Selection Sort

It repeatedly selects the largest(or smallest) element from the unsorted portion of the dataset and swaps it with the last(or first) element of the unsorted part.

It is not a stable algorithm. It performs well on small datasets.

Time complexity

In any case : $O(N^2)$

```java
void selectionSort(int[] array)
    {
        for(int i = 0;i<= array.length – 1;i++)
            {
                int end = array.length – 1 – i;
                int maxIndex = getMaxIndex(array, 0, end);
                swap(array, maxIndex, end);
            }
    }
int getMaxIndex(int[] array, int start, int end)
    {
        int maxIndex = start;
        for(int i = start;i<= end;i++)
            {
                if(array[i]>array[maxIndex])
                    {
                        maxIndex = i;
                    }
            }
        return maxIndex;
    }
void swap(int[] array, int index1, int index2)
    {
        int temp = array[index1];
        array[index1] = array[index2];
        array[index2] = temp;
    }
```