

QUICK SORT ALGORITHM CODE

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#include <bits/stdc++.h>
int partition(vector<int> &arr, int low, int high) {
    int pivot = arr[low];
    int i = low;
    int j = high;
    while(i < j) {
        while(arr[i] <= pivot && i <= high - 1) {
            i++;
        }

        while(arr[j] > pivot && j >= low + 1) {
            j--;
        }
        if(i < j) swap(arr[i], arr[j]);
    }
    swap(arr[low], arr[j]);
    return j;
}

void qs(vector<int> &arr, int low, int high) {
    if(low < high) {
        int pIndex = partition(arr, low, high);
        qs(arr, low, pIndex - 1);
        qs(arr, pIndex + 1, high);
    }
}

vector<int> quickSort(vector<int> arr)
{
    qs(arr, 0, arr.size() - 1);
    return arr;
}
```