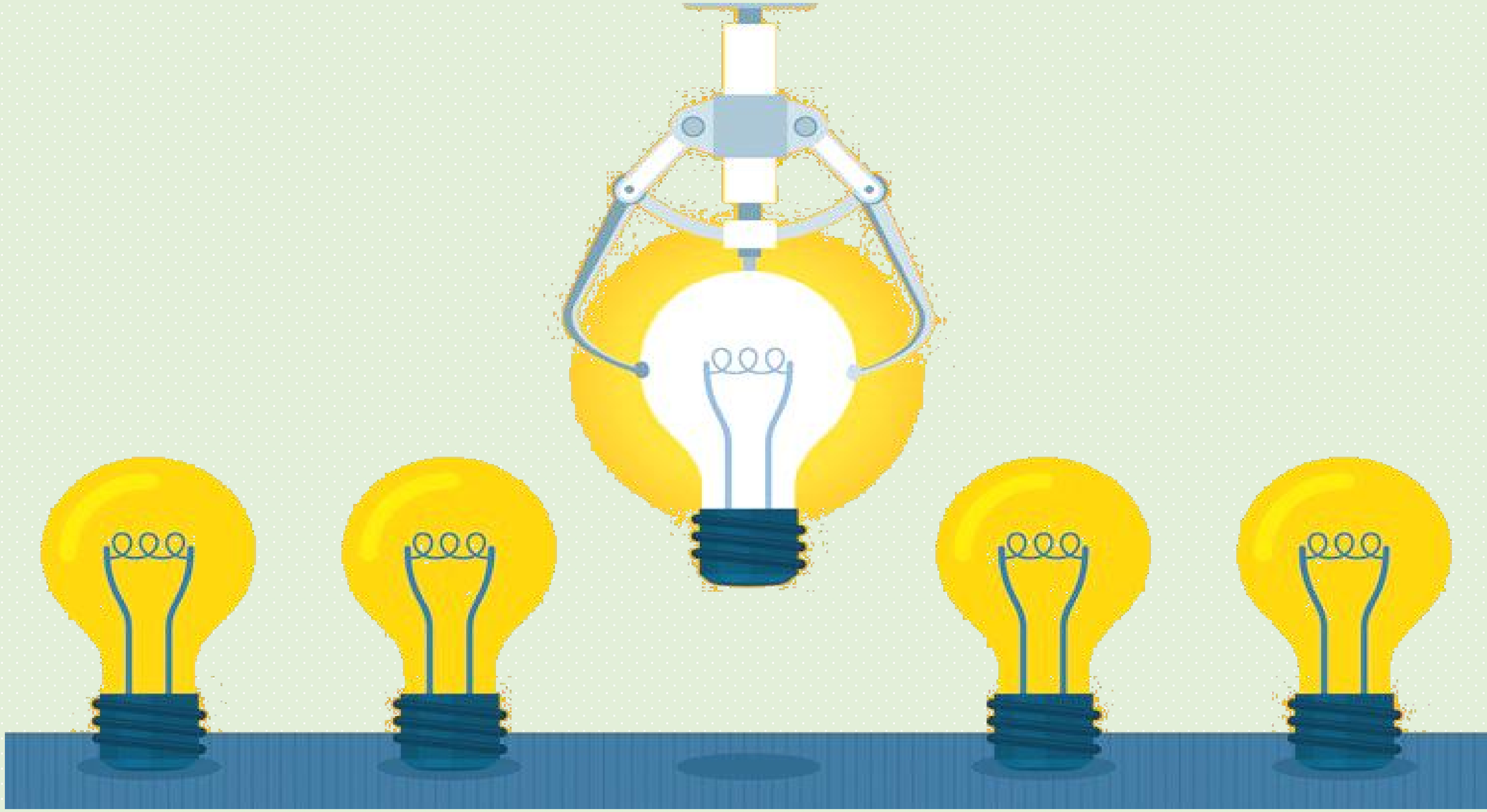
Data Structure & Algorithm

Class X
lab 10

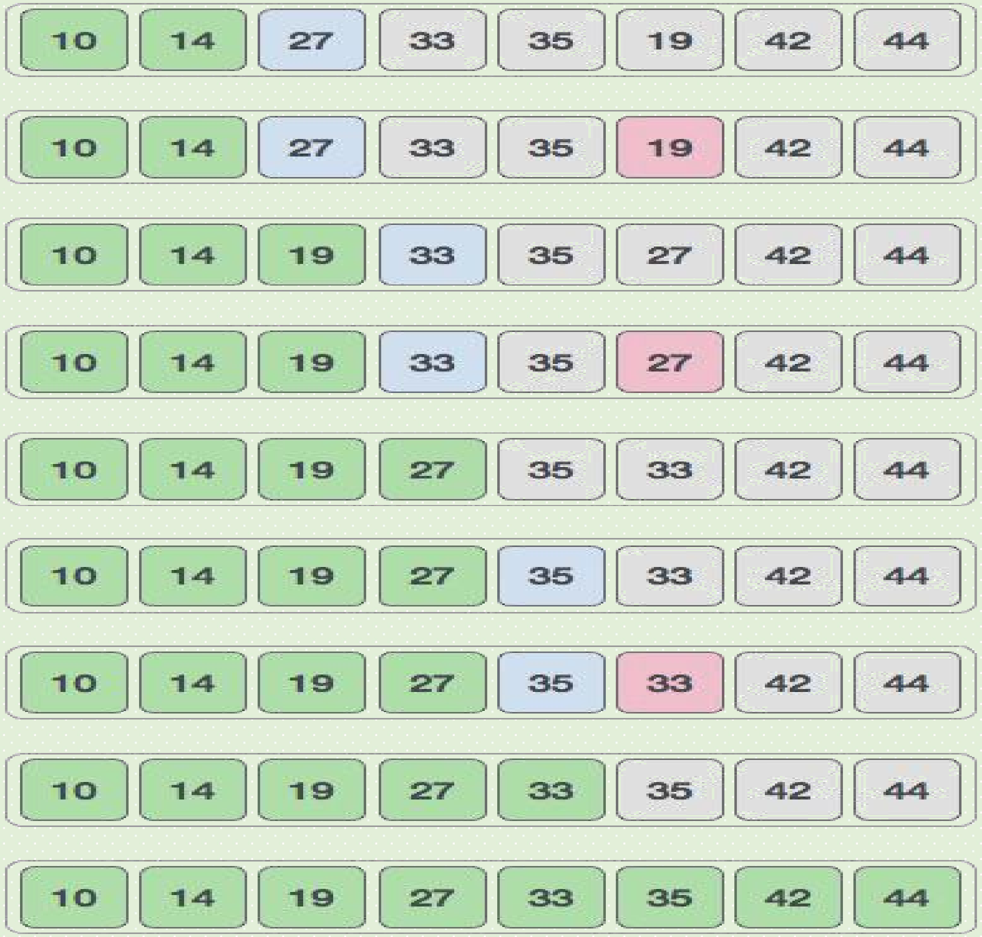
Selection Sort

an in-place comparison-based algorithm



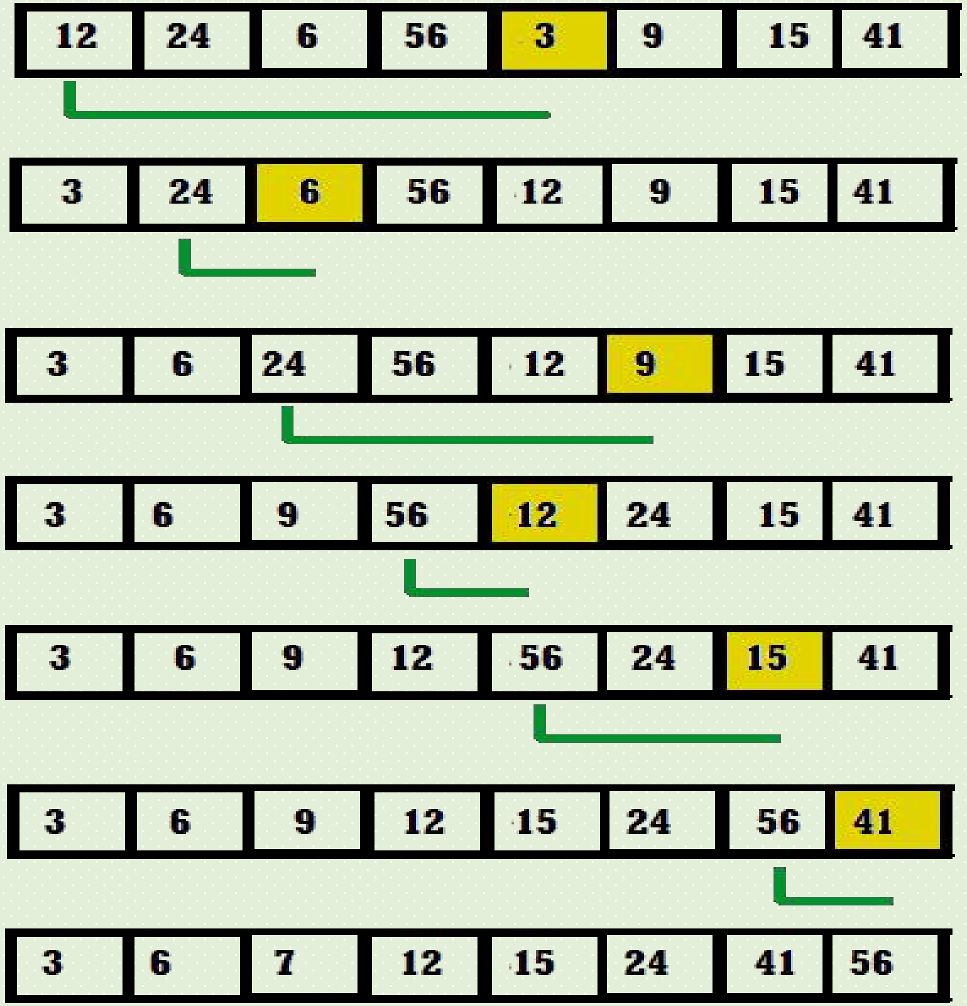
How it Works

entire sorting process



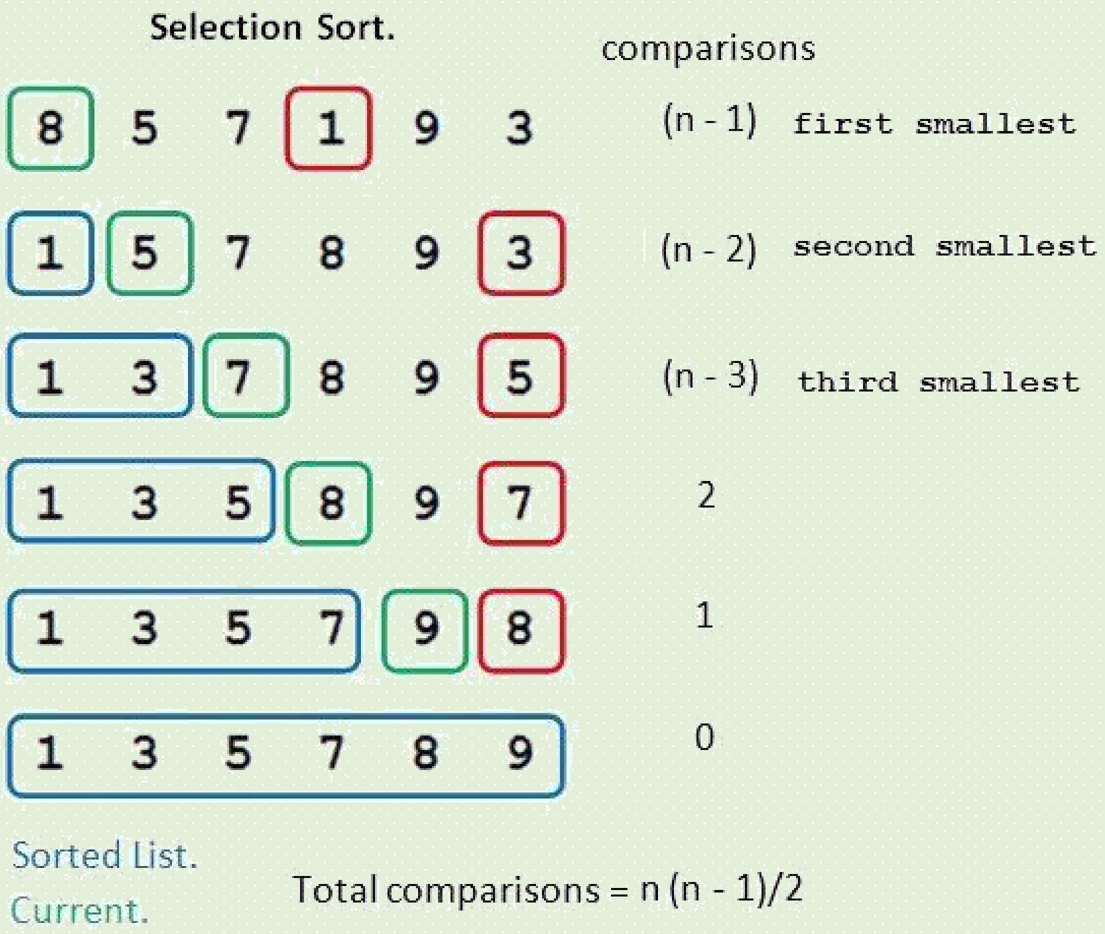
10	14	27	33	35	19	42	44
10	14	27	33	35	19	42	44
10	14	19	33	35	27	42	44
10	14	19	33	35	27	42	44
10	14	19	27	35	33	42	44
10	14	19	27	35	33	42	44
10	14	19	27	35	33	42	44
10	14	19	27	33	35	42	44
10	14	19	27	33	35	42	44

Example 1



12	24	6	56	3	9	15	41
3	24	6	56	12	9	15	41
3	6	24	56	12	9	15	41
3	6	9	56	12	24	15	41
3	6	9	12	56	24	15	41
3	6	9	12	15	24	56	41
3	6	7	12	15	24	41	56

Example 2



Selection Sort.

	comparisons	
8 5 7 1 9 3	(n - 1)	first smallest
1 5 7 8 9 3	(n - 2)	second smallest
1 3 7 8 9 5	(n - 3)	third smallest
1 3 5 8 9 7	2	
1 3 5 7 9 8	1	
1 3 5 7 8 9	0	

Sorted List.

Current.

Total comparisons = n (n - 1)/2

Algorithm

Step 1 – Set MIN to location 0
Step 2 – Search the minimum element in the list
Step 3 – Swap with value at location MIN
Step 4 – Increment MIN to point to next element
Step 5 – Repeat until list is sorted

SO YOU WANNA BE A

BETTER PROGRAMMER

eat (); sleep (); code (); repeat ();

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