**Program-9**

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

#include<stdio.h>

#include <time.h>

void quicksort(int number[],int first,int last){

int i, j, pivot, temp;

if(first<last){

pivot=first;

i=first;

j=last;

while(i<j){

while(number[i]<=number[pivot]&&i<last)

i++;

while(number[j]>number[pivot])

j--;

if(i<j){

temp=number[i];

number[i]=number[j];

number[j]=temp;

}

}

temp=number[pivot];

number[pivot]=number[j];

number[j]=temp;

quicksort(number,first,j-1);

quicksort(number,j+1,last);

}

}

int main(){

int i, n, count, number[100];

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

scanf("%d",&count);

printf("The elements generated are:\n");

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

{

number[i]=rand()%1000;

printf("%d ",number[i]);

}

clock\_t begin = clock();

quicksort(number,0,count-1);

printf("\nPrinting the sorted array:\n");

for(i=0;i<count;i++){

printf(" %d",number[i]);

}

clock\_t end = clock();

double time\_spent = (double)(end - begin) / CLOCKS\_PER\_SEC;

printf("\nExecution Time : %.10fseconds\n", time\_spent);

return 0;

}