PROGRAM 9

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

//Code

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

int partition(int a[],int l,int r){
   int p=a[l],s=l;
   for(int i=l+1;i<r;i++)
      if(a[i]<p){
         s++;
         swap(a[s],a[i]);
      }
   swap(a[l],a[s]);
   return s;
}

void quick_sort(int a[],int l,int r){
   if(l<r){
      int s=partition(a,l,r);
      quick_sort(a,l,s);
      quick_sort(a,s+1,r);
   }
}

int main(){
   int n;
   cout<<" Enter n: ";
   cin>>n;
   int a[n];
   cout<<" Enter elements: ";
   for(int i=0;i<n;i++)
```

```
    cin>>a[i];
  clock_t start=clock();
  quick_sort(a,0,n);
  cout<<" Sorted: ";
  for(int i=0;i<n;i++)
    cout<<a[i]<<" ";
  cout<<endl<<" Time: "<<(clock()-start)<<" clock cycles "<<endl;
}
```

//Output