PROGRAM 5

Sort a given set of N integer elements using Insertion Sort technique and compute its time taken.

//Code

```
#include<iostream>
#include<ctime>
using namespace std;

void insertion_sort(int arr[],int n){
   for(int i=1;i<n;i++){
      int key=arr[i];
      int j=i-1;
      while(j>=0 && arr[j]>key){
         arr[j+1]=arr[j];
         j--;
      }
      arr[j+1]=key;
   }
   cout<<"Sorted array: ";
   for(int i=0;i<n;i++)
      cout<<arr[i]<<" ";
}

int main(){
   int n;
   cout<<"Enter n: ";
   cin>>n;
   cout<<"Elements: ";
   int arr[n];
   for(int i=0;i<n;i++)
      cin>>arr[i];
   clock_t start=clock();
```

```
    insertion_sort(arr,n);
    clock_t stop=clock();
    cout<<endl<<"Duration: "<<stop-start<<" clocks"<<endl;
}
```

//Output