

1. Show how the arrays are partitioned with a[0] as the pivot

1. a: [55, 61, 22, 97, 56, 96, 96, 88, 57, 49, 31, 48]
2. a: [1, 2, 3, 4, 5]
3. a: [5, 4, 3, 2, 1]
4. a: [5, 5, 5, 5, 5]

Answer:

1.1

indexes		0	1	2	3	4	5	6	7	8	9	10	11
initial values	i=0 j=12	[55,	61,	22,	97,	56,	96,	96,	88,	57,	49,	31,	48]
scan left, scan right	i=1 j=11	[55,	61,	22,	97,	56,	96,	96,	88,	57,	49,	31,	48]
exchange	i=1 j=11												
scan left, scan right	i=3 j=10	[55,	48,	22,	97,	56,	96,	96,	88,	57,	49,	31,	61]
exchange	i=3 j=10												
scan left, scan right	i=4 j=9	[55,	48,	22,	31,	56,	96,	96,	88,	57,	49,	97,	61]
exchange	i=4 j=9												
scan left, scan right	i=5 j=4	[55,	48,	22,	31,	49,	96,	96,	88,	57,	56,	97,	61]
exchange a[0] and a[j]		[49,	48,	22,	31,	55,	96,	96,	88,	57,	56,	97,	61]

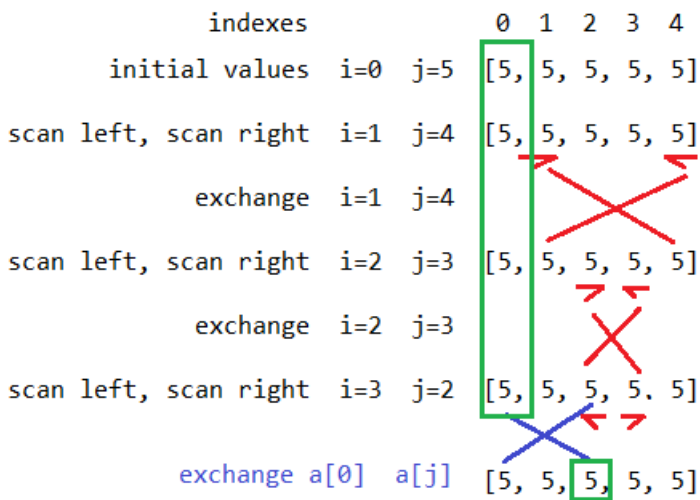
1.2

indexes		0	1	2	3	4
initial values	i=0 j=5	[1,	2,	3,	4,	5]
scan left, scan right	i=1 j=0	[1,	2,	3,	4,	5]
exchange a[0] a[j]		[1,	2,	3,	4,	5]

1.3

indexes		0	1	2	3	4
initial values	i=0 j=5	[5,	4,	3,	2,	1]
scan left, scan right	i=4 j=4	[5,	4,	3,	2,	1]
exchange a[0] a[j]		[1,	4,	3,	2,	5]

1.4



2. Trace Quick Sort with the given input arrays

1. a: [1, 2, 3, 4, 5]
2. a: [5, 4, 3, 2, 1]
3. a: [5, 5, 5, 5, 5]

Answer:

