SELECTION SORT

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IDEA:

- Find the smallest element in the array
- Exchange it with the element in the first position
- Find the second smallest element and exchange it with the element in the second position
- Continue until the array is sorted

EXAMPLE

- We break our array into two parts. First one is sorted array and second is unsorted array
- Initially sorted list/array is empty and unsorted list is our entire input array/list.

Input Array/List

8	4	6	9	2	3	1

After 1st Pass

1	4	6	9	2	3	8

After 2nd Pass

1	2	6	9	4	3	8

After 3rd Pass

1	2	3	9	4	6	8

After 4th Pass

1	2	3	4	9	6	8

After 5th Pass

1	2	3	4	6	9	8

After 6th Pass

1	2	3	4	6	8	9

Note that for N=7 elements which is the length of array only N-1 = 6 passes are required

SELECTION SORT – PSEUDO CODE

Alg.: SELECTION-SORT*(A)*

```
n = length[A]
for j = 1 to n - 1
  smallest = j
      for i = j + 1 to n
          if A[i] < A[smallest]
              smallest = i
      exchange A[j] ↔ A[smallest]
```

8	4	6	9	2	3	1

YOUR TASK

- Implement selection sort for sorting the array/list of Strings in ascending order of the first alphabets of each string. [Hint : In Python " > " and " < " operators work equally for strings as they work for numbers].