Insertion Sort

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Insertion sort is inserting the first element of the unsorted part of the array into sorted part of the array till the array is sorted.

Insertion Sort

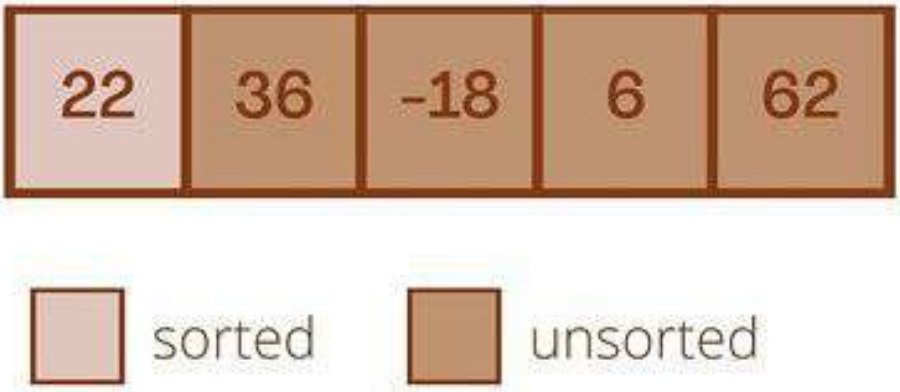
Algorithm

- Logically divide array into two parts - sorted and unsorted.
- Assign the first element of the unsorted part to a variable value.
- Compare the value with the elements in the sorted part(from the last element) till the value is smaller than the element of the unsorted part(or we reach index 0). And then insert the value in its correct position.
- Repeat till the array is sorted.

Insertion Sort

Let's Insertion sort the array

Insertion Sort



value = 36

36 > 22

So, 36 is in its correct position
insert 36, in its current position

value = -18

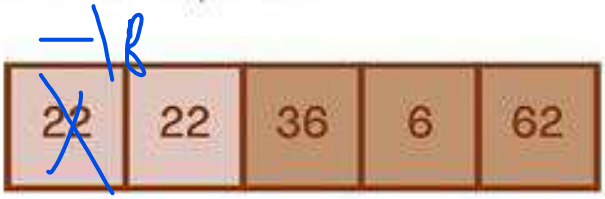
-18 < 36

so we must insert -18 before 36

to make room for -18, we will shift 36 to its position + 1.

-18 < 22

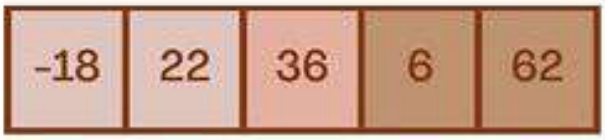
Shift 22 to position + 1.



As there are no more elements in sorted part of the array to compare with

assign value -18 to index 0

value = 6

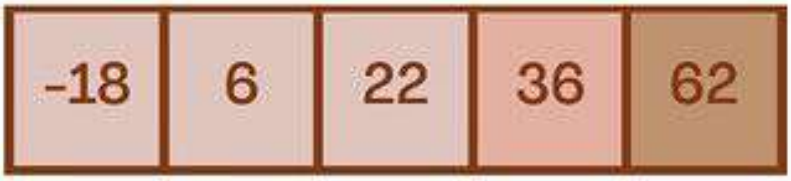


6 < 36
Shift 36 to right

6 < 22,
shift 22 to right

6 > -18
insert 6 at position (of -18) +1

value = 62



62 > 36

insert 62 at its current position