

Quick Sort

Trace the following code

```
1  def partition(a, start, end):
2      pivot = a[end]
3      i=start-1
4      for j in range(start, end):
5          if a[j] <= pivot:
6              i=i+1
7              a[i], a[j] = a[j], a[i]
8  a[i+1], a[end] = a[end], a[i+1]
9  return i+1

10 def quickSort(a, start, end):
11     if start < end:
12         p = partition(a, start, end)
13         quickSort(a, start, p-1)
14         quickSort(a, p+1, end)

15 data = [9, 3, 8, 6]
16 quickSort(data, 0, len(data) - 1)
17 print(data)
```

Call	pivot	i	j	start	end	p	a
1 quicksort				0	3		[9,3,8,6]
1 partition	6	-1	0				
		0	1				[3,9,8,6]
			2			1	[3,6,8,9]
2 quicksort				0	0		
3 quicksort				2	3		
2 partition	9	1	2				
		2				3	
4 quicksort				2	2		
5 quicksort				4	3		

Stack Heap