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**QuickSort Program-**

#include <cstdlib>

#include <iostream>

using namespace std;

int partition(int arr[], int low, int high)

{

int pivot = arr[high];

int i = (low - 1);

for (int j = low; j <= high - 1; j++)

{

if (arr[j] >= pivot) {

i++;

swap(arr[i], arr[j]);

}

}

swap(arr[i + 1], arr[high]);

return (i + 1);

}

int partition\_r(int arr[], int low, int high) // Generates Random Pivot

{

srand(time(NULL));

int random = low + rand() % (high - low);

swap(arr[random], arr[high]);

return partition(arr, low, high);

}

void quickSort(int arr[], int low, int high)

{

if (low < high)

{

int pi = partition\_r(arr, low, high);

quickSort(arr, low, pi - 1);

quickSort(arr, pi + 1, high);

}

}

void printArray(int arr[], int size)

{

int i;

for (i = 0; i < size; i++)

printf("%d ", arr[i]);

printf("\n");

}

int main()

{

char c;

string inp;

int arr[20], pos, n = 0;

cout<<"Quick Sort Program: \n";

cout<<"Enter the list of numbers to be sorted and press \* at the end of input: \n";

while((c = getchar()) != '\*'){

if(c == '\r'){

cout << "\n";

continue;

}

if(c == '\b'){

cout << " \b";

inp.pop\_back();

continue;

}

inp += c;

}

cout << "Sorted list of numbers: \n";

while ((pos = inp.find(",")) != string::npos) {

arr[n++] = stoi(inp.substr(0, pos));

inp.erase(0, pos + 1);

}

arr[n] = stoi(inp.substr(0));

quickSort(arr, 0, n);

for(int i = 0; i <= n; i++)

cout << arr[i] << ",";

}

**Output:**

|  |
| --- |
| Quick Sort Program:    Enter the list of numbers to be sorted and press \* at the end of input:  5,9,-2,35,7,2,4,1\*  Sorted list of numbers:  35,9,7,5,4,2,1,-2 |