```c
//Quick Sort
#include<stdio.h>
#include<stdlib.h>
#include<time.h>
void swap(int *a,int *b)
{
    int temp;
    temp=*a;
    *a=*b;
    *b=temp;
}
int partition(int a[],int l,int r)
{
    int pivot=a[r];
    int pindex=l;
    for(int i=l;i<r;i++){
        if(a[i]<=pivot){
            swap(&a[pindex],&a[i]);
            pindex++;
        }
    }
    swap(&a[pindex],&a[r]);
    return pindex;
}
void quicksort(int a[],int l,int r)
{
    if(l<r)
    {
        int p=partition(a,l,r);
        quicksort(a,l,p-1);
        quicksort(a,p+1,r);
    }
}
```

```
797  int main()
798  {
799      int n,a[100];
800      printf("Enter the number of the elements in the array :- ");
801      scanf("%d",&n);
802      printf("Enter The Elements of the array :-\n");
803      for(int i=0;i<n;i++){
804          scanf("%d",&a[i]);
805      }
806      double q=0.0;
807      clock_t begin=clock();
808      quicksort(a,0,n-1);
809      clock_t end=clock();
810      q=((double)end-begin)/CLOCKS_PER_SEC;
811      printf("Elements of the sorted array :-\n");
812      for(int i=0;i<n;i++){
813          printf("%d ",a[i]);
814      }
815      printf("\n\nTime taken for %d elements = %f\n",n,q);
816      return 0;
817  }
818
819
```

```
Enter the number of the elements in the array :- 5
Enter The Elements of the array :-
12
45
7
8
65
Elements of the sorted array :-
7 8 12 45 65

Time taken for 5 elements = 0.000001


...Program finished with exit code 0
Press ENTER to exit console.
```

	Array Values	
Array Size	Random	Worst case
100	0.000032	0.000055
200	0.000023	0.00022
500	0.000074	0.001207
1000	0.000134	0.004812
5000	0.000927	0.096289
10000	0.001843	0.376258
20000	0.004324	1.299804

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