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SE-C Comp, Viit, Pune

CODE:

```
/*
 *
 *@RajvaibhavRahane
 */
#include<iostream>
using namespace std;
void printArray(int *arr,int size){
    for(inti=0;i<size;i++){
        cout<<arr[i]<<" ";
    }cout<<endl;
}
void insertionSort(int *arr,intsize,boolascendingOrder){
    intinsertedElement,i,j;
    for(i=1;i<size;i++){
        insertedElement=arr[i];
        for(j=i-1;j>=0;j--){
            if(ascendingOrder&&arr[j]<insertedElement)break;
            else if(!ascendingOrder&&arr[j]>insertedElement)break;
            arr[j+1]=arr[j];
        }
        arr[j+1]=insertedElement;
        cout<<"Pass "<<i<<" :";printArray(arr,size);
    }
}
intmain(){
    int size;
    cout<<"Enter No of Club Members and their membership number\n";
    cin>>size;
    intarr[size];
    for(inti=0;i<size;i++)
        cin>>arr[i];
    cout<<"\nInsertion Sort\n";
    cout<<"Ascending Order\n";
    insertionSort(arr,size,true);
    cout<<"Descending Order\n";
    insertionSort(arr,size,false);
    return 0;
}
```

Output:



```
rajrahane@vlsraj-lenovo-g500: ~/Desktop/c++/Lab1/FDS$ g++ -o insertionSort insertionSort.cpp
rajrahane@vlsraj-lenovo-g500: ~/Desktop/c++/Lab1/FDS$ ./insertionSort
Enter No of Club Members and their membership number
5 67 11 23 44 9
Insertion Sort
Ascending Order
Pass 1 :11 67 23 44 9
Pass 2 :11 23 67 44 9
Pass 3 :11 23 44 67 9
Pass 4 :9 11 23 44 67
Descending Order
Pass 1 :11 9 23 44 67
Pass 2 :23 11 9 44 67
Pass 3 :44 23 11 9 67
Pass 4 :67 44 23 11 9
rajrahane@vlsraj-lenovo-g500:~/Desktop/c++/Lab1/FDS$
```