Insertion Sort

Insertion sort is a simple sorting algorithm that works similar to the way you sort playing cards in your hands. The array is virtually split into a sorted and an unsorted part. Values from the unsorted part are picked and placed at the correct position in the sorted part.

```
#include<stdio.h>
int main()
{
	int num = 0;
	printf("Enter how many element you want = ");
	scanf("%d",&num);
	//Filter
	if(num<=0)
	{
		printf("Invalid Size\n");
		return -1;
	}
	int arr[num]; //array creation

	//Accept Value
	for(int i=0;i<num;i++)
	{
		printf("Enter Number = ");
		scanf("%d",&arr[i]);
	}
```

```
        //Display Array Before Sort
        printf("Before Sort = ");
        for(int i=0;i<num;i++)
        {
                printf("%d ",arr[i]);
        }

        int key,j;

        //Insertion sort logic start from here
        for(int i=1;i<num;i++)
        {
                key = arr[i];
                j = i-1;
                while(j>=0 && key<arr[j])
                {
                                arr[j+1]=arr[j];
                                j--;
                }
                arr[j+1] = key;
        }
        //Insertion sort logic end here

        //Display array after sort
        printf("\nAfter Sort = ");
        for(int i=0;i<num;i++)
        {
                printf("%d ",arr[i]);
        }

        return 0;
}
```