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/*
Title- Insertion Sort
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Batch- TechnOrbit(PPA-8)
*/

#include<stdio.h>
#include<stdlib.h>

void display_list(int* arr, int n)
{
    int i;
    printf("[");
    for(i=0;i<n;i++)
    {
        printf("%d , ",*(arr+i));
    }
    printf("]\n");
}

void Insertion_Sort(int* arr , int n)
{
    int temp, hole, i;
    for(i=1;i<n;i++)
    {
        temp = *(arr+i);
        hole = i;

printf("*****\n");
        printf("Iteration No. %d\n",i);
        printf("Sorting element is %d\n",temp);
        while(hole > 0 && *(arr+(hole-1)) > temp )
        {
            *(arr+hole) = *(arr+(hole-1));
            hole--;
        }
        *(arr+hole) = temp;
        printf("Sorted elemet Changed Position : ");
        display_list(arr , n);
    }

printf("*****\n");
}

void main()
{
    int *arr , i , n;
    printf("Enter how many elements do you want to enter: ");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        scanf("%d",arr+i);
    }
    printf("Unsorted List is: ");
    display_list(arr, n);
    Insertion_Sort(arr, n);
    printf("Sorted List is: ");
    display_list(arr, n);
}
```