PROGRAM: Quick Sort

```
#include<stdio.h>
int Partition(int A[],int p,int r)
{
	int x,i,j,temp;
	x=A[r];
	i=p-1;
	for(j=p;j<=r-1;j++)
	{
		if (A[j] <=x)
		{
			i=i+1;
			temp=A[i];
			A[i]=A[j];
			A[j]=temp;
		}
	}
	temp=A[i+1];
	A[i+1]=A[r];
	A[r]=temp;
	return (i+1);
}

void QuickSort(int A[],int p,int r)
{
	int q;
	if(p<r)
	{
		q=Partition(A,p,r);
		QuickSort(A,p,q-1);
		QuickSort(A,q+1,r);
```

```
        }

        printf("\n Sorted Array \n");
for(int i=1;i<=r;i++)
                printf("%d ",A[i]);
}


int main()
{
int A[15];
int n,i;
printf("Enter the number of elements \n");
scanf("%d",&n);

printf("az]);


printf("Unsorted Array \n");
for(i=1;i<=n;i++)
{
                printf("%d ",A[i]);
}

QuickSort(A,1,n);
return 0;
}
```

OUTPUT:

```
Enter the number of elements
7
Enter 7 elements
12 1 3 23 44 3 7
Unsorted Array
12 1 3 23 44 3 7
 Sorted Array
1
 Sorted Array
1 3
 Sorted Array
1 3
 Sorted Array
1 3 3
 Sorted Array
1 3 3
 Sorted Array
1 3 3 7 12
 Sorted Array
1 3 3 7 12 23 44
 Sorted Array
1 3 3 7 12 23 44
 Sorted Array
1 3 3 7 12 23 44
```