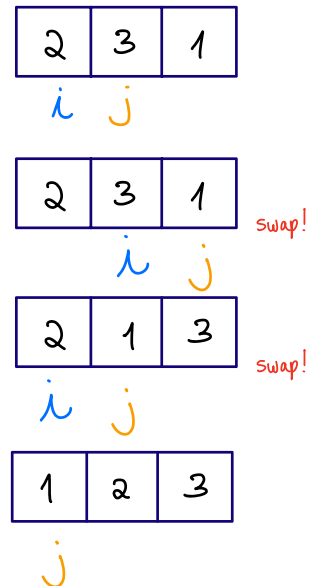


Insertion Sort

This algorithm is one of the simplest algorithms with a simple implementation. Basically, Insertion sort is efficient for small data values

```
def insertionSort(array):  
    for j in range(len(array) - 1):  
        j += 1  
        i = j - 1  
        while(i >= 0):  
            if(array[j] < array[i]):  
                temp = array[i]  
                array[i] = array[j]  
                array[j] = temp  
                i -= 1  
                j -= 1  
            else:  
                break  
    return array
```



We'll start checking the element (*i*) and define an auxiliary pointer (*i*) that is gonna be right behind the actual value we are comparing (*j*). If the value behind *j* is minor we swap the elements and the pointers.

Time complexity: $O(n^2)$