

Roll no:07

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Practical No:2

Insertion_7.cpp

```
#include<iostream>
#define MAX 200
using namespace std;

class ABC
{
public :

int arr[MAX];
int n;

void input();
void insertion_sort();
void display();

};

void ABC::input()
{
cout<<"Enter the number of elements "<<endl;
cin>>n;
cout<<"Enter the elements ";
for(int i=0;i<n;i++)
{
cin>>arr[i];
}
}

void ABC::insertion_sort()
{
for(int i=1;i<n;i++)
{
cout<<"PASS"<<"  "<<i<<"  ";
for(int k=0;k<i;k++)
{
cout<<arr[k]<<" ";
}

int temp=arr[i];
for(int j=i;j>0;j--)
{
    if(arr[j-1]>=temp)
```

```
temp=arr[j];
arr[j]=arr[j-1];
arr[j-1]=temp;
}

}

cout<<endl;
}
}

void ABC::display()
{
cout<<"Your sorted array is"<<endl;
for(int i=0;i<n;i++)
{
cout<<arr[i]<<endl;
}
}

int main()
{
ABC c;
c.input();
c.insertion_sort();
c.display();

return 0;

}
```

output:

```
mca@mca-OptiPlex-390:~/Documents/ds$ g++ prog3.cpp -o i
mca@mca-OptiPlex-390:~/Documents/ds$ ./i
Enter the number of elements
7
Enter the elements 20 10 5 3 2 15 21
PASS 1 20
PASS 2 10 20
PASS 3 5 10 20
PASS 4 3 5 10 20
PASS 5 2 3 5 10 20
PASS 6 2 3 5 10 15 20
Your sorted array is
2
3
5
10
15
20
21
mca@mca-OptiPlex-390:~/Documents/ds$
```