Selection Sort

The selection sort algorithm sorts an array by repeatly finding the minimum element (considering ascending order) from unsorted array part putting it at the beginning. The algorithm maintain two subarrays in a given array.

* The subarray is already sorted

* Remaining subarray which is unsorted

In every iteration of selection sort the minimum element (considering ascending order) from the unsorted subarray is packed and moved to sorted sub array.

arr = [65, 25, 12, 22, 11]

first move → [11, 25, 12, 22, 65]

→ [11, 12, 25, 22, 65]

→ [11, 12, 22, 25, 65]

Implementation:

```
def selection-sort(a):
    for i in range(len(a)):
        min-index = i
        for j in range(i+1, len(a)):
            if a[min-index] > a[j]:
                min-index = j
            a[i], a[min-index] = a[min-index], a[i]
```

Input:

```
a = [64, 25, 12, 22, 11]

selection-sort(a)

for i in a:
    print(i, end = " ")
```

$O(n^2)$ as there are two nested loops

Output:

11 12 22 25 64