S.No: 15	Exp. Name: *Write a C Program to sort the Array using Quick Sort?*	Date: 2022-08-22

Aim:

Write a C Program to sort the Array using Quick Sort?

Source Code:

quickSort.c

```c
#include<stdio.h>
void qs(int a[], int i,int n,int c);
void main()
{
    int i,n,b,c,a[20];
    printf("Enter size of the list: ");
    scanf("%d",&n);
    c=n;
    printf("Enter %d integer values: ",n);
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    qs(a,0,n-1,c);
    printf("List after sorting is: ");
    for(i=0;i<n;i++)
    {
        printf(" %d",a[i]);
    }
    printf("\n");
}
void qs(int a[20],int first,int last,int c)
{
    int i,j,pivot,temp;
    if(first<last)
    {
        i=first;
        j=last;
        pivot=first;
        printf("pivot : %d\n",a[pivot]);
        while(i<j)
        {
            while(a[i]<=a[pivot]&&i<last)
            i++;
            while(a[j]>a[pivot])
            j--;
            if(i<j)
            {
                temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
        }
        temp=a[pivot];
        a[pivot]=a[j];
        a[j]=temp;
```

```
        for(i=0;i<c;i++)
        {
            printf(" %d",a[i]);
        }
        printf("\n");
        qs(a,first,j-1,c);
        qs(a,j+1,last,c);
    }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter size of the list: 5
Enter 5 integer values: 10 25 3 50 20
pivot : 10
3 10 25 50 20
pivot : 25
3 10 20 25 50
List after sorting is: 3 10 20 25 50