

Quick Sort

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pivot

66

left

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
66	33	99	11	77	22	55	44	88

i

right

j

66 <= pivot (66) ? Yes i++

33 <= 66 ? Yes i++

99 <= 66 ? No --> swap with other element from the right.

88 > 66 ? Yes j--

44 > 66 ? No swap 99 with 44

pivot

66

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
66	33	44	11	77	22	55	99	88

i

j

44 <= 66 ? Yes i++

11 <= 66 ? Yes i++

77 <= 66 ? No -> swap with other element from right

99 > 66 ? Yes j--

55 > 66 ? No swap with i

Pivot

66

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
66	33	44	11	55	22	77	99	88

j

i

55 <= 66 ? Yes i++

22 <= 66 ? Yes i++

77 <= 66 ? No -> swap

77 > 66 ? Yes j--

i and j cross -> swap j with pivot

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
22	33	44	11	55	66	77	99	88

Left partitioning -> left to j-1

Right partitioning -> j+1 to right

pivot

22

left

right

[0]	[1]	[2]	[3]	[4]
22	33	44	11	55

i

j

22 <= 22 ? Yes i++

33 <= 22 ? No -> swap

55 > 22 ? Yes -> j--

11 > 22 ? No -> swap with i

Pivot

22

[0]	[1]	[2]	[3]	[4]
22	11	44	33	55

j

i

Pivot

77

left

right

[6]	[7]	[8]
77	99	88

j

i

77 <= 77 ? Yes i++

99 <= 77 ? No -> swap

88 > 77 ? Yes -> j--

99 > 77 -> yes j--

i and j cross -> swap j with pivot

[6]	[7]	[8]
77	99	88

11 <= 22 ? Yes -> i++
 44 <= 22 ? No -> swap

33 > 22 ? Yes j--
 44 > 22 ? Yes j--

I and j cross -> swap j with pivot.

No Left partition

Right partitioning

Pivot
99

[7]	[8]
99	88

j i

[0]	[1]	[2]	[3]	[4]
11	22	44	33	55

99 <= 99 -> yes i++
 88 <= 99 yes i++

I and j cross -> swap j with pivot

Left partitioning

Right partitioning

[0]
11

left

Right

Pivot
44

[2]	[3]	[4]
44	33	55

j i

[7]	[8]
88	99

Left partitioning

44 <= 44 ? Yes i++
 33 <= 44 ? Yes i++
 55 <= 44 ? No -> swap

55 > 44 ? Yes j--
 33 > 44 ? No
 I and j cross
 Swap j with pivot

[2]	[3]	[4]
33	44	55

[7]
88

Left partitioning

Right partitioning

[2]
33

[4]
55