SORTING

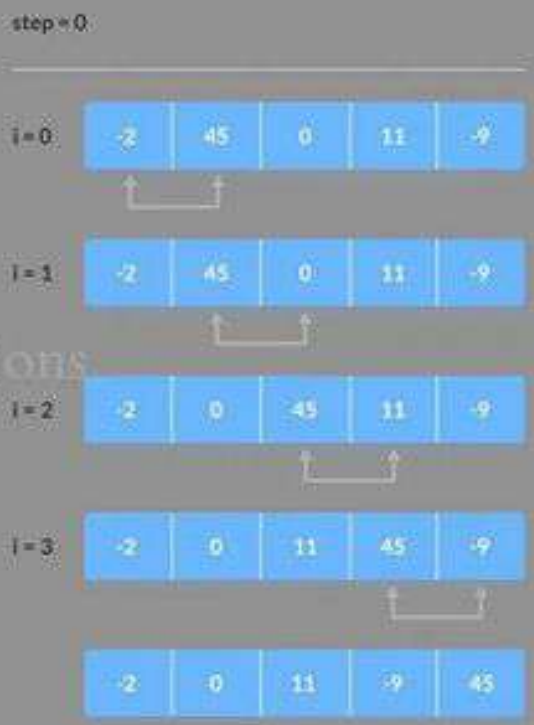
Sorting is the processing of arranging the data in ascending and descending order.
There are several types of sorting in data structures:

- Bubble sort
- Insertion sort
- Selection sort
- Merge sort
- Quick sort
- Heap sort

BUBBLE SORT

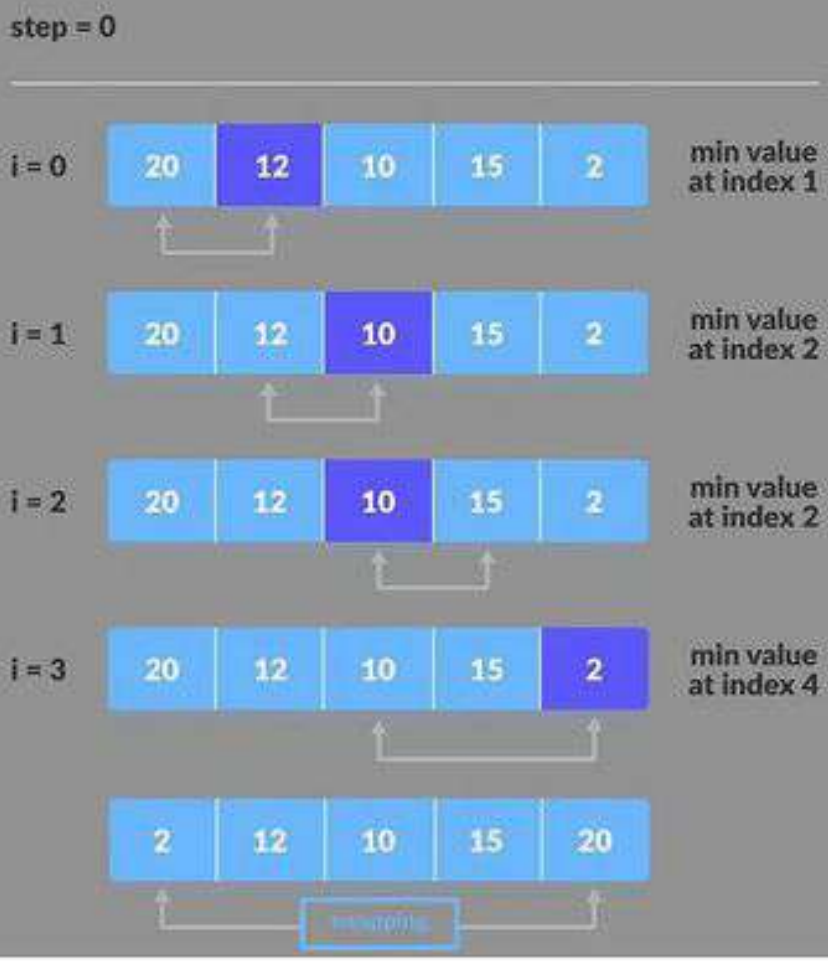
Bubble Sort is a simple algorithm which is used to sort a given set of n elements provided in form of an array with n number of elements.

Bubble Sort compares all the element one by one and sort them based on their values.



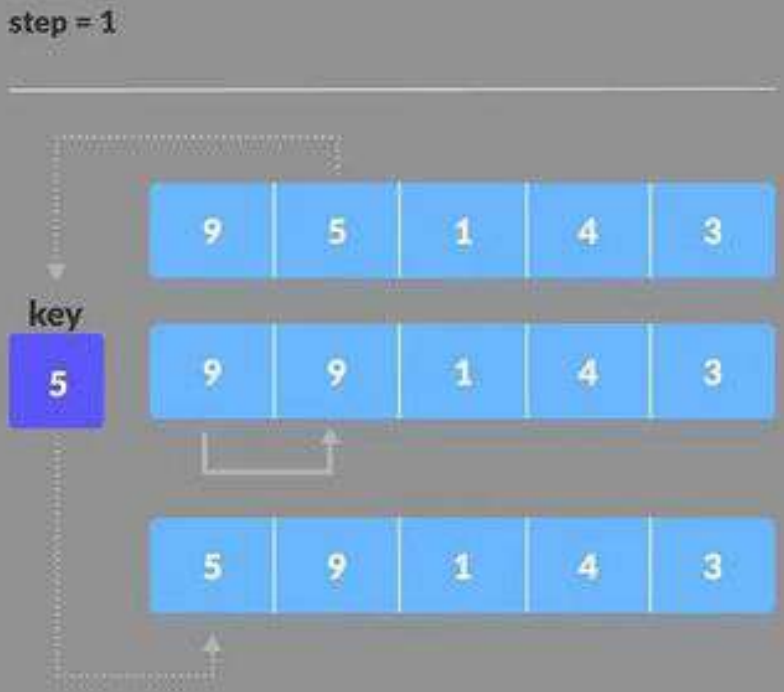
SELECTION SORT

It is called selection sort because it repeatedly selects the next-smallest element and swaps it into the right place.



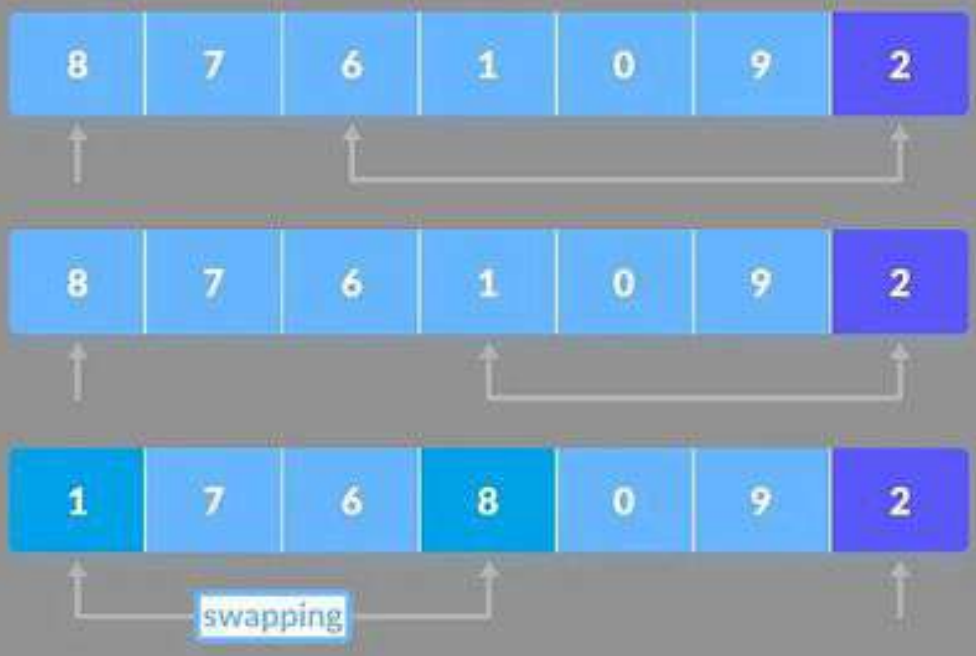
INSERTION SORT

Insertion sort is a sorting algorithm in which the elements are transferred one at a time to the right position.



QUICK SORT

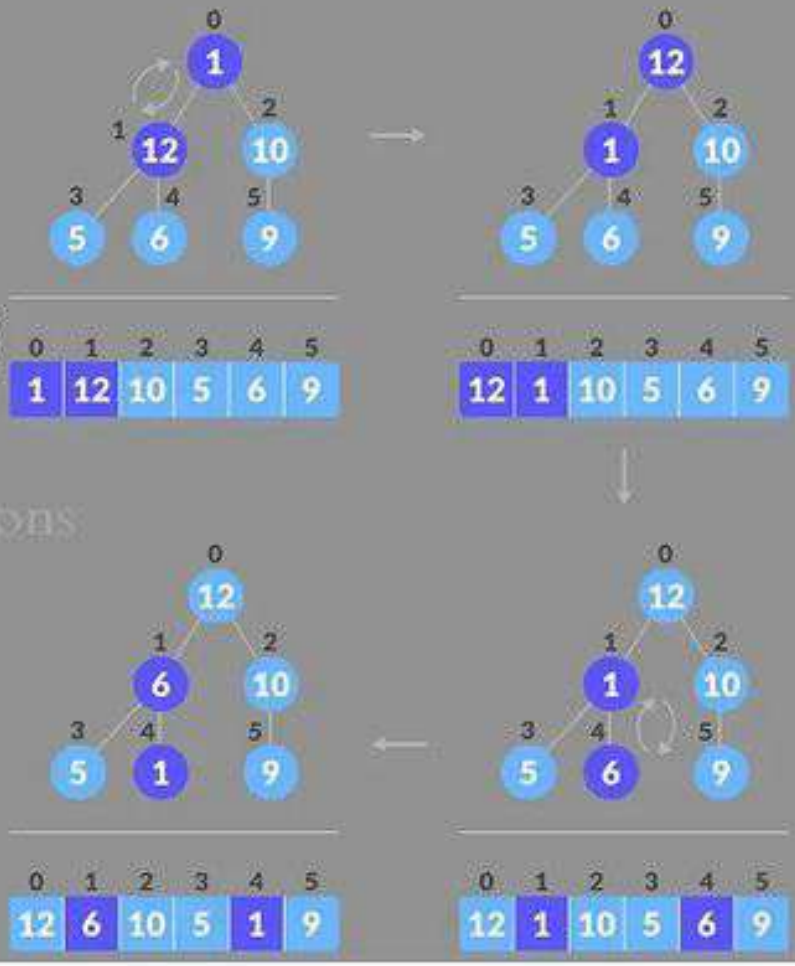
Quicksort partitions an array and then calls itself recursively twice to sort the two resulting subarrays. It follows divide-and-conquer rule. aka partition-exchange sort.



HEAP SORT

The concept of heap sort is to eliminate the elements one by one from the heap part of the list, and then insert them into the sorted part of the list.

i = 0 → heapify(arr,6,0)



MERGE SORT

It follows the divide-and-conquer rule. Merge sort continuously cuts down a list into multiple sublists until each has only one item, then merges those sublists into a sorted list.