STABILITY IN SORTING

CONCEPT: 2 object with equal keys appear in same order in sorted output as they appear in input.

IMPORTANCE: Stability is seen in Multi level sorting. Suppose you have to sort data on 2 columns A and B.

NAME	SECT
Ander	3
Fox	3
Furia	1
Chan	3
Kan	3
Ben	4

→ SELECTION SORT (NAME) →

NAME	SECT
Ander	3
Ben	4
Chan	3
Fox	3
Furia	1
Kan	3

→ SELECTION SORT (SECT) → UNSTABLE

Alphabetical order is distorted

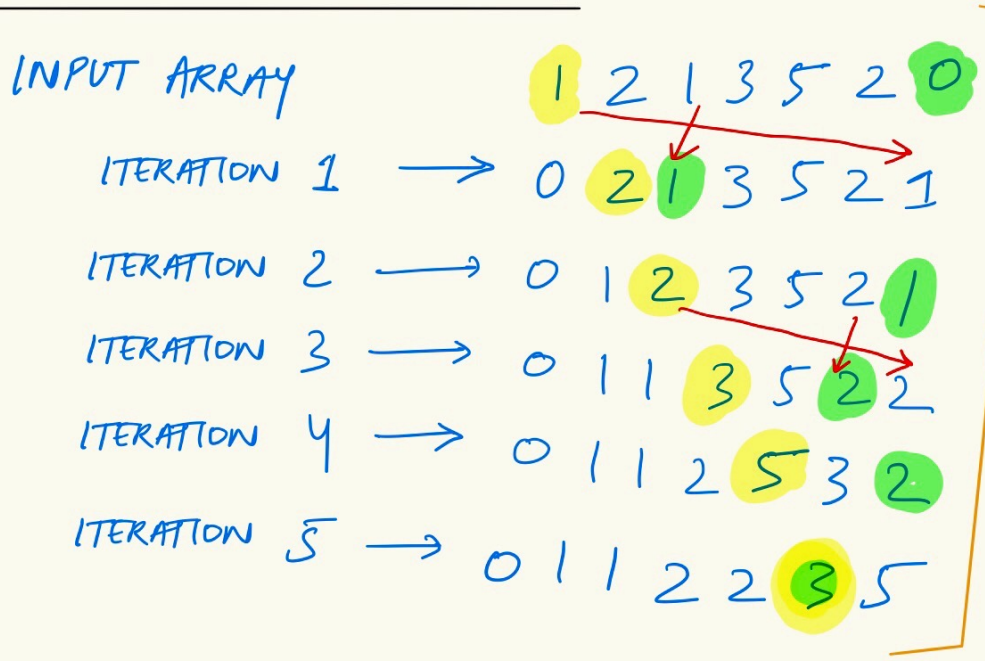
NAME	SECT
Furia	1
Chan	3
Fox	3
Ander	3
Kan	3
Ben	4

* On the second sort, the order of input changes for elements with equal keys.

Therefore initial sorting is no longer valid.

STABILITY preserves previous sort for objects with equal keys in second sort.

REASON OF INSTABILITY



Since equal keys may change order in output after sort, SELECTION SORT is not STABLE.

★ STABLE SORTING ALGORITHMS

Merge Sort
Insertion Sort
Bubble Sort
Count Sort.

★ UNSTABLE SORTING ALGORITHMS

Quicksort
Heapsort
Selection Sort