is greater than the card in hand, it is placed on the right otherwise, to the left. In the same way, other unsorted cards are taken and put in their right place.

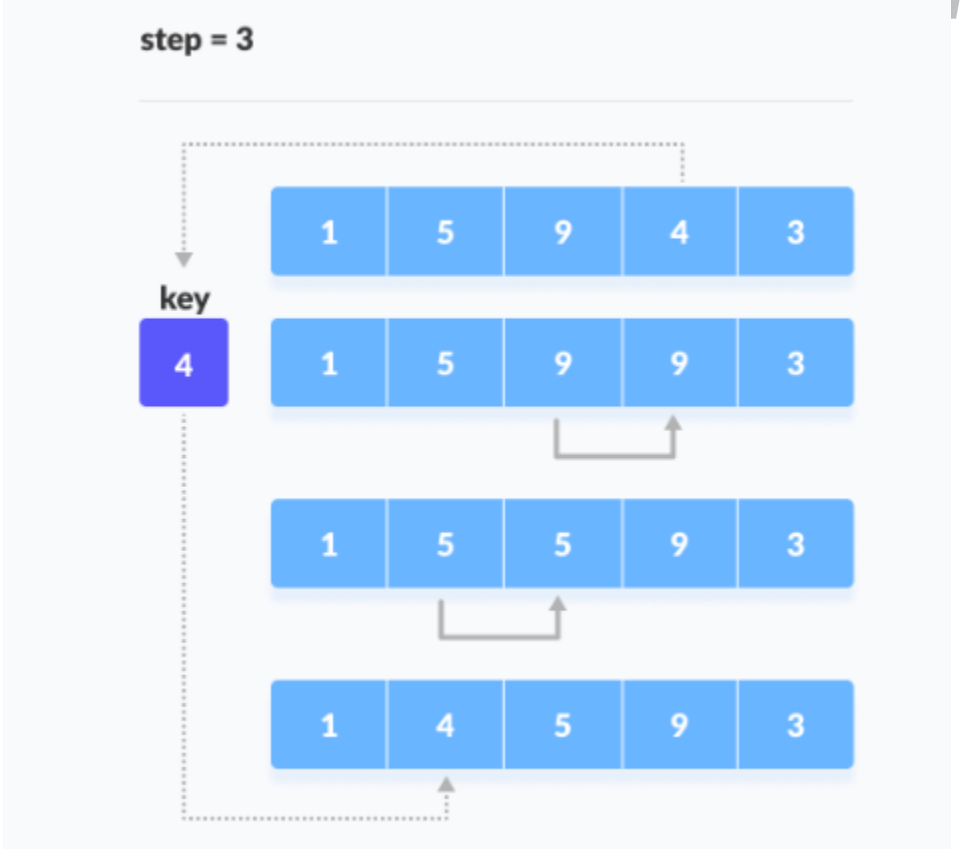
Insertion Sort Complexity

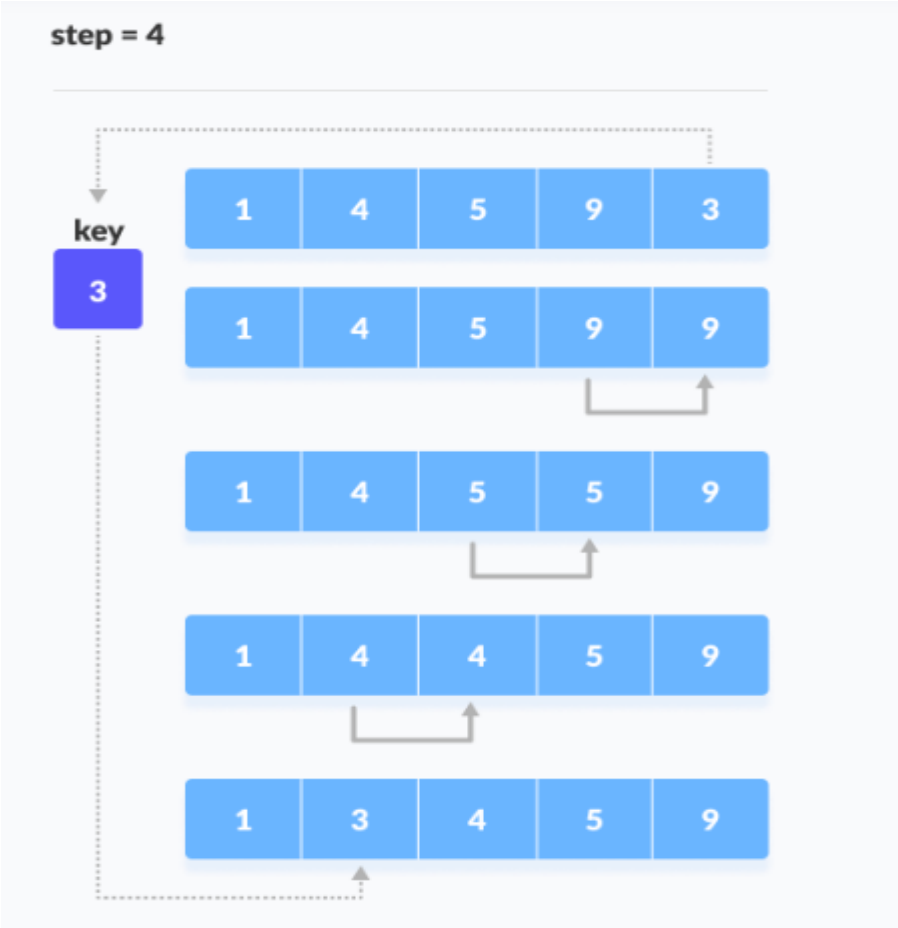
Time Complexity	
Best	O(n)
Worst	$O(n^2)$
Average	$O(n^2)$
Space Complexity	O(1)
Stability	Yes











Insertion Sort

Advantages	Disadvantages
The main advantage of the insertion sort is its simplicity.	The disadvantage of the insertion sort is that it does not perform as well as other, better sorting algorithms
It also exhibits a good performance when dealing with a small list.	With n-squared steps required for every n element to be sorted, the insertion sort does not deal well with a huge list.
The insertion sort is an in-place sorting algorithm so the space requirement is minimal.	The insertion sort is particularly useful only when sorting a list of few items.