Insertion Sort

In insertion sort, every iteration moves an element from unsorted portion to sorted portion until all the elements are sorted in the list. An analogy of insertion sort is the sorting of a deck of cards with our hands. We select one card from the unsorted deck and put it in the right order in our hands, effectively sorting the whole deck.

**Steps**

1. Assume that first element in the list is in its sorted portion of the list and remaining all elements are in unsorted portion.
2. Take the first element from the unsorted list and insert that element into the sorted list in order specified (ascending or descending).
3. Repeat the above process until all the elements from the unsorted list are moved into the sorted list.

Text

Description automatically generated with medium confidence

1. #include<stdio.h>
2. **int** main()
3. {
4. **int** data[100],n,temp,i,j;
5. printf("Enter number of elements to be sorted:");
6. scanf("%d",&n);
7. printf("Enter elements: ");
8. **for**(i = 0; i < n; i++)
9. scanf("%d",&data[i]);
10. **for**(i = 1; i < n; i++)
11. {
12. temp = data[i];
13. j = i - 1;
14. **while**(temp < data[j] && j>=0)
15. {
16. data[j + 1] = data[j];
17. j = j - 1;
18. }
19. data[j + 1]=temp;
20. }
21. printf("Sorted array: ");
22. **for**(i = 0; i < n; i++)
23. printf("%d ",data[i]);
24. **return** 0;
25. }
26. </stdio.h>