



Quick Sort

```
#include<iostream.h>
#include<conio.h>
int a[15], n;
int partition(int, int);
void quicksort(int , int);
main() {
    int i;
    cout<<"Enter the range: ";
    cin>>n;
    for (i = 0; i < n; i++) {
        cout<<"Enter the "<<i+1<<" element: ";
        cin>>a[i];
    }

    cout<<"\nThe array before sorting:\n";
    for (i = 0; i < n; i++)
        cout<<a[i]<<" ";

    quicksort(0, n - 1);

    cout<<"\nThe array after sorting:\n";
    for (i = 0; i < n; i++)
        cout<<a[i]<<" ";
}

void quicksort(int low, int high) {
    int loc;
    if (low < high) {
        loc = partition(low, high);
        quicksort(low, loc - 1);
        quicksort(loc + 1, high);
    }
}

int partition(int low, int high) {
    int i, j, pivot, temp;
    pivot = a[low];
    i = low;
    j = high;
```

```
while (i < j) {
    while (i < j && pivot >= a[i])
        i++;

    while (pivot < a[j])
        j--;

    if (i < j) {
        temp = a[i];
        a[i] = a[j];
        a[j] = temp;
    }
    else {
        temp = a[low];
        a[low] = a[j];
        a[j] = temp;
    }
}

return j;
}
```