Insertion Sort

- partitions the array into sorter and unsorted partitions

- we start from the beginning of the array

- length of the sorted partition starts from 1 (when it contains 1 element it's sorted)

- sorter partition length grows after inserting subsequent elements from unsorted partition

- when we are inserting elements from unsorted to sorter partition we are traverse sorter partition from right to left to find place for the element

-time complexity is O(n^2)

- it is stable algorithm

nextElement – next element that we are inserting to sorted partition

⬛ - sorted partition

⬛ - shifting

⬛ -inserting position

shft – shift to right

ins – insert

eoa – end of array

Step	20	35	-15	7	55	1	-22	Next element	Description	
0	20	35	-15	7	55	1	-22	35	35 >= 25	,ins
1	20	35	-15	7	55	1	-22	-15	-15 < 35	,shft
2	20	35	35	7	55	1	-22	-15	-15 < 35	,shft
3	20	20	35	7	55	1	-22	-15	eoa	,ins
4	-15	20	35	7	55	1	-22	7	7 < 35	,shft
5	-15	20	35	35	55	1	-22	7	7 < 20	,shft
6	-15	20	20	35	55	1	-22	7	7 >= -15	,ins
7	-15	7	20	35	55	1	-22	55	55 >= 35	,ins
8	-15	7	20	35	55	1	-22	1	1 < 55	,shft
9	-15	7	20	35	55	55	-22	1	1 < 35	,shft
10	-15	7	20	35	35	55	-22	1	1 < 20	,shft
11	-15	7	20	20	35	55	-22	1	1 < 7	,shft
12	-15	7	7	20	35	55	-22	1	1 >= -15	,ins
13	-15	1	7	20	35	55	-22	-22	-22 < 55	,shft
14	-15	1	7	20	35	55	55	-22	-22 < 35	,shft
15	-15	1	7	20	35	35	55	-22	-22 < 20	,shft
16	-15	1	7	20	20	35	55	-22	-22 < 7	,shft
17	-15	1	7	7	20	35	55	-22	-22 < 1	,shft
18	-15	1	1	7	20	35	55	-22	-22 < -15	,shft
19	-15	-15	1	7	20	35	55	-22	-22 < -15	,ins
20	-15	-15	1	7	20	35	55	-22	Eoa	,ins
21	-22	-15	1	7	20	35	55	sorted		