**/\*1.Sort a given set of elements using QUICK SORT method and determine the time required to sort the elements\*/**

#include<stdio.h>

#include<conio.h>

#include<time.h>

int partition(int [],int,int);

void quick\_sort(int a[],int low,int high)

{

int j;

if(low<high)

{

j=partition(a,low,high);

quick\_sort(a,low,j-1);

quick\_sort(a,j+1,high);

}

}

int partition(int a[],int low,int high)

{

int p,i,j,temp;

p=a[low];

i=low;

j=high+1;

do

{

do

i++;

while((a[i]<p) && (i<=p));

do

j--;

while(p<a[j]);

if(i<j)

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

} }

while(i<j);

a[low]=a[j];

a[j]=p;

return j;

}

void main()

{

int a[10],n,i,time\_count;

clock\_t start\_clk,end\_clk;

double time\_used;

clrscr();

start\_clk=clock();

printf("Enter the number of elements\n");

scanf("%d",&n);

printf("Enter array elements\n");

for(i=0;i<n;i++)

scanf("%d",&a[i]);

quick\_sort(a,0,n-1);

printf("Array elements after sorting\n");

for(i=0;i<n;i++)

printf("%d\n",a[i]);

end\_clk=clock();

time\_used=((double)(end\_clk-start\_clk)/CLOCKS\_PER\_SEC);

printf("\nTime required is%d",time\_used);

getch();

}

**/\*OUTPUT**

Enter the number of elements

5

Enter array elements

10

2

65

33

47

Array elements after sorting

2

10

33

47

65

Time required is26647

**\*/**