

# QUICK SORT

```
#include <stdio.h>
#include <conio.h>

int partition(int a[], int low, int high)
{
    int i, j, temp, pivot;
    pivot = a[low];
    i = low + 1;
    j = high;
    while (i <= j)
    {
        while (a[i] <= pivot)
            i++;
        while (a[j] > pivot)
            j--;
        if (i < j)
        {
            temp = a[i];
            a[i] = a[j];
            a[j] = temp;
        }
    }
    temp = a[low];
    a[low] = a[j];
    a[j] = temp;
    return j;
}

void quick_sort(int a[], int low, int high)
{
    int mid;
    if (low < high)
    {
        mid = partition(a, low, high);
        quick_sort(a, low, mid - 1);
        quick_sort(a, mid + 1, high);
    }
}
```

```

    }
}

int main()
{
    int n;
    int a[10];
    printf("Enter the number of elements\n");
    scanf("%d", &n);
    printf("Enter the elements\n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }
    quick_sort(a, 0, n - 1);
    printf("The sorted array is\n");
    for (int i = 0; i < n; i++)
    {
        printf("%d\t", a[i]);
    }
    return 0;
}

```

## OUTPUT

```

Enter the number of elements
5
Enter the elements
35
45
12
1
2
The sorted array is
1      2      12      35      45

```

