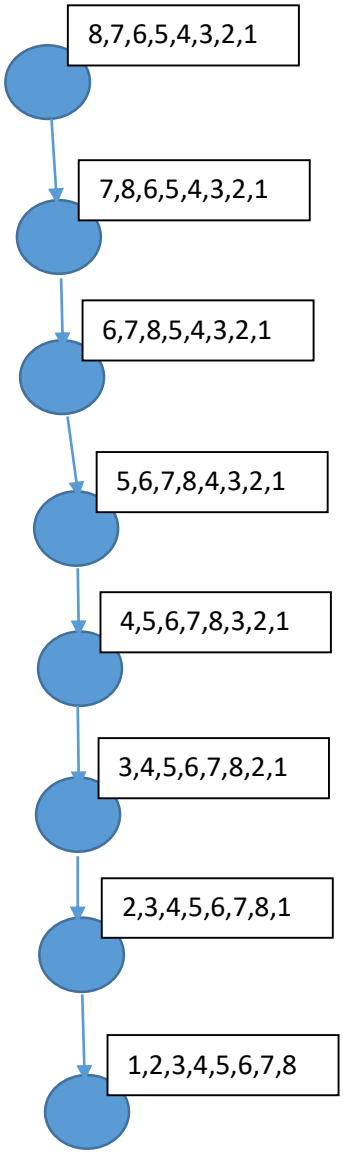


Worst case of insertion sort for n=8.(descending order) Input:87654321.

No. of processes to 8 in place=1+1

No. of processes to 7 in place=2+2

No. of processes to 6 in place=3+3

No. of processes to 5 in place=4+4

No. of processes to 4 in place=5+5

No. of processes to 3 in place=6+6

No. of processes to 2 in place=7+7

No. of processes to 1 in place=8+8

Total =2*8+2*7+...+2*1

=2(1+2+3+....+8)

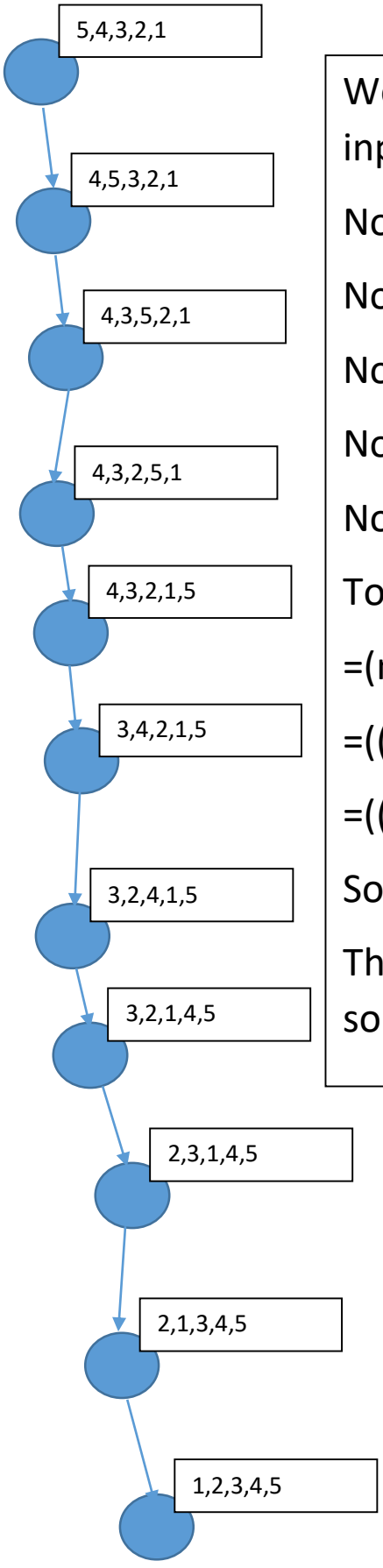
=2(1+2+....+n)

=2n(n+1)/2

=n(n+1)

Here, the highest order is n^2.

Therefore, the complexity of the bubble sort for worst case is O(n^2).



Worst Case scenario of bubble sort for input : 5,4,3,2,1. i.e.:n=5

No. of comparisons to put 5 in place:4

No. of comparisons to put 4 in place:3

No. of comparisons to put 3 in place:2

No. of comparisons to put 2 in place:1

No. of comparisons to put 1 in place:0

Total no. of comparisons=4+3+2+1+0

=(n-1)+(n-2)+...+1

=((n-1)((n-1)-1))/2

=((n-1)(n-2))/2

So the highest order is n^2.

Therefore, the complexity of the bubble sort for worst case is O(n^2).