

In a quick sort, there are 3 types of indices to keep track of:

a pivot (denoted below with a p)

a tooLarge (denoted below with an L)

a tooSmall (denoted below with an s)

Note that it is possible for indices to occupy the same spot.

In addition to tracking the indices, the search recursively divides the array into partitions. Each partition gets its own set of indices (although L & s may stray at the end of a sweep). I'll denote partitions by enclosing them in | bars | & giving each partition a number. (E.G. L2 is tooLargeIndex for partition #2)

p1	L1								s1
49	97	17	60	45	48	46	96	83	32
p1	L1								s1
49	32	17	60	45	48	46	96	83	97
p1		L1						s1	
49	32	17	60	45	48	46	96	83	97
p1			L1				s1		
49	32	17	60	45	48	46	96	83	97
p1			L1			s1			
49	32	17	60	45	48	46	96	83	97
p1			L1			s1			
49	32	17	46	45	48	60	96	83	97
p1				L1	s1				
49	32	17	46	45	48	60	96	83	97
p1					L1 s1				
49	32	17	46	45	48	60	96	83	97
p1					s1	L1			
49	32	17	46	45	48	60	96	83	97
p1					s1	L1			
48	32	17	46	45	49	60	96	83	97
p1	L1			s1	p2	L2		s2	
48	32	17	46	45	49	60	96	83	97
p1		L1		s1	p2	L2		s2	
48	32	17	46	45	49	60	96	83	97
p1				s1 L1	p2	L2 s2			
48	32	17	46	45	49	60	96	83	97
p1				s1	L1p2 s2	L2			
48	32	17	46	45	49	60	96	83	97
p1				s1	L1p2 s2	L2			
45	32	17	46	48	49	60	96	83	97
p1	L1		s1	p3 L3 s3	p2L2s2	p4	L4		s4
45	32	17	46	48	49	60	96	83	97
p1		L1 s1		p3 L3 s3	p2L2s2	p4	L4	s4	

continued on next page

continued from previous page

45	32	17	46	48	49	60	96	83	97
p1		s1	L1	p3 L3 s3	p2L2s2	p4	L4 s4		
45	32	17	46	48	49	60	96	83	97
p1		s1	L1	p3 L3 s3	p2L2s2	p4 s4	L4		
17	32	45	46	48	49	60	96	83	97
p1	s1 L1	p5	L5 s5	p3 L3 s3	p2L2s2	p4 s4 L4	P6	L6	s6
17	32	45	46	48	49	60	96	83	97
p1 s1	L1	p5 s5	L5	p3 L3 s3	p2L2s2	p4 s4 L4	P6	s6	L6
17	32	45	46	48	49	60	96	83	97
p1 s1 L1	p7 s7 L7	p5 s5 L5	p8L8s8	p3 L3 s3	p2L2s2	p4 s4 L4	P6	s6	L6
17	32	45	46	48	49	60	83	96	97
p1 s1 L1	p7 s7 L7	p5 s5 L5	p8L8s8	p3 L3 s3	p2L2s2	p4 s4 L4	P6s6L	p9	s9 L9
17	32	45	46	48	49	60	83	96	97
p1 s1 L1	p7 s7 L7	p5 s5 L5	p8L8s8	p3 L3 s3	p2L2s2	p4 s4 L4	P6s6L	p9 s9	L9
17	32	45	46	48	49	60	83	96	97
p1 s1 L1	p7 s7 L7	p5 s5 L5	p8L8s8	p3 L3 s3	p2L2s2	p4 s4 L4	P6s6L	p9 s9 L9	p0 s0 L0
17	32	45	46	48	49	60	83	96	97