

DS QUICK SORT

The screenshot shows a C++ IDE with the following code in the editor:

```
1 #include<stdio.h>
2 #include<conio.h>
3 void qsort(int arr[20], int fst, int last);
4 int main()
5 {
6     int arr[30];
7     int i, size;
8     printf("Enter total no. of the elements : ");
9     scanf("%d", &size);
10    printf("Enter total %d elements : \n", size);
11    for(i=0; i<size; i++)
12        scanf("%d", &arr[i]);
13    qsort(arr, 0, size-1);
14    printf("\n Quick sorted elements \n");
15    for(i=0; i<size; i++)
16        printf("%d\t", arr[i]);
17    return 0;
18 }
19 void qsort(int arr[20], int fst, int last)
20 {
21     int i, j, pivot, tmp;
22     if(fst < last)
23     {
24         pivot = fst;
25         i = fst;
26         j = last;
27         while(i < j)
28         {
29             while(arr[i] <= arr[pivot] && i < last)
30                 i++;
31             while(arr[j] > arr[pivot])
32                 j--;
33             if(i < j)
34             {
35                 tmp = arr[i];
36                 arr[i] = arr[j];
37                 arr[j] = tmp;
38             }
39             tmp = arr[pivot];
40             arr[pivot] = arr[j];
41             arr[j] = tmp;
42             qsort(arr, fst, j-1);
43             qsort(arr, j+1, last);
44         }
45     }
46 }
```

The compiler output shows:

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\jaswa\OneDrive\Documents\DS merge sort.exe
- Output Size: 323.4633984375 KiB
- Compilation Time: 0.39s
```

The screenshot shows the same C++ IDE with the program executed. The console output is as follows:

```
Enter total no. of the elements : 5
Enter total 5 elements :
12
2
9
89
4

Quick sorted elements
2   4   6   12   89

Process exited after 23.44 seconds with return value 0
Press any key to continue . . .
```

The compiler output shows:

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\jaswa\OneDrive\Documents\DS Quick sort.exe
- Output Size: 323.4633984375 KiB
- Compilation Time: 0.41s
```